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HOUSEHOLDS MEMBERS' PERCEPTIONS ON CONTEMPORARY TELECOMMUNICATIONS SERVICES: CASE OF A LOCAL GOVERNMENT AREA IN LAGOS NIGERIA

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Abstract

A constituent of a working society that may determine its economic well-being could be households and their communication needs should not be underplayed. Telecommunications services' satisfaction of households' members should be assessed from their own communicative perceptions and not just based on providers' standards. Besides, telecommunications services' satisfaction may differ due to some socio-demographic factors, which will enhance how stakeholders will address underperformance. This study examines the perceptions of households' members as regards contemporary telecommunications services being offered to them by providers, especially how satisfied they are. A final sample of 323 households' members and quantitative techniques were used in the analysis. The findings indicate that there is significant difference between some socio-demographic factors and satisfaction derived from telecommunications services. The study recommends that providers and executives should develop innovative strategies such as promotions aimed at reducing call charges and also encourage the use of certain telecommunications services.

Keywords: household communication, mobile communications technology, mobile voice, socio-demographic factors, telecommunications services.

Introduction

Telecommunications is associated with the provision of essential communication services focused at information exchange among people for social interaction and possibly for economic gains. National Research Council (2006, p. 6) basically defines telecommunications as "the suite of technologies, devices, equipment, facilities, networks, and applications that support communication at a distance." Today, telecommunications incorporates many applications that combine both old and new technologies with the aim of making communication among people uncomplicated (Mugwisi et al., 2015). Telecommunications embraces information and communications technology (ICT) that encompasses technologies such as fixed telephone lines; mobile phones; satellite systems; software and hardware; among others (Ali et al., 2016). ICT has changed the way we communicate with each other (Roztocki et al., 2019) and the organization of our social lives depends on ICT (Roztocki et al., 2019; Roztocki&Weistroffer, 2016).

In 2001, Nigeria experienced a transformation in the telecommunications sector with the commencement of the Global System for Mobile Communications (GSM) to augment the

inadequate analogue system (Adegoke&Babalola, 2011; Elegbeleye, 2005). GSM as a mobile communications technology is an open and digital cellular technology that provides the fundamentals to telecommunications services such mobile voice, data services, messaging facility as well as roaming services on mobile phones (Dixit & Garg, 2014). In Nigeria, there are four main mobile communications technology providers namely: MTN, Glo, Airtel and 9mobile. Some of these providers also operate in the area of fixed/fixed wireless telecommunications technology. According to Forenbacher et al. (2019), Gillwald et al. (2018), and Onyeajuwa (2017), GSM has helped in building social relationship within and among household members by breaking communication barrier and making communication effortless and effective. But then, with most indicators of telecommunications performance coming from providers (Gillwald et al., 2018), and not users such as households' members, can we say that they are satisfied with telecommunications services offered to them by these providers?

According to *O'Sullivan and Steven (2003, p. 29),* "the household is the basic unit of analysis in many social, microeconomic and government models, and is important to economics and inheritance". A household is viewed as a critical investment in the long term and highly significant in the economy of a functioning society (Berisha&Meszaros, 2018; Giovannini, 2008; Mlčoch, 2007). A household is connected with a set of persons and the activities they undertake (McGregor, 2016). Expansively, Giovannini (2008) describes the household as consisting of a small group of people sharing the same living accommodation, who pool some, or all, their income and wealth and who consume certain types of goods and services collectively. Therefore, it is not surprising that McKinsey and Company (2013) reported that half of Nigeria's growth in wealth comes from the households. The importance of the role of households in the expansion of national wealth could be the reason why a major part of what digital divide measures is telecommunications services' access/non-access by households' members as they would have to communicate in the course of daily social and microeconomic activities (Organization for Economic Cooperation and Development, 2004). This statement emphasizes the significance of households in determining telecommunications-services satisfaction.

But, prior research in this area in Nigeria has not uniquely focused on the perceptions of households' members as regards contemporary telecommunications services being offered to them by providers, especially how satisfied they are with these services. The paper is organized as follows. The following section provides the literature review of the study. Next, materials and methods are explained. After that, results are presented and subsequently followed by discussion. Finally, conclusions are discussed.

Literature Review

Household communication shows an established connection and a network impact among people - it is non-dependent on geographical space, and telecommunications services help to reinforce this relationship (Mwin&Kritzinger, 2016; Poranki et al., 2015; Srinuan&Bohlin, 2011). It is through communication that the needs, wants and concerns of households' members are articulated (Peterson & Green, 2009) and telecommunications services serve as channels to solving these aforementioned challenges (Elegbeleye, 2005).Telecommunications services can only be used in satisfying household communication needs if they are available(as provided by the providers) and suitably utilized by households' members

(Runcan et al., 2012).There has been telecommunications services expansion in Africa and this is attributed to the reduction in the prices of equipment and devices (Gillwald et al., 2018). For instance, GSMA Intelligence (2018) observed that the mobile phone is estimated to have contributed about seven percent to the GDP of sub-Saharan Africa countries. Besides, the World Bank Group (2019, p. vii) reported that "Nigeria has the largest mobile market in sub-Saharan Africa, supported by strong mobile broadband infrastructure and improved international connectivity". Are these statistics showing acceptable satisfaction level from the perspective of households' members as users? According to Folitse et al. (2019), despite ICT and specifically mobile phones bringing about progressive elements if satisfactorily utilized, Srinuan and Bohlin (2011) emphasized that their disproportionate spread within or between households can cause a lopsided impact on their economic development and social experiences. This is reflected in the diverse ways that households use telecommunications services to satisfy their communication needs (Lun& Lyons, 2018).

In relation to the means of dedicated household telephony demand in Nigeria, the mobile has noticeably replaced fixed telephones (Odufuwa, 2012). This is also corroborated by a recent report in which the World Bank Group (2019: 1) stated that, "in spite of recent growth in fiber installations in Nigeria …fixed broadband penetration in Nigeria is very low, with a household penetration rate of 0.04% at the end of 2018, below the African regional average (0.6%), and well below the world average (13.6%)". Not surprising, just as Odufuwa (2012)'s previous claim, the World Bank Group (2019) further acknowledges that mobile systems are the main channel for conveying data traffic in Nigeria. However, Odufuwa (2012)'s demand-side analysis of Nigeria's ICT sector demonstrated that the majority of households in Nigeria are continually excluded from the full range of telecommunications services despite the positive transformation of the telecommunications sector since 2001. Similarly, Gillwald et al. (2018)'s study on mobile technology demand-side showed that households' access to telecommunications services remains low in Nigeria. In the same fashion, the latest telecommunications report of the National Bureau of Statistics [NBS] (2017), which is majorly on mobile technology, reveals a 6.67% (143,064,490 active voices) drop in subscribers' base in Nigeria in the second quarters of 2017 against 153,295,652 active voices in third quarters of 2016. The report also indicates that Lagos State (a major technology hub) with the highest number of active voice subscribers faces a 6.55% drop in subscribers' base. These mobile subscribers' declining data in Nigeria perhaps point to subscribers not fully enjoying existing telecommunications services, implying diminishing satisfaction, hence the shrinking active voice subscribers.

Certain indicators, which are basically regulated by telecommunications providers, have been found to have effect on satisfaction of subscribers utilizing mobile communication services – they are: billing system, network (service) quality, and customer care service (Adjaino, 2017). From subscribers' viewpoints -Opele et al. (2018) underline that factors such as responsiveness, network reliability and service assurance are most significant to subscribers in preferring a provider while Ani and Ogbuabor (2015) and Bakare et al. (2017) highlight the factor of closeness of base stations/offices of providers to subscribers' homes as a leading factor that determines service quality and ultimately defining subscriber's choice of a provider. Abdul et al. (2014) and Ugbomhe et al. (2018) in their study of some of mobile providers' performance indicators noted that positive relationship exists between satisfaction vis-à-vis service quality and customer care service. On the rating of providers in Nigeria,

Adjaino (2017) in his study, rated MTN best in terms of network quality and Glo ranked the best for billing system and customer care service. Comparably, Opele et al. (2018) revealed that the majority of customers, though students of tertiary institutions preferred MTN to other providers and this was attributed to the factors of reasonable service assurance, service reliability, and service responsiveness – these factors were also found to have significant positive relationship with students' satisfaction. As well, NBS (2017) telecommunications report confirmed that MTN has the highest share of active voice subscribers among the four main mobile providers. However, the report showed that the number of subscribers porting from MTN to other providers is more than subscribers porting from other providers to MTN. These statistics simply imply that factors such as customer care service, network quality, promotion, billing plan, network coverage, among others, play an important role in subscribers' satisfaction and will eventually affect their choices (Nwakanma et al., 2018; Ononiwu et al., 2016).

Adebisi (2011)'s survey of six states in Nigeria including Lagos revealed the high dissatisfaction of mobile communications subscribers with various services of providers - close to two-third laid claim to a high level of dissatisfaction with providers' services. Oppositely, in a more recent study, Adjaino (2017) noted that more than half of the surveyed subscribers were to an extent satisfied with mobile communications providers' services due to the provision of fair network quality, billing system and customer care service. In spite of the dissatisfaction uncovered in Adebisi (2011)'s survey, the respondents believed that mobile communications revolution has given different segments of the population access to telephone in contrast to pre-2001 characterized by relatively expensive and inefficient fixed telephone provision. In addition, Adebisi (2011) remarked that the growth in mobile communications gains in Nigeria has not been translated into adequate subscribers' benefits and satisfaction. Most likely, this is not unconnected with Abdul et al. (2014) emphasizing that providers should develop strategies that better capture customers' perceptions of offered telecommunications services.

Concerning socio-demographic factors: Olatokun and Nwone (2013) observed that there was no significant relationship between gender and service quality – with a positive relationship existing between satisfaction and service quality of mobile communications services (Abdul et al., 2014; Ugbomhe et al., 2018), it can be implied that there was no significant relationship between gender and satisfaction with mobile communications services; Abdul-aziz et al. (2014) also stated that there was no statistically significance between the variables (gender and age) and overall satisfaction with services provided by mobile operators; Akinleke (2018) uncovered a significant difference between the variables (perceived usefulness and perceived ease of use) and the socio-demographic factors (age and gender) - though, Akinleke's study focused on rural area dwellers, but the rural area dwellers had fair access to mobile communications services. Therefore, he confirmed that age and gender affected these indicators of respondents' satisfaction with mobile communications services; and Micah and Alabi (2016) reported that there was a significant association between respondents' age and their perception of quality of mobile communications services (which is comparable to satisfaction). Knoche and Huang (2012), in a survey of illiterate immigrants of African and Latin American origins found out that illiteracy may not be such a hindrance to using mobile technology because the participants in their study were able to navigate through menus without difficulty and they possessed coping strategies. Consequently, these traits might go a

long way to make the illiterates derive equal satisfaction just as the literates as regards mobile technology usage. Sillice et al. (2018)'s survey, although, on the differences in mobile phone affinity between demographic groups observed that women used their mobile phones as a source of connecting to family and friends more than men. Furthermore, the survey showed that women used the mobile device continuously throughout the day than men. Inferentially, these data indicated that women (regarding their position in the family as mothers) were more likely to derive satisfaction from mobile communications services than men.

Much less is known about studies that focused on perceptions of households' members as regards contemporary telecommunications services offered to them by providers in Nigeria. Several existing studies as mentioned earlier relied on particularly restricted datasets - from statistical or consulting reports, for instance, World Bank Group (2019) and NBS (2017). Moreover, efforts to determine the satisfaction of subscribers with telecommunications services (in a selected segments of the population) such as mobile phone users in a metropolis (Olatokun&Nwone, 2013) or mobile technology users in rural areas (Akinleke, 2018), may not provide tangible insights on the telecommunications services that households' members employ as they communicate often considering their diverse activities. Therefore, the purpose of the study was to investigate the perceptions of households' members on the contemporary telecommunications services offered by providers in Alimosho Local Government Area of Lagos, Nigeria. The study aimed to answer the following research questions:

i. What are the main telecommunications services used in meeting household communication needs?
ii. What opinions do households' members have as regards mobile communications technology and mobile communications services' providers?
iii. Is there a difference in the level of satisfaction derived from telecommunications services in relation to selected socio-demographic factors?

Materials and Methods

Primary data was used for this research work. Primary data was collected through the use of a structured questionnaire (see Appendix A) administered on the metropolitan households in order to determine their socio economic characteristics, such as gender, age, position in the family, educational level and work status. The questionnaire was pre-tested in each of the six LCDAs. In all, 24 copies of questionnaire were distributed during pre-testing, and minor challenges identified during the pretesting were reviewed. Four trained research assistants helped in the administration and collection of the copies of the questionnaire.

According to the latest and official 2006 census by the Federal Government of Nigeria, Alimosho Local Government Area (ALGA) is the largest local government area in Lagos State Nigeria with 1,288,714 inhabitants. Contrarily, in relation to ALGA's population, a figure of 2,047,026 (1,099,656 males and 947,370 females) was presented by the Lagos State Government in her own census done alongside that of the national census in 2006 but it was still considered the largest in the state (Lagos State Government, 2016). The Lagos State Government also gave a projected population of ALGA to be 2,804,919 by the year 2018 (Lagos State Government, 2016). ALGA is subdivided into Local Community Development Areas (LCDAs) by the Lagos State Government in order to make grassroots government more meaningful and accessible for efficient delivery of dividends of democracy. The LCDAs are

Agbado/Okeodo,Ayobo/Ipaja, Alimosho, Egbe/Idimu, Ikotun/Igando, and Mosan Okunola. The study covered all the six LCDAs in order to ensure that the study reflected the opinions across the length and breadth ofthis local government. More importantly, no previous study on the perceptions of households' members on contemporary telecommunications services had been conducted in this local government.

In this study, a multistage sampling technique was used to draw the sample. The justification for using this technique was that; it was suitable for drawing a study sample when the population is large and scattered over a broad geographical area, no adequate list of respondents (sampling frame), and constraint in time and fund. First-stage sampling included a simple random sample to select two streets from each LCDA. It was ensured that the selected streets had nothing less than fifty functional houses where people lived. This added up to 12 streets from all the LCDAs. The second stage of sampling selected 30 households' members from different houses in each street of the two streets selected for each LCDA. This makes sixty households' members from each LCDA, who were then, administered the copies of the questionnaire. This totalled 360 questionnaires (360 households' members) from the six LCDAs. At the start of the survey, the researcher and the trained research assistants determined the household composition and selected the respondent from among all those aged 15 or more. In households with more than one adult, one person was selected at random. From those 360 households' members, 331 were reached and eight out of the 331 returned questionnaires were invalid because they were not fully answered and so were excluded. Therefore, 323 households' members were finally analysed representing 89.7% of the 360 households.

Statistical Package for the Social Sciences (SPSS) version 15 was used for each sample and responses entered. To answer the research questions, the following methods of analysis were undertaken with each sample:

- frequency counts and percentage for the listed categories in the questionnaire;
- an independent-samples t-test to compare the mean score, for the variable (gender) since it has two different groups of subjects;
- the one-way between-groups analysis of variance (ANOVA) to determine whether there are any significant differences in the mean scores on the dependent variable (satisfaction of mobile communications services) across the groups of independent variables (age, gender, respondent's position and education).

Results

Socio-demographic information of respondents

The socio-demographic information of respondents was identified in terms of gender, age, position in the family, educational level and work status. Table 1 presents the socio-demographic information of respondents.

Higher than half (57.9%) of the respondents were males and more than one-third (42.1%) were females. Slightly more than half (50.8%) of the respondents were aged between 31 and 40 years. Close to half (49.5%) of the respondents were fathers and over a quarter (29.1%) of the respondents were mothers. Close to two-third (63.5%) of the respondents had tertiary education. Slightly more than two-third (68.4%) of the respondents were into paid employment whereas close to one-fifth (16.4%) of the respondents were self-employed. The largest percentage of the survey respondents in the six LCDAs (18.3%) was taken from

Alimosho LCDA. Even though, percentages of the respondents from other five LCDAs were close to Alimosho LCDA's percentage (Table 1).

Table 1. Socio-demographic information of the respondents

Item & Classification	Frequency	%
Gender		
Male	187	57.9
Female	136	42.1
Age		
15-30	91	28.2
31-40	164	50.8
41-50	34	10.5
51-60	26	8.0
61 +	8	2.5
Respondent's position in the household		
Father	160	49.5
Mother	94	29.1
First child	64	19.8
Others	5	1.5
Education		
Non formal	24	7.4
Primary	10	3.1
Secondary	78	24.1
Tertiary	205	63.5
Others	6	1.9
Work status		
Paid employment	221	68.4
Self-employed	53	16.4
Unemployed	31	9.6
Retired	9	2.8
Others	9	2.8

Source: Field data 2019

Note: Total number of respondents=323

Main telecommunications services used in meeting household communication needs

Table 2 presents the main telecommunications services used in meeting household communication needs. Five main telecommunications services were rated by the respondents based on how they judged them useful for household communication. More than two-third (80.2%) of the respondents indicated that the mobile voice was the foremost telecommunications service. The least was multimedia service (MMS) indicated by 5 (1.5%) of the respondents. However, further questioning showed that over two-third (79.9%) of the respondents indicated that they could not communicate effectively using the main telecommunications services all the year round (24 hours/year).

Table 2. Main telecommunications services used in meeting household communication needs

Sources	Frequency	%
Mobile voice	259	80.2
Call center	23	7.1
Internet services on mobile phone	8	2.5
SMS	28	8.7
MMS	5	1.5
Total	323	100.0

Opinions of households' members as regards mobile communications technology and mobile services providers

Overall, more than three-quarter (85.1%) of the respondents believed that mobile communications technology can serve them satisfactorily while just over one-tenth (14.9%) indicated otherwise (Figure 1). In view of this, the impact of mobile communications technology on households' members' communication was determined. This is presented in Table 3. From Table 3, the majority (90.7%) of the respondents indicated positive impact.

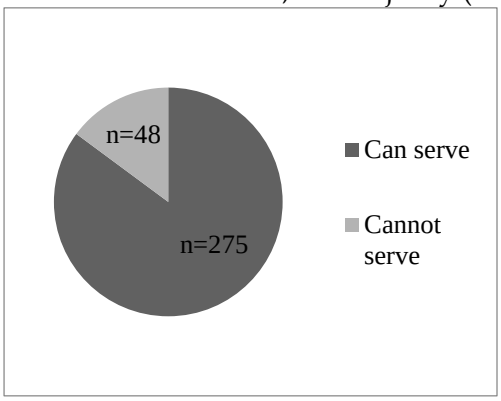


Figure 1. Mobile communications technology serving satisfactorily

Table 3. Impact of mobile communications technology on households' members' communication

Impact	Frequency	%
Positive	293	90.7
Negative	13	4.0
No impact	17	5.3
Total	323	100.0

The researcher further examined to know the mobile communications services' provider that was most preferred by the respondents. More than one-quarter of the respondents (28.5%) preferred MTN (the most preferred) and the least preferred were nTEL and others. Table 4 presents the details on the preference for mobile communications services' provider. The respondents were also asked to state the reasons why they preferred the indicated mobile communications services' provider. The most stated reason was the reliability of the provider's services. This reason was indicated by close to one-third (39.0%) of the

respondents. Table 5 presents detailed analysis of the reasons for choosing the preferred mobile communications services' provider.

Table 4. Preference of mobile communications services' providers

Mobile communications services providers	Frequency	%
nTEL	5	1.5
MTN	92	28.5
Glo	71	22.0
Airtel	82	25.4
9Mobile	68	21.1
Others	5	1.5
Total	323	100.0

Table 5. Reasons for preferring mobile communications services' provider

Reasons	Frequency	%
Low charges	75	23.2
Reliability	126	39.0
Nearness	102	31.6
Others	20	6.2
Total	323	100.0

Table 6 presents the analysis of respondents' major challenges with mobile communications services' providers. The respondents indicated major challenges that they had with mobile communications services' providers that informed their views on satisfaction as they try to communicate with their households' members. The most cited major challenge was inadequate coverage. This was indicated by close to half (48.3%) of the respondents.

Table 6. Major challenges with mobile communications services' providers

Experiences	Frequency	%
Lack of awareness of customers' needs	47	14.6
Poor customer relations	119	36.8
Inadequate coverage	156	48.3
Others	1	3
Total	323	100.0

Selected socio-demographic factors in relation to the level of satisfaction derived from telecommunications services

Since all the telecommunications services used by households' members are based on mobile communications technology, the study sought to know the satisfaction that the respondents derive from these services. A preliminary look at Table 7 shows how satisfied respondents were adopting the mobile voice and other telecommunication services for communication on a four-point Likert scale. Answers were ticked from choices among never, seldom, sometimes and always. One hundred and forty five (44.9%) of the respondents ticked 'sometimes' and this was rated the highest choice. Table 7 shows that slightly above one-quarter (25.4%) of the respondents were satisfied with the telecommunications services used for communication by

households' members. Further inquiry was made in understanding the respondents' socio-demographic profile in relation to the satisfaction derived from these telecommunications services seeing that over two-third of the respondents used the mobile voice while others used the remaining listed services (Table 2). The selected socio-demographic factors were gender, age, respondent's position and education.

Table 7. Satisfaction derived from telecommunications services

Measure	Frequency	%
Never	45	13.9
Seldom	51	15.8
Sometimes	145	44.9
Always	82	25.4
Total	323	
100.0		

Tables 8and 9 present the results for independent-samples t-test for comparing gender and satisfaction derived from telecommunications services. This test compares the satisfaction scores for males and females. There was no significant difference in scores for males (M = 1.74, SD = 0.44) and females, M = 1.69, SD = .46; t (321) = .07, p = .36 (p > .05).

Table 8. T-Test - Group Statistics (for comparing gender and satisfaction derived from telecommunications services)

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Level of Satisfaction	Male	187	**1.7380**	**.44092**	.03224
	Female	136	**1.6912**	**.46372**	.03976

Table 9. Independent samples test for comparing gender and satisfaction derived from telecommunications services (abridged)

		Level of Satisfaction	
		Equal variances assumed	Equal variances not assumed
Levene's Test for Equality of Variances	F	3.278	
	Sig.	**.071**	
t-test for Equality of Means	t	.921	**321**
	df	.914	282.310
	Sig. (2-tailed)	.358	**.361**

One-way ANOVA was used in comparing the dependent variable (satisfaction derived from telecommunications services) with independent socio-demographic profile (age, respondent's position and education). As seen in Table 10 from the overall significant difference results of

the one-way ANOVA, there was statistically significant difference between respondent's position and satisfaction ($p = 0.010$; ($p < .05$),and education and satisfaction ($p = 0.023$; ($p < .05$).

However, there was no statistically significant difference between age and satisfaction with the overall significant difference being .116 ($p > .05$). Post-hoc comparisons using the Tukey HSD test indicated that: there was a statistically significant difference between mother ($p = 0.016$; ($p < .05$) and others ($p = 0.016$; ($p < .05$) compared to satisfaction; and there was a statistically significant difference between respondents with secondary school education ($p = 0.041$; ($p < .05$) and others ($p = 0.041$; ($p < .05$) compared to satisfaction.

Table 10. One-way ANOVA (abridged) of respondents' satisfaction with telecommunications services compared with socio-demographic profile (age, position and education) through Mean, SE, SD& Significant Difference

Socio-demographic profile	Mean	SD	SE	Overall Significant Difference
Age				
15-30	1.73	.45	.05	**.116**
31-40	1.71	.45	.04	
41-50	1.59	.50	.06	
51-61+	1.85	.36	.03	
Respondent's position				
Father	1.70	.46	.04	**.010**
Mother	1.81	.40	.04	
First child	1.67	.47	.06	
Others	1.20	.45	.20	
Education				
Non-formal	1.75	.44	.09	**.023**
Primary	1.60	.52	.16	
Secondary	1.83	.38	.04	
Tertiary	1.69	.46	.03	
Others	1.33	.52	.21	

Discussion

Out of the five telecommunications services that are at the disposal of households' members as they communicate with each other every day, the mobile voice was the foremost used by the 80.2% for meeting household communication needs (Table 2). Moreover, 85.1% cite that mobile communications technology can serve them satisfactorily (Figure 1) and 90.7% indicated positive impact of mobile communications technology on households' communication (Table 3).

The findings of the current study substantiate previous findings such as: Odufuwa (2012),which stated that fixed telephone has been substituted by the mobile as regards dedicated household telephony demand; the World Bank Group (2019), which reported that mobile systems are the main channel for conveying data traffic; Adjaino (2017), which affirmed that surveyed respondents are satisfied with mobile communications technology; and Adebisi (2011),which highlighted the transformation that mobile communications

technology has brought to the telecommunications industry allowing different classes of people to have telephone access. Notwithstanding the study findings pointing to the positive contribution of mobile communications' services to households' communication, 79.9% of the respondents not being able to communicate all the year round using telecommunications services shows inconsistency. Though this contradiction is consistent with: Gillwald et al. (2018) and Odufuwa (2012) who observed that household access and usage of telecommunications services are low considering the demand for these services; and NBS (2017) that pinpointed the drop in subscribers' base in Nigeria, it however indicates lapses in telecommunications services' delivery. The substitution of fixed telephone with mobile communications technology, and the mention of its inadequacy will apparently limit the positive contribution of mobile telecommunication services to household communication.

MTN is the most preferred telecommunications services' provider by more than one-quarter of the respondents (which constitutes the majority). The proportion of the respondents preferring MTN in the study appears small compared to studies like Adjaino (2017), NBS (2017) and Opele et al. (2018). This could be as a result of the research method, population being studied and geographical location. However, this study still agrees with the studies of Adjaino (2017), NBS (2017) and Opele et al. (2018) where MTN subscribers had the highest portion among the four main providers. Given that this study is based on a limited number of respondents, the result on the most preferred provider should be treated with considerable caution. For example, in Table 5, the respondents specified the different reasons why they preferred providers and those reasons could make different respondents to switch providers at different times based on telecommunications services' reliability per time. To give credence to this assertion, NBS (2017) demonstrated that more subscribers from MTN ported to other providers compared to the way subscribers from other providers ported to MTN. The number of respondents in this local government area that may possibly port to other providers could be responsible for any variation at any period and it would affect this study's result. This statement calls for periodic survey by researchers and executives in order to have timely telecommunications facts they can act upon for performance evaluation and improvement. In terms of reasons for preferring providers, the majority (32.5%) of the respondents choose reliability. This result supports Opele et al. (2018) who highlighted that the factors of responsiveness, reliability and assurance of the provided telecommunications services are considered as most influential in determining providers' preference. It should be noted that responsiveness and assurance of telecommunications services are also dependent on service reliability. Nearness of provider's base station/office and low charges are the second and third reasons indicated by the respondents for preferring a provider. These results are consistent with Ani and Ogbuabor (2015) and Bakare et al. (2017) who reported that subscribers look out for provider's base station/office that is close to their place of abode and the provider offering low tariff (pointing to affordability). These factors could give households' members an assurance of network presence and service quality as well as a reasonable purchasing power (when little tariff is charged for telecommunications services).

The major experience that informs the opinions of the households' members on satisfaction with mobile communications services' providers is inadequate coverage. Inadequate coverage is followed by poor customer relations and lack of awareness of customers' needs. The problem of inadequate coverage being rated first might be connected to mobility of many of the households' members. Many of the households' members who are wage earners or self-

employed may well have cause to work in places with little or no network coverage. These mobile households' members might be unable to communicate with their households' members when they are out of coverage areas. Former studies corroborating the study's finding on major experiences include: Adjaino (2017), who emphasized on network quality as playing a key role in subscribers' satisfaction; Nwakanma et al. (2018),who revealed that some of the major factors that influence subscribers' decision to port to other providers are service quality, network coverage, and customer care service; Ononiwu et al. (2016), who pointed to the factors of network quality, customer care service, promotion, and network coverage as playing an important role in subscribers' satisfaction; and Abdul et al. (2014),who stressed that providers should develop strategies that better capture customers' perceptions of their provided telecommunications services if they need to genuinely determine their success as regards service provision to users. Furthermore, households' members that reiterate the factors revolving around them as customers in the second and third choices for major experiences underline the factor's significance. These complaints on poor customer service and relations should awaken the regulatory systems, specifically the Federal Competition and Consumer Protection Council (FCCPC); so that households' members can be reassured of their commitment to excellent telecommunications services' provision.

The preliminary result on satisfaction (Table 7) shows that 25.4% of the respondents are always satisfied and 44.9% (the majority) are sometimes satisfied with household communication based on the provided telecommunications services. However, above three-quarter (the majority) of the respondents indicate that mobile communications technology can serve them satisfactorily (Figure 1). This contradiction suggests that certain satisfaction-determining factors could be responsible for variation in the satisfaction of households' members. Therefore, the study adopts parametric estimation techniques to understand selected socio-demographic factors (gender, age, respondent's position and education) in relation to the satisfaction derived from mobile communications technology since the mobile voice and other telecommunications services are seen as decisive the main services used by the households' members. Based on the adopted parametric estimation techniques, the study shows that there is no significant relationship between gender and their satisfaction with mobile communication services. This finding lends support to Abdul-aziz et al. (2014) and Olatokun and Nwone (2013), who showed that there is no significant relationship between respondents' gender and their satisfaction with providers' services. However, this study contradicts Akinleke (2018), who demonstrated that respondents' gender affects their satisfaction regarding mobile communication services. This study also shows that there is no significant relationship between respondents' age and their satisfaction with mobile communication services. This finding supports Abdul-aziz et al. (2014), who showed that there is no significant relationship between age and overall satisfaction with services provided by providers. However, the current study significantly differs from Akinleke (2018) and Micah and Alabi (2016). It shows that age affects satisfaction in respect of mobile communication services. Interestingly, post-hoc comparison result of this study agrees with Micah and Alabi (2016), who indicated that respondents of secondary school age showed reasonable satisfaction with mobile communications services. This result is not unconnected to secondary school age respondents' inquisitiveness, which involves them asking their parents vital questions when they are not at home, including them seeking for education, entertainment and fulfillment via mobile technology. Therefore, mobile communications

technology providers should make special provision for especially in relation to reduction in call tariff and data allowance.

Further on parametric estimation techniques results, the study also shows that there is a significant relationship between respondents' education and their satisfaction with telecommunication services. This finding to an extent confirms Knoche and Huang (2012), who expounded that the possession of certain traits might make the uneducated to get similar satisfaction just as the educated with regard to mobile technology usage. However, the usage of SMS, MMS and Internet services on mobile phones as main telecommunications services by the households' members for communication (Table 2) is low when compared to how the majority of the respondents are favorably educated (Table 1). The low usage of these particularly IT-related telecommunications services might be attributed to low IT-skills of the respondents. Finally, the paper shows that there is a significant relationship between respondents' position and their satisfaction with mobile communications services. This result to an extent agrees with Sillice et al. (2018)'s conclusion on women being more likely to derive satisfaction from mobile communications services than men. This is particularly noticed in the post-hoc comparison result indicating a statistically significant difference existing between mother and satisfaction with mobile communications services. Mothers are likely to be pressed with households' activities than other households' members and in consequence use more of mobile communications services.

Conclusion

While the results of the paper help our understanding of the relationship among households' members' socio-demographic profile in relation to satisfaction of mobile communications services and also contributing to the growing literature of households' telecommunications' services usage in a developing country, the study has limitations that point to opportunities for future research. First, the survey could have benefited from a wider range of interviews of households' members but was limited by funds and time. Second, this survey did not ask questions relating to the purposes of communicating with other households' members, which makes it difficult to investigate the extent of usage of telecommunications services for distinctive households' activities. Furthermore, the non-significant difference of socio-demographic factors (gender and age) compared with satisfaction might be as a result of geographical location or statistical method of analysis. This implies that future studies by researchers should study larger samples of other local government areas while using similar statistical methods of analysis. This might uncover some hidden characteristics of the population that are not reflected in the results of the paper.

The main aim of the study was to determine the perceptions of households' members as regards contemporary telecommunications services being provided to them, especially on their satisfaction with these services. Considering the competitive environment in which providers operate, it is important for the executives to develop innovative strategies that will improve overall performance while meeting the expectations of households' members as regards study's finding on the relationship between socio-demographic profile and satisfaction of mobile communications services. These innovative strategies should include promotions that are aimed at reducing charges in order to encourage the households' members to use SMS, MMS and Internet services for communication. Mobile communications services' providers should intensify effort on customer consciousness by improving on their

customer-care service in order to understand household communication needs. This can be done through short online surveys and phone calls. There should also be improvement in the provision of reliable and qualitative mobile communications services. Furthermore, the study has an implication for mobile phones and apps designers in that they should design user-friendly devices and apps that will take care of households' members with different educational levels and IT-skills.

Further, for the policy makers, they should: (a) consciously legislate for the provision of telecommunications infrastructure and the improvement of existing ones in order to provide acceptable network connection (b) work towards the provision of an enabling environment for substantial improvement in fixed line telephone services so that it can compete favorably with mobile communications services, and (c) provide guidelines towards improved funding of the telecommunications sector.

The study also underpins the position of national telecommunications regulatory bodies, for example, the Nigerian Communications Commission (NCC). The NCC in its commitment towards ensuring optimal user satisfaction should come up with guidelines that would specifically address the outcomes of the study especially with respect to the disagreement of mobile communications' positive impact vis-à-vis the majority of the respondents saying that they are not able to communicate all the year round using the main telecommunications services, and ensuring that households' members are satisfied based on the study's findings on contemporary mobile communications services in relation to socio-demographic profile.

Given the significance of telecommunications to involvement in the modern world economy, the results and conclusions of the paper should boost the commitment of providers, entrepreneurs and policy makers to invest more in telecommunications in developing/emerging economies. The outcomes of this paper will help create positive telecommunications impact and benefits. These benefits will include: reduction in telecommunications costs as households' members communicate; expansion in market boundaries; and great multiplication of information flow that will boost socio-economic development.

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