Nigerian Studies in Economics
and Management Sciences
ISSN: 2645-3061

2019
2(1): 52- 59

Effect of Mobile Number Portability on Service Quality in GSM Industry: Experience from Alimosho Local Government Area

OGUNLUSI, Gbenga[1]
IGHODALO, David, Ehizojie[2]
NGWAMA, Justice, Chidi[3]

Abstract

The study assessed the effect of mobile number portability (MNP) implementation on service quality in Global System of Communication industry with a view to improving mobile telephony services. The study was a survey design, using primary data. The data were collected through the administration of questionnaire in Alimosho, Local government. Area, Lagos State. One hundred and fifty questionnaire were distributed to the residents of Alimoso, having divided the study location to five regions. Thirty questionnaire (30) were distributed in each region totaled one hundred and fifty, using systematic sampling method. Simple percentage and simple linear regression were used to analysed the data. The result showed that mobile number portability has a positive relationship with service quality. It also revealed that MNP have a significance positive impact on service quality in mobile telephony services. The study concluded that MNP is a veritable instrument that can induce improved services quality in Global System of Mobile Communication services.

***Keywords* – (3-5 words):** *Implementation, mobile number portability, service quality, customer, telephony*

Gbenga Ogunlusi, *Department of Administration and Management, Crawford University, Faith City, Igbesa, Ogun State*
David Ehizojie Ighodalo, *Department of Administration and Management, Crawford University, Faith City, Igbesa, Ogun State*
Justice Chidi Ngwama, *Department of Administration and Management, Crawford University, Faith City, Igbesa, Ogun State*
Corresponding author: *e-mail* :ogunlusig@yahoo.com
Mobile: +234-7033858050

INTRODUCTION

Mobile number portability (MNP) was introduced in Nigeria on April 22nd, 2013. It is a revolutionary measure in the telecommunication firms that is expected to stimulate competition and improve the services in the industry. Adoption of MNP has been on the increase since its introduction in Singapore. Unlike the old regime, whereby a customer unwillingly remains with a service provider because of the switching costs, MNP gives ample opportunity to the mobile phone users to choose a preferred network without losing their identity and at no cost (Sutherland, 2007).

In the absence of MNP, phone users will have to give up their numbers and get a new one. In this regards, customers has a lot of burden to bear in term of retrieving the lost contacts and much more, the cost of producing new complimentary cards, or pains of losing the contacts. MNP forecloses this by allowing consumers to retain their numbers having changed the service provider. The fact that MNP offers phone users plethora of choices to switch a poor operator is expected to stimulate healthy competition among the service providers in the GSM industry so as to raise the of service quality in telephony system, and in a way to earn the trust of phone users.

Service quality is one of the major benefits of MNP as noted in the literature (Motiwani, 2016; Boafo, 2015, Kokuma &Arthur, 2015, Otoo, 2015) and as one of the reasons for its introduction. For instance, MNP reduces call prices, offers greater choice and higher quality, and competitive opportunity to the new entrants to the market (Khan, 2010). Conceived this way, MNP can serve as a tool to stimulate a healthy competitive market. Notwithstanding, MNP may affect the welfare effects on phone users (Ovum, 2000). This is because it is capable of making calls difficult to be identified by phone users since the first three numbers does not automatically identify with any particular network provider. Thus, phone users may not be aware of the price charges if calling prices is different between operators. This is however, far less than its benefits as noted earlier.

The rational for introducing MNP is to stimulate competition and improve the service quality in the sector, (NCC, 2013). Service quality simply refers to an assessment of how well a delivered services conforms to the client's expectations. In other words, it is a function of customer expectation and has a far reaching effect on customer's perceived value of the actual service. In a sense, it is a subjective comparison between the perceived quality of a service and the actual service received. Since every consumer assumed to be rational, the service quality of GSM providers cannot be underestimated by the phone users. One of the principal benefits of MNP as stated by the NCC is that MNP would stimulate competition in the industry and thereby improves mobile telephone services delivery in Nigeria. However, five years into the adoption of MNP, for ease of communication, most phone users are still carrying dual-sim handsets with two active networks, culminating a flourishing market for dual-sim phones (Tiamiyu & Mejabi, 2012) and a few feasibly seen carrying more than one phones. To this end, this study attempted to investigate the effect of implementation of MNP on service quality of GSM services. To advance the course of the study, a null hypothesis: MNP does not have a significant impact on service quality of GSM services, was postulated and tested.

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

Mobile number portability began in Asian country in 1997 when it was introduced in Singapore. Two years later, Hong kong adopted it, followed by the UK and Netherland. It later spread across Europe and America. South Africa was the first country to adopt it in 2006 on the continent of Africa followed by Egypt, a year later. Today more countries have adopted the scheme in Africa. Nigeria lunched it on 22nd April 2013.

Generally speaking, MNP is of three types namely; (i). local number portability this form requires phone users to migrate between two different local services areas of the same carrier without changing their mobile numbers, (2), cross carrier MNP type which allows subscribers to

migrate their mobile number to network provider in the same local area, usually the same city that offer better service, (3), Hybrid portability; this type involves bpoth local area and cross-carrier. Thus, both are changed simultaneously.

In MNP regime, porting is at no cost. This is commendable and removes the challenges of higher costs relative to owning multiple SIM cards. At full implementation, the MNP scheme is expected to enable users to migrate seamlessly from one network provider to another. It should remove the current need to own and maintain more than one mobile line in the bid to avoid the challenges of interconnectivity hitches as customers are able to migrate within minutes as currently obtainable in Australia and per seconds in Singapore. It has been argued that the ensuing competition and bid to retain or attract customers would drive voice and data tariffs further downward as well as result in significant improvement in quality of service. It is also expected to drive further network expansion as Telecoms expand coverage to cover rural areas in a bid to boost market share. This is of particular importance for the new entrants in the industry. The biggest impact would perhaps be felt in the area of QOS because consistent network hitches are likely to be more responsible for loss of customers than call charges. Hence, the development will likely lead to improvement in customers service in terms of conflict resolution and quality of relationships.

Mobile Number Portability is a means to an end. Existing literature has revealed that MNP accrue some benefits to the stakeholders in the sector. It allows mobile subscribers retain their existing mobile phone number when the subscriber switches from one access services provider (Operator) to another irrespective of mobile technology. According to the NCC's Regulatory document on MNP, Business Rule and Porting Processes (BRPP), Nigeria is adopting the direct routing method. This method relies on the operation of a central database (CDB) or central clearing house and is appropriate for countries with multiple Telecoms. The porting process is expected to commence with the user requesting for port through the potential recipient telecom firm. The recipient company is responsible for verifying the authenticity of the request including eligibility. The recipient Telecoms then processes a Porting Approval Request (PAR) message to the central order handling system (COHS). The customer is expected to be fully ported on the new network in two days for prepaid and post-paid single order lines and in five days for post-paid multiple order lines. At the point of porting, the customer is expected to swap his/her current subscriber identification module (SIM) with that of the recipient Telco. The mailbox number for voice fax cannot be transferred; in addition, the mailbox number for voice fax cannot be ported.

With the steady growth rates in the numbers of GSM subscribers since 2001 and an estimated market base of over 149 million (NCC, 2017), Nigeria has become the largest market on the conferment of Africa and a force to reckon with globally. Since its inception in Nigeria, GSM has contributed noticeable to the economy. Apart from easy of communication, it has also served as a means of income to many Nigerians, it equally contributes to the GDP. For instance, NBS (2017) reported that GSM sector contributed 9.1% to the GDP. No doubt, many countries have to see into porting as a way of stabilizing the market place in GSM industry. Nigeria embraced porting technology in April 2013. The regulatory agency advanced many reasons for the implementation of the programme. These benefits are bye product of implementation of MNP to the stakeholders in the market place. They include;

Benefits to the consumer

MNP saves subscribers from huge cost in term of changing mobile number without changing or losing a mobile line means losing a contact. This is like cutting off a cycle friends, family and acquaintances. It is more impactful if the mobile line is a business number. The presence of MNP has eliminate this cost.

Benefit to the Operators

Mobile phone service providers have used the presence of MNP as an opportunity to gain market share. As with many markets where a barrier to competition is lifted, some of the free

market agents will lose. For instance, the operators who took a proactive stance in preparing for MNP would be able to increase net addition in the face of increased competition.

Benefits to the Regulators

The infrastructure developed for MNP are versatile that they can be deployed to solve other problems. For example, in countries where directory number resources were being exhausted, MNP facilities can be used to allow numbering plan administration, to assign numbers in a more efficient manner.

Benefits to the Market

The introduction of MNP has improve competition of MNP has improve competition in the market place. The improved competition stem various price war which has prompted customer's loyalty, and improved customer service, reduced hold times, rolling–out of additional different services, improved network coverage and other customer – pleasing new functionality.

EFFECT OF ADOPTION OF MNP

Since the advent of MNP in 1997, management and telecommunication literature has recordedcommendable benefits to the stakeholders in the sector. For instance, Lee et al, (2006) reported that MNP offers greater choice to the mobile phone users, reduces prices and heralds broader services. Similarly, Khan (2010) reported that MNP was an effective tool to induce competitiveness in GSM market. This is because it allows new operators to enjoy competitive opportunity (viard, 2007). Boafo, Kokuma and Arthur (2015) examine the impact of MNP on service delivery in GSM in Ghana, using descriptive survey design and find that the introduction of MNP improved service quality. In a review study by Odii and Onuoha (2012), using survey technique, the duo observed that MNP is an Important aspect for healthy competitive framework in telecommunication services. Gbalumyam (2018) investigated institutional stakeholder perceptions on mobile number portability in Eastern Europe. The study employed qualitative methodology and findings revealed that for more than 20 years of implementation of MNP, it has been beneficial to all the relevant stakeholders. However, Otoo (2015) observed that MNP has zero correlation with service quality in Ghana and its implementation has not improved the GSM operators services. The study employed a survey methodology and concluded that MNP couldn't be considered success in the area. In Over all, stakeholders in the Industry.

Theories Explaining Adoption of MNP

Like any other breakthrough in telecommunication technology, MNP has been defended using different theoretical explanations to justify its adoption, that is, users acceptance behavior. Prominent among them is the theory of Reasoned Action (Fishbein & Azjen, 1975). This model stemmed from Social Psychology and it is cognitive manifestation of an individual's desire to take a decision. This theory advances that individuals belief system affect his or her attitudes which culminate intension and finally resulting to behavior. Theory of Reasoned Action is relevant here because people's perception about reality in term of what MNP is capable of can propell them to adopt it order to reap the perceived benefits. Closely related to the theory is the unified theory of acceptance and use of technology. This model was propounded by (Venkaresh, morris, Davis & Davis 2003). This model is an off shoot of. Theory of reasoned action and Technology acceptance. The unified theory of acceptance and use of technology pinpoints four cardinal attributes that influence the acceptance of a new technology like MNP. These attributes include, performance expectancy, efforts expectancy, social influence, and facilitating dictates the intention to use a technology and the actual use of MNP. The third theory closely related to the above theories is the theory of technology acceptance by Davis (1986). It is one of the popular models used to explain user acceptance behavior. It is an off – shoot of social psychology. Technology acceptance model posit that technological use is a function of external variable, which are, perceived usefulness and easy to use. These two variable will impact on individual attitude to use the product (MNP), the attitude then propel the behavioural intension to use the technology. One thing that is common to these three model is the fact that they are rooted in social psychology and these school of thoughts believed that

people do not just adopt a given technology without antecedents that propelled them to reason in a particular way by using the technology.

Service Quality

Service quality has aroused considerable interest in business world. It is a function of received expectation of service enjoyed by a consumer and the action experience of the service.

Service quality is a very complex concept because consumption and production of service offering is insparatable, that is, it generally occurs simultaneously. Intangibility of service offering makes it a unique differentiation in the market place and can service as a core competence for service firms. No wonder kandampully (2007) noted that service quality is the most competitive hedge that leaching service organization can deploy for effective marketing warfare. In the same context, Berry (!999), Berry and parasuraman (1991) and, Zeithami and Bitner (2000) had reported that success and survival of enterprise is dependent on the delivery of superior service quality. Service quality can be categorized into technical and functional quality. The technical aspect of service quality related tangible aspect of service delivered. In GSM firms, this may be customer care, service provider's technical ability in serving the mobile subscribers, and machines used in their service points. Functional quality deals with how the customer receives a service, a customer service officer who handles complains is a example of element of functional quantity in GSM firms.

Service Quality Gap

The difference (gap) between customer's expectations of a service and the received actual service delivery is the service quality gap. This gap is actually made up of several other gaps. This gap is the variance between expectations and management perceptions of consumer expectations. This is followed by three other gaps, 1,3.4, and 5. Gap 5 is the overall difference between expected service and received service. It is the sum total of the preceding four gaps. Another model used in measuring service quality in marketing literature is the five factor American model generally referred to as SERVQUAL, originally developed to measure customer satisfaction. Parasuraman and colleagues (1988) highlighted five service dimensions factors considered highly by customers when assessing the quality of service. These factors include, reliability, responsiveness, empathy, assurances, and tangibles. How well a service provider fare among these factors will go a long way to show the service quality

Materials and Methods

This study was carried out using four commonly mentioned attributes (outcomes or reasons for its implementation) and five service dimension factors of assessing the quality of service (parasuraman and colligue, 1988). This was achieved using questionnaire structured in scale one to five (Likert). The respondents in the study were residence of Alimosho Local Government Area of Lagos State. It is the largest local government area in the state. The sampling action was in two stage. The first stage involved segmenting based on Alimosho LG area into six regions. They LCDA. Include, Alimosho, Egbeda, Ikotun, Igando, Ipaja, and Aboru. Thirty (30) respondents were chosen from each of this subdivision using systematic random sampling totaled one hundred and eighty (180). The level of reliability of the instrument, was checked with cronbsch alpha

Table 1: Reliability Test

Construct	No of Items	Cronbach's Apha
Mobile Number Portability	4	0.67
Service Quality	5	0.72
Overall	9	0.78

Field survey, 2018

Table 1 shows reliability coefficient of the constructs using cronbach alpha. Both the two

Variables were reliable.

Table 2 shows the characteristics of the respondents. More than half (51.40%) of the sample were female while only 49.6% participated. In other word, there were more female mobile phone users among the respondents. The age distribution shows that the sample constituted a youth age (83.4% of the sample age less than 41) while only16.6% reported 41years above. The respondents were also well educated, 79.2% holds a minimum of OND or NCE, and 5% with professional qualification. Majority of the respondents (43.8%) used mtn, 23.6% subscribed to Glo mobile, 21.5% were Airtel customers and 9mobile has only 11.1% of the market share among the sample. The distribution of number of cell phone owned by the sample shows that 69.1% have more than one phone and 64.6% reported to have ported to another service provider

Table 4 Background Data of the Respondents

Characteristics	Percentage (%)
Gender	
Male	49.6
Female	51.4
Age (year)	
Under 20	6.3
21 -30	41.7
31 -40	35.4
41 -50	12.4
Over 50	4.2
Educational Level	
Not more than SSCE	9.0
OND/NCE	38.2
B.Sc/HND	37.5
M.Sc	3.5
Professional Qualification	5.0
Number of service Provider	
MTN	43.8
GLO	23.6
Airtel	21.5
9mobile	11.1
Number of cell phone	
One	31.9
Two	54.2
More than Three	9.7
Above Three	4.2
Switch to Another Line	
Yes	64.6
No	35.4

Source: Survey Data 2018

Results and Discussion

Effect of MNP on Service Quality

Simple liner regression was employed to examine the liner relationship between MNP and service quality and the possible effect of the former on the latter. The model is shows below:

$Y = \gamma + B_1X_1 + e$.....(1)

Where Y is the dependent variable (service quality) $\alpha_1$is the intercept, B_1 is the coefficient, of the independent variable putting the independent and dependent variable in the equation above,

Thus;

$SQ = \beta + \beta X_1 + e$

SQ = service quality

X_1= mobile number Portability

Simpleliner regression was earned out to examine the nature of linear relationship between MNP and service quality. Table 4 shows that $F(1, 142) = 21.07$, $P < 0.05$. This shows that the model is fit to Predict, the dependent variable and tit implies that MNP significantly impacts on service quality in GSM firm. About 13% of the variation in service quality after the adoption of MNP was accounted for by the introduction of mobile number portability. The result shows that MNP (β0.359, $P < 0.05$.) significantly impacted on service quality in GSM firms.

Table v: Regression Results

Predictor Variable	B	Standard Coefficient (B)	t –value	P- value
Constant	6.378	-	5.549	0.000
MNP	0.54	.359	4.591	0.000

E (1, 142) = 21.07

R = 0.359

R^2.129

Adj. R^2 =.123

Predictor MNP

This study corroborated Kumar & Ratnesh (2015) in their empirical investigation of contribution of mobile number portability in quality enhancement of mobile service in India where the duo reported that operators pride themselves on their high quality of customer service. The result of this work also supported Boafo, Kokuma & Arthur (2015) in Kumasi, Ghana, where it was found that introduction of MNP has raised the competition in the industry and improved the quality of service. On the contrary, Keelson and Odei (2014) observed negative relationship between MNP and service quality. Similarly, Otoo (2015) found zero correlation between MNP and service quality and that introduction of MNP has not improved service quality among tertiary institution in Cape Coast. These results is quite different from the finding of the present study.

CONCLUSION AND RECOMMENDATION

Based on the findings obtained from the analysis, adoption of MNP has positive linear relationship with service quality in the telecommunication firms. This is not surprising because presence of MNP with appropriate policies and regulations will enhance a healthy competition and mobile phone users have choice as to which operator to patronize. Besides, adoption of MNP is a worthwhile project for countries that are yearning for improved mobile phone services. This is because MNP benefits all the stakeholders, customers, operators, the market and the institutions. The result of this work showed that mobile number portability have a positive and significant impact on service quality in Alimosho Area in Lagos State. In other words, adoption of MNP can improve the reliability of mobile services as well as the extent of responsiveness and empathy to customers. At the same time, its implementation can raise the service assurance and the physical aspect of telecoms services. To this end, MNP is an important tool that can bring a radical positive change of telephony services in GSM industry.

References

Boafo, D.,N., Kokuma, A.D and Arthur, G. (2015). Impact of Mobile Number Portability on Service Delivery in the Mobile Telecommunication Industry in Ghana; Case study of Bharti Airtel Ghana Limited, Kumasi. Developing country studies, 5(6), P153-159.

Keelson, A., S. Odei, J., A.(2014). Relationship between mobile number portability and consumer choice of active multiple mobile phone numbers in Ghana. Global Journal of Business Research 8(4), 99-110.

Onuoha, C.,J, and Odili, N.,J. (2012). A Review of Number Portability in Global system for mobile. J. 5(3), 15-22.

Venkatish, V, Thong, L., Y., J. and Xu, X. (2013) Unified Theory of Acceptance and use of Technology: A synthesis and Road Ahead. Journal of the association for Information Systemn

Nwakanma. K, udunwa AI, Anyiam KE, Ukwunna Ed, Obasi EC, AND Babagha Sz (2014) Sutherland, E. (2007). Mobile number portability info. The Journal of Policy Regulation and Strategy for Telecommunications, g(4), 10-24.

Nigerian Communication Commission (2017). Active telecoms subscriber slip by 2.11% In April 2017.

Ghalumyan, A.2018). Institutional Stakeholder Perceptions on mobile number Portability Implementation in Georgia and Belarus. Open Science Journal 3(4)

Lee, J., Kim, Y., Lee, J Park, Y. (2006). Estimating the extent of Refential Competition in the Korean mobile telecommunications market: switching cost and number portability, international Journal of industrial organization, 24(1) ,107-124

Khan, F., A. (2010). Mobile number portability: challenges and solutions. Journal of Emerging Trends in Computing and Information Sciences,(2) special base.

Viard, V.,B,(2007). Do switching costs make market more or less competitive? The case of 800 numbers portability. The RAND Journal of Economics 38:146-163

Ovun (2000). Mobile numbering and number portability in Ireland. A Report to the ODTR, Ovum: London.