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Pull Factors as Determinants of Telephone Number Portability among Mobile Phone Users in Public Universities in Nigeria

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Abstract:
This study examined pull factors as determinants of telephone number portability among mobile phone users in public universities in Nigeria. This study limited its scope to the southwest only in Nigeria. The study covers twelve (12) public owned universities in Southwest Nigeria. Probability and non probability sampling techniques was used to sample a total of 1522 staff and students in the study area out of the population of 313,001. Primary data were collected using structured questionnaires. Descriptive and inferential statistics were used to analyze the data. Descriptive statistics include frequency counts and simple percentages, while inferential statistics such as logistic regression were used. The study revealed that pull factors (PUF):, promotional offer ($\beta = 0.395$, $p < 0.05$), this showed that if there is an increase in the promotional offer by network provider, the likelihood of attracting new customer to port in favor of the network provider will be high and brand image of the service providers ($\beta = 0.314$, $p < 0.05$), impact significantly on intention to port, this showed that good responsibilities of network providers will pull customers to their favor. Based on these findings, this study concluded that porting to another service provider could be significantly facilitated by marketing activities of competitors. Competitors' offer such as promotional activities, organized and well packaged image of providers can significantly drive porting. It could also be concluded from the same findings that current service providers can 'control' intention to port by customers if they apply the same or similar promotional strategies of competitors to their current service package. The implication is that the attractiveness to the competitors can easily be enjoyed with current providers. Thus, it was concluded that PUF significantly determine mobile number portability.

Keywords: Network portability, pull factors, promotional offers, brand image.

1. Introduction

Mobile Number Portability (MNP) is a service that enables mobile telephone users to switch from one mobile network operator to another, in search of better service quality, whilst retaining their original telephone numbers. This service, according to the NCC, would empower consumers, stimulate competition between the major telecom service providers and enhance the delivery of their services in the country(Premium times 2013). According to NCC's Director of Public Affairs, Tony Ojobo, about 4,000 Nigerians switched networks within the first 48 hours following the launch of Mobile Number Portability in the country (Okonji, 2013).

Many small and medium enterprises (SMEs) and sole traders rely on the use of mobile phones; most of which are early adopters. Without MNP, these customers will be locked out of the benefits of competition, which accompany number portability (Mihir and Divas, 2014). MNP allows transferring basic mobile calls and SMS services from one operator to another while keeping their original numbers as one's own identifier. With this development; the mobile technology has been competitive and service providers are moving aggressively to attract versatile users by offering some attractive services (Oloja, Kuboye and Chukwuma, 2013). On the other hand, dissatisfied customers now have a better alternative by moving to another service provider instead of worrying about losing their mobile number (Rahman, Hague & Ismail, 2010).

According to Deng, Zu, Lu, Wie and Zhang (2009), they explained the skill of a service provider to create a high degree of satisfaction is critical for product differentiation and developing a strong relationship with the subscribers. Hanif, Sehrish and Adnan (2010) revealed that user satisfaction could increase the loyalty to one telecommunication service provider. Satisfaction of subscribers can help the brand build long and profitable relationships with their customers.

However, many countries of the world have introduced the scheme with Singapore being the first Country to implement the MNP in 1997, followed by Hong Kong in 1999 and Australia in 2001. In Africa, it was South Africa that took the lead in 2006 followed by Egypt in 2007 while Kenya's was in April 2011 and of late Ghana in July 2011. Recently, many countries have adopted the MNP scheme to prevent market apathy and putting pressure on service providers to furnish more services at a competitive price level (Joshua *et al*, 2000). Furthermore, service providers have to be innovative to start products that can keep customers (Dominic, Joseph & Rogers, 2014). In the early stage of market growth, the wireless industry players bet on winning new customers; when the market is mature, the importance of subscriber retention will become the main view; attracting new subscribers becomes more difficult and more expensive than keeping customers already gained because service providers already have information on the preferences and behaviour of their current users, by promoting the adaptation of tactics to specific needs (Seo, Ranganathan & Babad, 2008). The costs associated with winning new subscribers; such as setting up new accounts, advertising, and operating expenses can make the cost of gaining a new subscriber more expensive than keeping old ones (Farber and Wycoff 1991; Peters, 1988); Such arguments emphasized the importance of understanding the various constructs related to the consumer's formation of switching behavior to identify the dynamism of consumer behavior in the communication industry.

However, the most challenging jobs for the present-day are keeping existing mobile customers. Mobile operator's ability to keep its customer has a direct impact on its profitability and effectiveness; since losing customer will affect the mobile operators in terms of cost (Kumaresh &Sekar, 2012), it is expedient to look at factors that can give network providers a competitive advantage over others. Since the introduction on MNP in Nigeria, there have been paucity literatures on determinants of MNP; it is on this paucity of literature this study wants to premise, in order to check how brand image and promotional offers which was categorized as pull factors determines network portability.

2. Literature Review

Mobile Number Portability (MNP) is also simply keeping your mobile phone number when moving from your existing service provider to a new provider if perceived that the quality of service offered by the old service provider is not satisfactory. (Bluehler & Haucap, 2004) it means one will use the services and features offered by one's new provider and still take one's existing service, mobile number and its features with you to another service provider. Mobile number portability is not a service feature or a product; but it is the removal of a barrier to choosing the provider or service that suits an individual Mobile phone user (Oliver, 2009). Its purpose is to give consumers more flexibility to choose their service provider and enforce effective competition by enabling subscribers to switch between service providers without changing telephone numbers (Buehler & Haucap, 2004).

2.1. Empirical Literature

2.1.1. Promotional Offer and Switching Behaviour

Kumaresh and Sekar (2012) studied mobile number portability in Coimbatore: an empirical analysis of consumer switching behaviour, which focused on the mobile number portability among the mobile users in Coimbatore. The study considered 100 sample sizes through simple random sampling technique and multiple regression analyses were used for the data. The findings revealed that Promotional offers and Service affordability were the most important factors influencing the mobile subscribers' Intention to switch service provider rather than Service Quality.

Gu-Shin, Chiung, and Yun-Ting (2011), in "the promotion, switching barriers and loyalty", studied the causal relationships among promotion effects, switching barriers, and loyalty in the department stores in Taiwan, using 510 sample size and Logit regression was used for the analysis of the data. The study revealed that there is no relationship between switching and promotional offers. The reasons arise from "too often" and "too similar" sales promotion programs of competitive department stores in Taiwan, leading the promotion effects to not contribute to the attractiveness of competitors.

Baohomg, Scott, and Kannan (2003), in "measuring the impact of promotions on brand switching when consumers are forward looking in Germany using 432 sample size", studied whether brand-switching elasticity derived from these models are overestimated as a result of rational consumer adjustment of purchase timing to coincide with promotion schedules and whether a dynamic structural model can address this bias. Using simulated data, the authors' first show that if the structural model is correct, brand- switching elasticity are overestimated by stand-alone logit models. A nested logit model improves the estimates, but not completely. Second, the authors estimate the models on real data. The results indicate that the structural model fits better and produces sensible coefficient estimates. The authors then observed the same pattern in switching elasticity as they do in the simulation. Third, the authors predict sales, assuming a 50% increase in promotion frequency. The reduced-form models predict much higher sales levels than does the dynamic structural model. The authors concluded that promotion has significant relationship with switching.

Olatokun and Nwonne (2012), in "determinant of users' choice of mobile service providers in the Nigerian telecommunication market", studied the significance of price (call rate), service quality, service availability, promotion and brand image as it affects users' perception in selecting a mobile telecommunication service provider in the Nigerian telecommunication market, using Ibadan, a Nigerian municipality, as a case study. The study was a sample survey of a cross section of mobile phone users. Data was collected with an adapted questionnaire distributed to 367 users using the convenience sampling technique. Structural Equation Modelling (SEM) approach was adopted in understanding the users' choice process. The empirical evidence was based on a model fit from the result of factor analysis, regression analysis, and chi-square goodness-of-fit statistics. The result revealed that promotion and brand image has a positive significant relationship with switching.

Omotayo (2011) studied the effect of sales promotion on customer loyalty in the telecommunication industry in Nigeria. In this study, the survey method was used in gathering information from the respondents. Simple random sampling was used to select a sample size of 310 customers of mobile telecommunication services, while descriptive and inferential statistical analyses were adopted for analyses with the aid of SPSS software. Producers spend a large part of their total marketing communication expenses on sales promotion. The study found that, there was a positive relationship between sales promotion and customer loyalty. More importantly, it was discovered that non-loyal customers were more prone to switch to competing products as a result of sales promotion than loyal customers.

Kumaresh and Praveena (2010) undertook an empirical analysis of consumer switching behavior towards mobile number portability in Erode district of Tamil Nadu in India. 100 MNP customers randomly selected from the different mobile services in Erode city. The statistical techniques that were used to analyze the data include Percentage analysis, Factor analysis, discriminate analysis and Garrett ranking. The results revealed that promotional offers, family orientation and service affordability were the most important factors that influenced the mobile subscriber intention to switch service provider.

Abdullah, Shahadat and Rakibul (2015) Studied Factors Influencing the Behavior of Mobile Phone Users to Switch Their Mobile Telecommunication Operators in Bangladesh. 50 respondents and frequency distribution, Pearson correlation and multiple regression models was used to analyze the data. The empirical results revealed that tariff package, internet facility and promotional activity had significant influence on consumers' brand switching behavior. The study showed that call charges and tariff plan plays the most important role in switching the service providers and it was followed by network coverage, quality, internet package, advertising, promotion, value added services and customer care services

Simon and Emmanuel (2015) proposed a theoretical Model for Explaining Subscribers' Intention to switch back in Mobile Telecommunication Industry in Ghana. The proposed structural model was tested using data from a cross-section of 1000 subscribers of six global mobile telecommunication companies through convenience sampling technique, the method of analysis used was partial least squares structural equation modeling (PLS-SEM). The findings indicated that consumer intention to switch back is influenced by switching motive, post-switching behaviour and attractiveness of firm's offer. Moreover, switching efficacy was found to moderate the effect of perceived attractiveness of firm's offer on intention to switch back.

Oghojafor, Ladipo, Ighomereho and Odunewu (2014) investigated the determinants of customer satisfaction and loyalty in the Nigerian telecommunications industry with a sample size of one thousand (1000) respondents selected from Lagos State through a purposive sampling technique. Data were analyzed through multiple regressions and the result showed that promotion is an important factor in determining switching behaviour.

2.1.2. Brand Image and Switching Behaviour

Muhammad, Muhammad and Hafiz (2012) investigated the Impact of brand image, service quality and price on customer satisfaction in Pakistan Telecommunication sector. Data was collected from educational and business sectors of the Gujranwala region of Pakistan using stratified random sampling technique. The sample size was 200 and 165 completed questionnaires were received back, making a response rate of 82.5%. The result of this research showed that there is no significant relationship between brand image and switching behaviour.

Rashid, Rab, Amna, Urooj, Fareha, Amna, Zahid and Moeed (2013) studied the effect of brand image on brand loyalty and the role of customer satisfaction, in it. The study was to check the effect of brand image on brand loyalty and the moderating role of customer satisfaction in it. Brand attributes and Brand benefits were studied as dimensions of Brand Image. Quantitative study was conducted in the wireless Telecommunication sector of Pakistan. A sample of 150 students and teachers, from different colleges and universities of Sahiwal, were selected and surveyed through questionnaires. Pearson Correlation and Regression were run to analyse the data. Finding reveals that positive and significant relation exists between Brand Image and Brand loyalty. And Customer Satisfaction also has a positive moderating effect on this relation.

Sarwat, Aamir, Sania, Muskan, Bais, and Anum (2013) studied factors behind brand switching in cellular networks. Factors affecting customer satisfaction have great importance in order to know the reasons and facts that were responsible behind switching in cellular networks. Customers are satisfied, when their desires, wishes and needs were fulfilled by any brand, used by them, In case of different brands of cellular network like ufone, factors like: Price, service quality, trust and brand image played a great role in customer satisfaction and their brand switching. For this research study, the results revealed that there was a positive significant relationship between brand image and switching behaviour

Stephen, Sondon, Maznah, Nabsiah, Ishak and Amran (2007) studied the effect of brand image benefits on satisfaction and loyalty intention in the context of colour cosmetic product in Malaysia. Five brand image benefits consisting of functional, social, symbolic, experiential and appearance enhance were investigated. A survey carried out on 97 females, using regression for the analysis of the data. Result showed that functional and appearance enhances significantly affected loyalty intention. Four of brand image benefits: functional, social, experiential, and appearance enhance were positively related to overall satisfaction. The results also indicated that overall satisfaction does influenced customers' loyalty. The results imply that marketers should focus on brand image benefits in their effort to achieve customer loyalty.

Rizwan, Idrees, Abdul, Urooj, Hafsa, Waheed and Shoaib (2010), in "impact of brand switching brand credibility, customer satisfaction and service quality on brand loyalty" studied brand loyalty of banking clients in Bahawalpur in Pakistan. A field survey was conducted by Islamia University of Bahawalpur. The study was conducted on 200 respondents, analysis were conducted by means of exploratory and confirmatory factors, for checking the data and common method variance. For checking the relationship regression

analysis was done. The results were quite significant. Findings indicated that there was a positive relationship between brand image and customer loyalty.

Anjali, Shruti, Shweta and Neha (2013), in "impact of brand loyalty on buying behaviour of women customers for beauty care products" studied the buying behaviour of consumers in relation to beauty products. Women buying behaviours have been studied because women were the ones who were engrossed in purchasing beauty care products. Non-Probability sampling; convenience sampling method was used for this survey. Responses from respondents were gathered using a quantitative approach. The findings of this study indicated that, quality and price were the two main parameters for which women may switch from one brand to another brand. Brand image is the major attribute which women considered while purchasing beauty product.

Kambiz and Fatemeh (2011) studied the effects of brand image and perceived public relation on customer loyalty with Electronics consumers in Tehran Iran. The sample size for the study was 385 with Hierarchical regression being used for the analysis of data. The results showed that perceived public relation has a positive relationship with customer loyalty and that this relation is moderated by brand image. When a brand image is favourable, the positive effect of perceived public relation on customer loyalty is significant.

Zeeshan, Maleehah and Usman (2015) determined the factors affecting consumer switching behaviour: mobile phone market in Manchester- United Kingdom. I50 sample size selected randomly and data were analyzed through regression. The findings of this research were positive and confirmed that need based and opportunity based behaviour; the technology, innovations, changing demographics, brand image, perception, behaviors, attitudes, loyalty, advertising and other factors, have significant effect towards stimulating and de-motivating the behaviour of mobile users, or being loyal with existing brand or switch towards another brand.

Gabriella and Fredrik (2012) studied switching behaviour in retail banking among students in Umea university in Sweden, with sample size of 129 through convenience sampling technique , using regression for the analysis of data and the result of the research found that brand image, satisfaction, relational investment, attitude towards switching and subjective norms has significant relationships with switching intention.

Muhammad, Zaibunnisa and Shahzad (2015) studied factors affecting brand switching in telecommunication sector in Pakistan. 50 sample sizes were chosen for the study, using regression for the analysis of data collected and findings showed that service quality, price and brand image have a significant impact on switching.

3. Methods

This study adopted survey research design to achieve all the objectives of this study. The choice of this research is borne out of the fact that quantitative researches usually fit with deductive approaches in which there is a theory and or hypothesis, which justifies the variables and the objective of the research (Borredgoet Streveler, Miller and Smith, 2009). Since this study was anchored on fresh gathering of data, survey research design was the most appropriate. One of the main purposes of the quantitative research is for the researcher to use a specific population and project the findings onto a larger population using a very objective process (Thorne and Gissen, 2002). Responses were sought from staff and students of public universities in south west Nigeria on factors enumerated in the research instruments for the purpose of itemizing the incidence of socioeconomic factors and portability. The research instrument used for this study was the questionnaire adapted from the work of Olatokun and Nwonne (2012). The major modification of the research instrument is in the area of switching for portability.

3.1. Population, Sample and Sampling Techniques

The population of the study covered all the staff (academic and non-academic) and students of the selected public universities in Southwest Nigeria. A total number of 37,918 and 275, 083 of staff and students, respectively, constitute the total population of the study. The population figures were gotten from each sampled institution. All of these were gotten for the year end 2014.

3.2. Sample size and Sampling Techniques

Mugenda and Mugenda (2003) explained that target population should have some observable characteristics, to which the researcher intends to generalize the results of the study. Considering the enormity of the population of this study, and in order to avoid voluminous data, the total sample size for the study was 1522. This was achieved using the Krejcie and Morgan (1970) sample size table.

3.3. Sampling Technique

Probability and non probability sampling techniques were used for this study. The non probability sample techniques used was the homogenous purposive sampling technique for the selection of two universities (one state university and one federal university) from each state in the Southwest, Nigeria, based on the high number of students' enrolment and by JAMB choice, which were a proxy to a large number of staff as well.

3.4. Method of Data Analysis

Data for the study were analyzed using descriptive and inferential statistics. Descriptive statistics were used to present and analyze demographic data of respondents. The inferential involve the use of binary logistic model, which was applied to all the variables of the study objectives. Parameter estimates of the model were useful in testing the hypotheses of the study following the stated research design. The model was tested using non-linear estimation techniques.

4. Results and Discussion

4.1. Response Rate of Research Instrument

A total of one thousand five hundred and twenty two (1522) copies of the questionnaires were circulated, 187 and 1335, respectively among staff and students of public owned universities. Out of the one hundred and eighty seven (187) copies of the questionnaire distributed among the staff of sampled universities, one hundred and seventy nine were found useful. This represented a response rate of 95.72% from the staff of sampled universities in the study area. However, one thousand two hundred and forty (1240) copies of the questionnaires out of one thousand three hundred and thirty five (1335) distributed copies were found useful; this was due to the improper filling of the questionnaire. This represented a response rate of 92.88%. The difference in response rate showed that the staffs of the sampled universities were more responsive than the students. Overall, a total of one thousand four hundred and nineteen (1419) copies of questionnaires were found useful for analysis, representing 94.3% of distributed copies of the questionnaires.

4.2. Impact of Pull Factors on the Intention to Port among Mobile Phone Users

Pull factors are described as positive factors that attract consumers to move to a new service provider. They are also described as competitors' factors. Results presented in Table 1 showed that pull factors, such as promotional offer and brand of the service providers, impact significantly ($p < 0.05$) on intention to port. Promotional offer from competitors could attract mobile phone users towards increasing their intention to port. Parameter estimate of promotional offer from competitor is positive and significant ($\beta = 0.395$, $p < 0.05$).

Parameter estimate of brand image exerts a positive and significant ($\beta = 0.314$, $p < 0.05$) influence on intention to port among mobile phone users.

Variables	Estimates	Std. Err.	Z	Marginal effect
Promotional offer	0.395	0.126	3.15***	0.0455***
Brand image	0.314	0.112	2.79	0.01562***
Constant	0.915	0.301	3.04***	
LR chi2 (2) = 46.92				
Prob > chi2 = 0.000				
Log likelihood = -439.36791				
Y = pr (d5) (predict)				
= 0.864407				

Table 1: Estimated effect of pull factors on the intention to port
Source: Authors' Data Analysis, (2017)
***, **,*, significant at 1%

4.3. Test of Hypothesis

From the results in Table 2 below it was clear that the null hypothesis that there is no significant relationship between the pull factors and the intention to port among mobile phone users in public universities in Nigeria is rejected, due to the value of p being less than the 0.05 significance level.

Source	Partial SS	DF	MS	F	Prob> F
Model	364.117367	13	28.0090282	39.39	0.0000
Residual	779.392543	1096	.711124583		
Total	1143.50991	1109	1.03111804		
Root MSE	.843282				
Number of Obs	1110				

Table 2: Result of a two way ANOVAs

4.4. Discussion of Findings

Promotional offer was found to be positive and significant, which suggested that increasing promotional offers from competitors could pull consumers away from their current service providers to a new service provider. The result agreed with Baohomg, Scott, and Kannan (2003)and Kumaresh and Sekar (2012) that also found that competitors' activities could have significant pull effect in service switching. Attractive strategies employed by competitors could present alternative attractiveness that could increase intention to port among mobile phone users.

The relevance of promotional offers has a significant factor with potential to increase intention to port is also highlighted in Kumaresh and Praveena (2010) and Abdullah *et al* (2015) where it was found that several mobile subscribers ported their mobile line because of promotional discount, special sales offers, and promotional bonuses. The finding of this study further indicated that the greater the attractiveness of competitor offer and reputation, the stronger the consumer would intend to port to the competitor. Thus, mobile

service providers could offer different promotional plans, provide additional calling minutes that would increase the usage levels of their customers in order to fend off attraction from competitors.

Brand image was found to be positive and significant. Brand image represent reputation quality, which had been found to be a relatively important element in consumer evaluation of service quality in general and decision to port, Muhammad, Muhammad and Hafiz (2012), and of mobile network operators in particular (Nimako, 2012). Conceptually, consumers could be attracted to port to competitors when the current service providers' reputation for quality and good corporate social responsibility relativeto competitors' is low. The image of a service provider is mostly linked to the credibility of the service provider (name and the reputation) and the ability to satisfy the needs of the customers Olatokun and Nwonne (2012). As a pull factor that attracts mobile phone users, image plays a major role in mobile number portability. This study is in line with the studies of Sarwat *et al* (2013) and Olatokun and Nwonne (2012)

5. Conclusion and Recommendation

From the results of data analysis, this study empirically concluded that in practical terms porting to other service providers could be significantly facilitated by marketing activities of competitors. Competitors' offers such as promotional activities, organized and well packaged image of providers can significantly drive porting. Also, current service providers can 'control' intention to port by customers if they apply the same or similar promotional strategies of competitors to their current service package. The implication is that the attractiveness to the competitors can easily be enjoyed with current providers. Thus, it is concluded that pull factors significantly determine mobile number portability. Therefore, it is recommended that service providers should enhance their understanding of competitors' strategies to 'pull' customers to 'porting'. This is crucial to ward off actions that could lead firms away from the profit line also Marketers should aim at developing innovative ways tobuild communities among consumers, offer special promotional packages to honourexisting consumers, offer compensation and service recovery packages for consumerswho report genuine service failures. These strategies build strong relationship bonds between consumers andfirms, which act as resistance in consumers against strong competitor attractions.

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