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MOBILE NUMBER PORTABILITY AND TELECOM SUBSCRIBERS IN NIGERIA: A CASE OF PANEL DATA ANALYSIS

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ABSTRACT

Mobile phone was touted as an innovative device in the twentieth century. With the advent of advanced technologies like GSM, CDMA, WLL and 3G technology and a growing number of service providers, the competition has increased considerably. Day by day, both the public players and the private players are putting in their resources and efforts to improve their services so as to give the maximum service delivery to their customers. The focal point of this study is to assess the consequence of Mobile Number Portability on total subscribers and also to fish out the operators that are better-off or worse-off as a result of the launch of MNP in Nigeria. On the basis of this, static panel data analysis was used among the four major operators (MTN, Airtel, Etisalat and Glo). Quarterly data were used from 2013 to 2014 and the study reveals that there exists an inverse relationship between MNP and subscribers of each operator. The study discovered the dominance of MTN and Glo ahead of other operators as a result of the launch of MNP. On this premise, it is highly recommendable that MNP should be encouraged by government and regulatory agencies so as to enhance the competitive framework among the operators in the industry.

JEL CLASSIFICATION & KEYWORDS

■ L96 ■ R13 ■ MOBILEPHONE ■ NUMBER PORTABILITY ■ STATISTICAL PANEL DATA ■ NIGERIA

INTRODUCTION

Mobile Number Portability (MNP) has been launched in many countries, starting with Singapore in 1997 (LoyaltySquare, 2013) followed by UK, Netherlands and Hong Kong in 1999. Since then the tally has increased to approximately 62 in 2013 (WikiMNP, 2013). International standards show an astronomical variation in MNP impact across the different markets ranging from 0.36% in Portugal to 14.76% in Hong Kong (LoyaltySquare, 2013). Traditionally, Nigerian consumers of mobile telecommunications services had to lose their telephone numbers and adopt new ones when switching from one mobile network provider to another. However, as the mobile telecom market in Nigeria continues to blossom, with about 121 million active phone lines as of September 2013 (NCC, 2013), the government is shifting its policy from "supply-side" incentives or service providers to "demand-side" measures that seek to focus on consumer interest and empowerment. This is evident in the launch on April 22, 2013 of Mobile Number Portability (MNP) by the Nigerian Telecommunication Commission (NCC, 2013).

About 4000 Nigerians switched networks within the next 48 hours following the launch of mobile number portability in the country, Premium Times (2013). It was also stated that MTN Nigeria lost the most subscribers within the first month of the launch of the service, when the company recorded 49% of all off –network switches. Etisalat Nigeria, however, recorded the biggest gain, attracting 44% of all subscribers, who opted to switch network within the period (Okonji, 2013). Additional reports made available by the NCC reviewed that 7164 consumers switched networks in May 2013, and the number dropped to 5759 in June 2013, (Okwuke, 2013). However, the extent to which these network switches have impacted on mobile telecom operators in Nigeria is the main thrust of this study.

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Literature Review

Researching into the issue of mobile number portability is relatively recent particularly in developing countries like Nigeria. For instance study by Katka (2004) on mobile number portability suggests that high porting charges, long-winded applications, lengthy porting times, and handset subsidies have suppressed porting on a large scale. The research cites the cases of Greece, UK and France where operators have engaged in these types of activities in order to curtail the competitive and switching effects of MNP. Taaffe (2004) explains that operators in France stipulate advance notification of three (3) months if customers wanted to break their contracts in order to join another network. The porting process in the Netherlands took up to five (5) weeks, resulting in a failure of MNP in the country (Horrocks, 2007a). The result is that it is easier for the operator from which the subscriber wants to migrate to win back their customers through special promotions and personalized packages when the porting period is unduly long. In Finland, operators imposed minimum contract periods which drove down porting rates from approximately 40% to 10% (Horrocks, 2007a). Singapore and Taiwan both had lengthy porting times of four (4) to seven (7) days, which led to poor porting rates and therefore the failure of MNP (Keynote Capitals, 2009). In the United States, the Telecommunications Act of 1996 required each Local Exchange Carrier (LEC) to provide number portability, defined as "the ability of users of telecommunications services to retain, at the same location, existing telecommunications numbers without impairment of quality, reliability, or convenience when switching from one telecommunications carrier to another" (FCC, 1996).

In Australia, the regulator played a significant role in educating subscribers about the service, and porting times were limited to just a few hours. But more often than not, the adoption of MNP has failed to achieve the anticipated high porting rates as in the case Ireland, Finland, Malta, UK, The Netherlands, Taiwan, Japan and Singapore (Iqbal, 2007).

The intuitive notion that number portability enhances competition due to reduced switching costs has formally been analyzed by Aoki and Small (1999), who examine the welfare effects of MNP for different levels of mobile penetration (or market saturation). They find that the overall welfare effect of MNP is ambiguous if the investment or set-up costs of implementing MNP are weighed against the benefits of more intense competition

between mobile operators. In related papers, Gans, King, & Woodbridge (2001) and Haucap (2003) have focused on the question of how to allocate the property rights in telephone numbers and the costs of implementing number portability.

Furthermore, (Sutherland, 2007) once consumers and businesses have access to cheap, timely and effective means to port, they are in a significantly stronger position to negotiate deals with their existing operator or with a rival, and hence, it is not that MNP causes customer to churn, rather it frees customers to express their latent dissatisfaction with the prices and the quality of their current providers (Ibid). In contrast to this position, Lyons (2006) uses an econometric analysis of international time-series and cross-section data to estimate the average effects of MNP and argues that MNP causes significant increase in churn rates. MNP also does benefit mobile network operators (MNOs) by providing the ideal opportunity to increase market share and, in particular, to target high ARPU subscribers. Hence, MNOs are better able to manage churn rates by offering customers deals that play to their brand strengths (KPMG, 2003). Notwithstanding the several benefits of MNP, the notable downsides include: an inability of customers to determine the particular network they are calling (Smura, 2004), inability to take advantage of on-net.

Methodology

In analyzing the effect of mobile number portability on total subscribers in Nigeria, the panel data analysis was adopted. This is because the study combined both time series and cross sectional data. The study utilizes secondary sources of data which were sourced from Nigerian Communications Commission (NCC). The monthly data collected for the periods of 2013 and 2014 were aggregated to quarterly data for the major operators in Nigeria such as MTN, Airtel, Etisalat, and Globacom. These data were analyzed using a panel regression estimation technique.

Empirical Estimation

Since MNP is a recent phenomenon in Nigeria, which was launched on April 22, 2013 by NCC, empirical studies were reviewed so as to know the loophole or area yet to be filled in the body of knowledge, it must be noted however that not much work has been done on this work, on this premise this study adopted the modified work of Tiamiyu & Mejabi (2012),"Evaluation of Subscribers' Attitude to Mobile Number Portability Implementation in Nigeria." As such, the following linear relationship is as specified;

$$SUB = f(PORT) \quad (1)$$

This is explicitly stated as;

$$SUB = \beta_0 + PORT\beta_{it} + \mu_{it} \quad (2)$$

SUB - This is the total level of subscribers for each network

PORT - This is the number of subscribers moving from one network to the other

d1- Reference Category (Airtel), d2- (MTN), d3 and d4 are Etisalat and GLO, respectively

d1 - d4: Dummy variables used in capturing the specific effect of MNP on each operator in the industry.

Results and Discussion

Preliminary Analysis of Regression Variables

The table below presents the descriptive statistics for the variables in the study based on panel data of the telecommunication companies in Nigeria (MTN, Airtel, Glo, and Etisalat) from 2013 to 2014.

Table 1: Preliminary Analysis

	SUB	PORT
Mean	30330717	7040.75
Median	24488375	4638.5
Maximum	57224316	22724
Minimum	15303697	1256
Std. Dev.	15866284	6526.468
Skewness	0.998012	1.440809
Kurtosis	2.243784	4.012803
Jarque-Bera	3.037315	6.219659
Probability	0.219006	0.044609
Sum	4.85E+08	112652
Sum Sq. Dev.	3.78E+15	6.39E+08
Observations	16	16

Source: Authors

The descriptive statistics suggest that the average number of subscribers and portability among all the four major networks in Nigeria are 30330717 and 7040.750 respectively, the maximum and minimum number of total subscribers and portability are (57224316) (15303697) and (22724) (1256) respectively. The variable PORT fails the normality test, while SUB passes the test at five percent level of significance.

Regression Results

Table 2: Regression Results

Variables	POOLED	FEM	LSDV	REM
C	31900185 (0.000)	27928785 (0.0001)	23204997(0.0002)	29816558(0.002)
PORT	-cd970.87 (0.0765)	-364.5(0.5136)	-364.5(0.5136)	-668.050(0.1958)
D2			22466618	
D3			-6364829	
D4			2310753	
R-Squared	0.173	0.49	0.49	0.292
F-test	3.558(0.076)	3.316(0.042)	3.316(0.042)	15.724(0.006)
Hausman Test	1.8597(0.1727)			

Source: Authors

From the results above, there exists an insignificant inverse relationship between portability level and the total subscribers among the four major telecommunication networks in Nigeria, the choice of model for interpretation was based on the Hausman test done which suggests that Random Effect Model is of good fit as compared to fixed effect model, the model postulated that as portability increased by one unit, the subscribers level decreased by 668.050 units, this is in concomitant with the a prior expectation that portability reduces subscription level of each networks in the industry. However, this variable is statistical insignificant to the level of subscribers and this can be adduced to policy inconsistencies and the acceptance level of portability by the subscribers. The R-squared suggest 15.7% variation in total subscribers in Nigeria can be explained by portability, while 84.3% can be adduced to other variables affecting subscriptions which were not accounted for in the model.

The Least Square Dummy Variable Regression (LSDV) results suggest that the mean portability of subscribers of Airtel network (Reference Category) is 23204997, while that of MTN and GLO is higher by about 22466618 and 2310753 respectively and lastly Etisalat which is the worst-off network as a result of the introduction of MNP is lesser by 6364829.

CONCLUSION

Since the introduction of MNP in Nigeria, the telecom companies that seem to be better-off are MTN follow by Glo, Airtel, and Etisalat. MTN has the largest market share as a result of their brand loyalty, service delivery and other cheap tariff plans they made available to subscribers, this made large number of subscribers to port from other network to MTN. GLO is the second company that has benefited from this initiative follow by Airtel and lastly Etisalat which has actually lost its market share in the industry, this is because it has lost most of its subscribers to other operators, this could be adduced to poor service delivery of the company. The principle of number portability is fully applicable to mobile telecommunications. Many operators have claimed that Mobile Number Portability (MNP) is unnecessary and is an unwarranted expense, using assertions that the sector is highly competitive. Some mobile operators have gone to considerable extent to make MNP difficult and have discouraged customers from exercising this right. They have suggested alternatives such as personal numbering and Universal Personal Telephony (UPT). However, these are not substitutes for MNP, but are expensive, value-added services. MNP should therefore strongly been encouraged by governments and Regulatory Agencies to recognize that Mobile Number Portability (MNP) is an essential part of the competitive framework and should be made legally binding on all operators and service providers.

REFERENCES

Aoki, R.,& Small, J. (1999). The economics of number portability: switching costs and two-part tariffs. Working paper, Department of Economics, University of Auckland, Auckland.

Channels TV Online (2013). Reasons Why Some GSM Subscribers Cannot Port. Retrieved from: http://www.channelstv.com/home/2013/05/16/reasons-why-some-gsm-subscribers-cannot-port-ncc/

Gans, J.,& King, S. (2001). Mobile Network Competition, Customer Ignorance and Fixed-to-Mobile Call Prices. University of Melbourne, Melbourne.

Gans, J, King, S.P., & Woodbridge, G. (2001). Numbers to the people: Regulation, ownership, and local number portability. Information Economics and Policy, 13, 167-180.

Haucap, J. (2007). Telephone number allocation: a property rights approach. European Journal of Law and Economics, 15(2), 91-109.

Horrocks, J. (2007a). Strategic role of MNP. Workshop on Implementing Mobile Number Portability, Islamabad, Pakistan.

Horrocks, J. (2007b). Lessons from other countries. Workshop on Implementing Mobile Number Portability, Islamabad, Pakistan.

Iqbal, T., (2008). Mobile Number Portability in South Asia. LIRNEasia. Retrieved from http://lirneasia.net/2008/10/mobile-number-portability/

Katka, K. (2004).Mobile Number Portability – Time for more port authority. Total Telecom. Retrieved from http://www.totaltele.com/view.aspx?ID=373454

Keynote Capitals Research (2009).Mobile Number Portability in India: A Stock Markets Review. Retrieved from http://www.stockmarketsreview.com/news/mobile_number_portability_in_india_20090626

LoyaltySquare (2013). Retrieved October 30, 2013, from http://loyaltysquare.com/number_portability.php

Lyons, S. (2006). Measuring the benefits of mobile number portability. Working paper, Department of Economics, Trinity College, Dublin.

Mothersbaugh, L., & Beatty, E., (2001). Why customers stay: measuring the underlying dimensions of services switching costs and managing their differential strategic outcomes. Journal of Business Research, 55, 441–450.

Nigerian Communications Commission (2013). Monthly Subscriber Data Report. Retrieved from: http://ncc.gov.ng/index.php?option=com_content&view=article&id=125&Itemid=73

Okonji, E. (2013, August). Porting: MTN Is Biggest Loser, Etisalat Biggest Gainer. This Day Newspaper Online. Retrieved from: http://www.thisdaylive.com/articles/porting-mtn-is-biggest-loser-etisalat-biggest-gainer/155048

Okwuke, E. (2013, August). Mobile Number Portability: All Motion Little Movement. Daily Independent Newspaper Online. Retrieved from:http://dailyindependentnig.com/2013/08/mobile-number-portability-all-motion-little-movement

Premium Times (2013, April). Nexus It Is Set For Mobile Number Portability. Retrieved from: http://premiumtimesng.com/business/129203-ncc-says-it-is-set-for-mobile-numberportability.html

Smura, T., (2004), Mobile Number Portability – Case Finland. Mimeo, Networking Laboratory, Helsinki University of Technology.

Sutherland, E., (2007), Mobile Number Portability. Journal of Informatics, 9, 10–24.

Taaffe, J. (2004). Leader: A tale of two services. Retrieved from http://www.totaltele.com/view.aspx?ID=373452

Tiamiyu, O.A., & Mejabi, O.V. (2012). Evaluation of subscriber attitude to mobile number portability implementation in Nigeria. Journal of Emerging Trends in Computing and Information Sciences, 3(4), 526-533.

Wiki-MNP (2013). Mobile Number Portability. Retrieved October 30, 2013, from http://en.wikipedia.org/wiki/Mobile_number_portability