

Personal Profile of Mobile Phone Owners among Fisher Folk in Fishing Communities of Kainji Lake Basin, Nigeria

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Abstract

An investigation was carried out of the personal profile of mobile phone owners among fisher folk in fishing communities of Kainji Lake, Nigeria. From eleven fishing communities in two local government areas, 165 fisher folk were randomly selected and in 2010 given interviews to generate data which was analysed. The fisher folk were advanced in age and had poor educational backgrounds which affected their reading and writing ability but they showed signs of attitude modification in marriage-related issues. The study group were small scale entrepreneurs with many years of experience in fisheries. Mobile phone ownership was skewed against women fisher folk but seen as an opportunity to improve social and economic interactions. Ownership of mobile phones is an indication of acquisition of ICT as a productive asset which supports access and usage while its use for communication attests to change in the information behaviour of fisher folk in the communities. Glo, MTN and Airtel network services are received and used for communication in fishing communities, but the Glo network is the most widely used. Rural women should be encouraged to buy mobile phones while GSM operators should extend the scope of coverage in the lake basin to improve social interaction and economic activities in the area.

Introduction

Valdés *et al* (2009) wrote that one major factor driving growth in food demand and absolute levels of poverty is demography. Between 2010 and 2030 the world population is projected to grow by about 20%, from 6.9 to 8.3 billion. Nigeria is witnessing a rapid growth in population above 160 million and a rising demand for food as the world hit 7 billion people in October 31, 2011 according to the United Nations. Growth in population without commensurate increase in local food production has put pressure on food importation to meet national demand. For instance, Nigeria imported ₦98 trillion worth of food equivalent to \$628 billion between 2007 and 2010 (Oloja, 2011). In 2010 alone, it spent ₦632 billion on wheat, ₦356 billion on rice,

₦217 billion on sugar and ₦97 billion on fish. Within the same period, domestic fish production was 600.65, 633.20, 668.75, 709.68 and 759.16 tonnes for 2006, 2007, 2008, 2009 and 2010 respectively whereas artisanal inland fisheries contribution was 232.72, 244.80, 255.47, 270.32, and 286.4 tonnes (Central Bank of Nigeria, CBN) 2010). The difference in domestic production of fish and total fish demand is in excess of 1.66 metric tonnes which has created a huge gap with consequences for food insecurity, malnutrition and poverty in the country.

Artisanal fisher folk are among the poorest of the poor but produce most of the domestic fish rich in protein and widely consumed. Calculated artisanal inland fisheries' contribution to domestic fish production was 38.7%, 38.6%, 38.2%, 38.0% and 37.7% between 2006 and 2010 showing a negative decline from 38.6% to 37.7% within the period. This is a dangerous sign for fisher folk, consumers and the economy if drastic action is not taken to reverse the trend. Some of the predicaments documented are poor extension contact with extension agents, fisheries institutions, subject matter specialist, lack of access to fisheries information, technologies and inputs, poor credit and infrastructure as noted by Ifejika (2011) and Adeokun *et al* (2006). Increasing fish production of artisanal inland fisheries requires improvement of the observed deficiencies in extension delivery services within their social, economic and cultural levels.

Studies have proven that modern information communication technology (ICT) holds the key to extension delivery services particularly mobile phones which enjoy high ownership and usage among farmers and extension personnel compared to others in the country (Banmeke *et al*, 2010; Agwu *et al*, 2008; and Adesope *et al*, 2007). Equally, fisher folk are among the rural farmers who own and use mobile phones for communication in their livelihood activities (Ifejika, 2011; Ifejika *et al*, 2009). Ownership of mobile phones by fisher folk is an indication of their access and ability to use it for communication. According to

Meyer (2009) the main reason is that it enables the delivery of and access to information with virtually no restrictions in terms of distance and time. Hence, it signals rural farmers' readiness to participate in organised extension advisory services with mobile phones. According to the International Telecommunication Union (ITU) (2003), ownership means an individual possesses an ICT device. In this case the ICT device is a mobile phone, while mobile cellular telephone refers to a portable telephone subscribing to a public mobile telephone service using cellular technology which provides access to the public switched telephone network (ITU, 2009).

However, Meyer (2009) cautioned that sharing information across cultural boundaries does not always live up to expectations due to the information behaviour of rural people. In the South African context, Synman and Synman (2003) reported that IT-driven information provision in developing communities did not live up to expectations. Others like Rhodes (2003), Van Belle and Trusler (2005) showed that despite the introduction of IT-driven information services, such as telecenters, users tend not to use these to satisfy their specific information needs. It was the desire to avoid such errors that prompted Bene *et al* (2007) to say that generating appropriate information is not sufficient; more attention must be devoted to identify target audiences, tailor messages to reach those audiences and define media strategies to reach the intended targets.

An entry point to avoid the observed error in IT- based information dissemination is to understand the personal profile of mobile phone owners as primary stakeholders and end users. Townsley (1998) said that sociological analysis attempts to identify and understand the various factors generated by the social setting which affects the ways in which people behave. Townsley added that socio-economic criteria may be used as a means of identifying stakeholder communities and deciding on new patterns of resource distribution. Different social and economic strata within fishing communities differ from one another in many areas. In Nigeria, Kainji Lake is a popular site for artisanal inland fishing with a large population of fishers, fish processors, fish marketers and others. Mobile phone communication services entered the area in 2004 and now four operators (Glo, MTN, Airtel and Etisalat) of the Global System

of Mobile communication (GSM) are present in New-Bussa, an urban town on the western side of the lake (Ifejika *et al*, 2009). Since then, mobile phones have revolutionised communication and information, people and businesses in the area. This informed the decision to ascertain the personal profile of artisanal fisher folk who own mobile phones. Such periodic investigation aimed to provide useful information for initiating and guiding extension advisory services with mobile phones to serve the interests of fisher folk and their livelihood activities devoid of errors and within acceptable norms. The guiding objectives were:

- to ascertain the social characteristics of mobile phone owners in fishing communities
- to ascertain the economic characteristics of mobile phone owners in the area
- to determine network use for communication in the communities.

Study Area

The 42 year old Kainji Lake in Nigeria was used in 1968 for hydro-power generation and popularly known as Kainji Dam. Situated between kilometres 1008 to 1144 along the 5,872 kms of the River Niger, it covers an area of 1250km² and is located at longitude 9°50' – 10° 55'N and latitude 4°23' – 45'E (Okoye, 1992). The neighbouring states are Niger and Kebbi under five Local Government Areas namely Borgu, Agwara, Magama, Yauri and Ngaski. According to the Nigeria-Germany Kainji Lake Fisheries Promotion Project (NGKLFPP) (2002) report, the lake provides livelihoods to 6,613 people in 314 fishing communities.

Observations and multiple sampling techniques were used in the study. Kainji Lake was stratified into two states bordering it, Niger and Kebbi, while Niger on the western side was chosen due to the existence of the GSM network. Two LGAs in Niger were randomly selected - Borgu and Magama - and a purposive method was used to select 11 permanent fishing communities from a list of 174 communities in Niger. The population for the study was comprised of fisher-folk in selected 11 fishing communities in Borgu and Magama LGA while the sample size from the population was estimated to be 280 fisher-folk mobile phone owners in selected fishing communities namely Malale, New-Bussa, Musawa, Monai, Yuna, Gwatanwara in Borgu

LGA and Kaya, Sakajinka, Yunawa, Tunga Angulu, Tunga Alhaji Ibrahim in Magama LGA. From the sample size of 280, a random sampling method was used to select 165 respondents. Percentage, mean and frequency were statistical tools used to analyse data collected with interview schedules through interviews in June and August, 2010.

Results and Discussion

Social characteristics

The social issues examined were age, gender, marital status, number of wives, religion, education, disability status and household size as shown in Table 1. Response on age revealed that the maximum and minimum ages were 70 and 15 years respectively whereas the mean age was approximately 37. The most active age groups that own mobile phone were fisher folk in early and middle adulthood age brackets of 25-34 and 35-44 years while the youth proportion was small (14%). A similar finding on age was reported by Ifejika *et al* (2009) among fish mongers and Ofuoku *et al* (2007) among livestock farmers. It implies that mobile phone ownership cuts across different age strata and groups and is likely to affect their information behaviour in terms of information seeking in livelihood activities beyond the communities' boundaries.

On gender, most mobile phone owners were men (77.6%) compared to women (22.4%). However, Olatokun (2009) found more women (60%) over male (40%) in rural communities in Oyo State. Disparities between men and women on mobile phone ownership suggest it is skewed against women in fishing communities. It is feared that this might lead to denial of access and usage among household members. Hence, more women should be encouraged to buy mobile phones to avoid intimidation by men folk in the family.

The result of marital status showed that one-quarter (80%) were married followed by singles (15.8%). High ownership of mobile phones within a short period indicates a fast rate of adoption and the value attached to communication and information for social and economic interaction with relatives and business associates in modern society. A higher proportion of respondents (36.4%) practised monogamy closely followed by polygamy (30%). Polygamy is an accepted norm among Muslims in the area. About 16 years ago, Rettberg *et al* (1994) reported 76%

men have more than one wife around the lake basin. The decrease in polygamy suggests that traditional norms are losing popularity and signifies a generational change in religious beliefs and adjustment to modern life based on personal choice/decisions.

Information on religion disclosed that all the respondents (100%) participate in religious activities. The most popular religion was Islam practiced by 83.6% of respondents with 16.4% Christians. An earlier study by Rettberg *et al* (1994) among fisher folk on the lake established the dominance of Muslims. Religious affinity provides opportunities for formation of social and economic cooperative associations to promote livelihood in fisheries. Besides communication, mobile phones serve as clocks, alarms for time keeping in activities and calling of prayers by Muslims known as "kiran sallah" in Hausa language in fishing communities (Ifejika 2011).

The response on education which was measured on years of schooling revealed that the minimum and maximum years of schooling were 0 and 19 years respectively the mean being 5 years. Almost 40% had no schooling, followed by 29.7% for 1-6 years and 27.9% for 7-12 years. 68.5% with 0 to 6 years of schooling are considered illiterate due to their inability to read and write selected languages such as English, Hausa and Arabic. Fisherfolk in the area have poor education as found in earlier studies by Ifejika *et al* (2009) and Rettberg *et al* (1994). The high level of illiteracy to a large extent will determine the type of mobile phone owned, its use for communication and participation in any IT driven extension delivery service. Equally, it will affect information behaviour and any benefits they derive from promotions of GSM service providers in the country aimed at reducing charges. They need training before initiating any IT based extension advisory services within their knowledge and skill levels.

The table tells us that none of the respondents suffered any kind of disability. This is a boost in their physical ability to operate and use mobile phones. However, some respondents mentioned that they sustain injuries such as cuts and fish spine injury in carrying out their fisheries' activities.

Entries on house hold size were categorised into two groups; under 14 years and over 15 years. Household sizes of 1 to 5 were 79.4%

and 75.8% for boys and girls respectively compared to large household sizes of 6 to 10. For adults, households of 1 – 4 members dominated with 82.6% for men and 81.2% for women while the mean household size remained at 3 members. The present household sizes are a deviation from the large mean household size of 4.4 found about 16 years ago around the lake basin by Rettberg *et al*, (1994). This supports the low number of wives and polygamy linked to generational attitudinal change. Improvements in communication and information exchange through mobile phones in the past few years might be a contributory factor for the observed modification in attitude.

Economic characteristics

Economic characteristics investigated included employment, occupation, years of experience, income and income activities and are presented in Table 2. Employment is one of the economic indicators that refer “to people above certain age who worked during a reference period” as defined by the International Labour Organisation (ILO) (1996). Responses revealed that almost all respondents (97.0%) were self-employed and only 3% were paid employees. Respondents’ age, occupation and experience attest to their self employment in fisheries. They need interaction, exchange of ideas and linkages with stakeholders in the chain of fisheries business within and outside their environment to improve their livelihood activities of which access to mobile phone is seen as an opportunity for development purposes.

Entries on occupation showed that respondents engaged in three primary types of - fishing (65.5%), fish processing (17.5%) and fish marketing (17%). Fishing is a male-dominated activity whereas fish processing and marketing are dominated by women. Mobile phones have been found to be useful tools for calling customers, fishers on rich fish locations, weather, market access and better sales of fish as well as contacting credit and health institutions as documented in studies by Ifejika (2011), Ifejika *et al* (2009), and Jensen (2007).

Years of engagement in fisheries activities ranged from a minimum of 1 and a maximum of 45 years with a mean of 17 years. The highest experience occurred at 11-20years (44.3%), 1-10years (30.9%) and 21-30years (21.2%). The experience fisher folk build over

four decades is viewed as an asset and a valuable factor contributing to the fishery business, for survival, risk management, generation of knowledge and source of information which can be shared with others through mobile phones.

Respondents’ annual income profile ranged from ₦5,000.00 to ₦500,000.00 with the mean being ₦ 54,061.40. Close to ¾ of respondents (74.6%) were small scale fisher folk earning between ₦5,000.00 and ₦50,000.00, followed by 16.6% earning ₦51,000.00 to ₦100,000.00 and 8.7% earning above ₦101,000.00. The annual income of most fisher folk is insufficient to meet family needs and push them over the poverty line and confirms that fisher folk are among the poorest of the poor. Jensen’s (2007) study in India confirmed that mobile phone-aided fishers make better sales and income so ownership of modern ICT like mobile phones is one option for empowerment of fisher folk to improve their lives and earn better incomes.

Approximately 17% of fisher folk use mobile phones for income generation to support their livelihood activities compared to 38.4% of their household members. The selling of recharge cards i.e. credit is commonly practised by 6.1% and 12.7% of respondents and their household members, recharging of phone batteries (7.9%) by respondents and (9.7%) by household members. The diverse benefits of mobile phones urges a fast rate of adoption among rural fishing communities.

GSM network services use for communication

Respondents’ choice of the GSM network for communication in the last 12 months showed that Glo network is the most widely used at 89.1% trailed by MTN (53.3%) and Airtel (40.6%) see Figure 1. It means that Glo, MTN and Airtel are network services received in fishing communities hence they are not aligned to mobile phone technology. The leadership of Glo in the area is confirmed by it being always used for communication by 75.8% of respondents trailed by 24.2% for MTN and 16.4% for Airtel. On occasional usage, MTN came first with 29.1% followed by Airtel (24.2%) and Glo (13.3%). About half respondents 59.4% and 46.7% never used Airtel and MTN respectively to communicate within the period. This result supports the report of the National Communication Commission (NCC) (2009) that GSM controls

87% of services in the country piloted by MTN, Glo and Airtel service providers. The Glo network is the most popular and widely used because of wider coverage in the area of study and being best suited for mainstreaming in extension delivery services around the lake basin.

Conclusion and Recommendations

The study concludes that mobile phone ownership gives the opportunity to improve social and economic characteristics of fisher folk in the area. Fisher folk are advanced in aged, have poor education which affects their ability to read and write but show signs of attitude modification in marriage-related issues. The study group were small scale entrepreneurs with many years of experience seen as an asset for their survival in fisheries. Mobile phone ownership is skewed against women but it has affected fisher folk's information behaviour due to access and usage. GSM network services received and used for communication are Glo followed by MTN and Airtel.

Fisher folk are ready for mobile phone driven extension advisory services as evident in their high ownership and usage for communication. Glo seems to be ideal, based on coverage, usage and popularity followed by MTN. However, fisher folk need adequate training and guidance to be able to reap the benefits of such services. Hence, fisher folk's personal profiles like age, gender, education, occupation, income and religion should be considered seriously before initiating any mobile phone-based fisheries extension services in the area. Expanding the scope of GSM network coverage is desirable to cover the entire fishing communities in the lake basin.

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Table 1: Social characteristics of fisher folk who own mobile phones

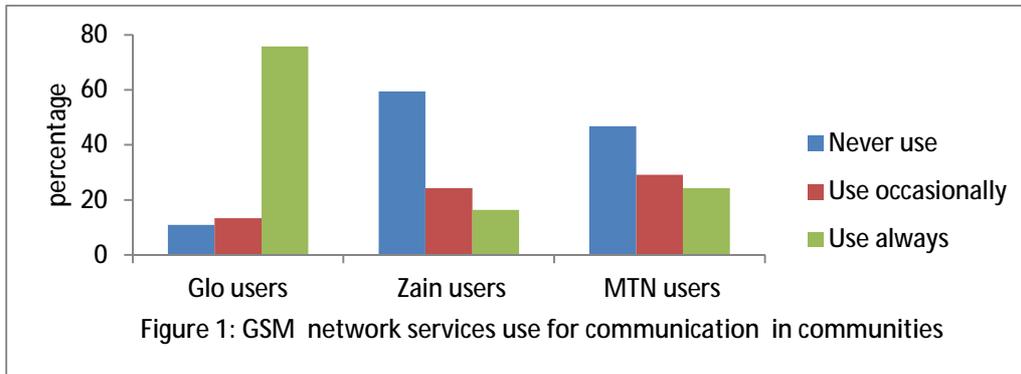
Age	Frequency	%		
15-24	23	13.9		
25-34	53	32.2		
35-44	45	13.9		
45-54	29	17.6		
55-64	13	8.5		
65 above	2	1.2		
Gender				
Men	128	77.6		
Women	37	22.4		
Marital Status				
Single	26	15.8		
Widow	2	1.2		
Widower	3	1.8		
Married	132	80.0		
No of wives				
1wife	60	36.4		
2wives	46	27.9		
3wives	3	1.8		
Religion				
Take part in religion	165	100.0		
Islam	138	83.6		
Christian	27	16.4		
Education (Years of Schooling)				
0 years	64	38.8		
1-6	49	29.7		
7-12	46	27.9		
13-18	6	3.6		
Disability status				
Yes	0	0		
No	165	100.0		
Household size				
Under 14		Boys	Girls	
	frequency	%	Frequency	%
1-5	131	79.4	125	75.8
6-10	12	7.3	14	8.5
Above 15 years				
	Men		Women	
1-4	136	82.6	134	81.2
5-8	13	6.7	21	12.7

Source: Computer generated from field data, 2010

Table 2: Economic characteristics of fisher folk	Frequency	Percentage
Employment status		
Self-employed	160	97.0
Paid employee	5	3.0

Occupations				
Fisher			65.5	
Fish processors			17.5	
Fish marketers			17.0	
Experience				
1-10	51		30.9	
11-20	73		44.3	
21-30	35		21.2	
31 above	6		3.6	
Estimated annual income (₦)				
5,000.00-25,000.00	43		37.7	
26,000.00-50,000.00	42		36.9	
51,000.00-75,000.00	9		7.9	
76,000.00-100,000.00	10		8.7	
101 above	10		8.7	
Income activities relating to mobile phone				
		Respondents		Household
Selling recharge card	10	6.1%	21	12.7%
Recharge phone battery	13	7.9	16	9.7
Repair handset	3	1.6	3	1.8
Operate phone call services	2	1.2	5	3.0

Source: Computer generated from field data, 2010



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Creation Date: 04/07/2012 16:44:00

Change Number: 26

Last Saved On: 01/01/2014 12:21:00

Last Saved By: Janet Wilson

Total Editing Time: 1,047 Minutes

Last Printed On: 01/01/2014 12:21:00

As of Last Complete Printing

Number of Pages: 7

Number of Words: 4,054 (approx.)

Number of Characters: 23,108 (approx.)