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Conceptualizing a Cashless System for the Retail Banking Sector of an Emerging Economy: Policy Implications for the Nigerian Apex Bank

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Abstract

Though the disadvantages of a cash-based economy have led to a massive rollout of electronic systems of payment in many countries of the world; there are some academic evidences suggesting that the adoption and usage of electronic systems of transactions are still below expectations despite its acclaimed advantages. Although the Central Bank of Nigeria (CBN) joined other leading countries as they announced the cashless policy in 2011 and has subsequently introduced more stringent measures to implement the policy to date, there are doubts that the policy is for the good of all. Based on the insights obtained from innovation theory and cross-country comparison therefore, this paper investigated why the Nigerian

economy is still far from being ready for a national rollout of the cashless policy. Findings show that the age distribution, income and educational level of an economy will likely shape the antecedents of consumers' acceptance and usage of electronic transaction systems. The proposed conceptual model shows that the Nigerian economy is unready for a national rollout of the cashless policy. It was also predicted that a national rollout of the cashless policy will generate some labyrinths that may likely spell short-run difficulties for retail banking activities in Nigeria. Policy implications for the CBN and other emerging economies that hope to embark on similar policy were put forward.

Key Words: cashless policy, trust, risk perception, transaction security, education age and income distribution, electronic payment system, customer inertia, innovation acceptance, innovation theories

Introduction

The Central Bank of Nigeria (CBN)'s cashless policy represents is an attempt by the apex bank to reposition the Nigerian financial system for more robust economic growth. The policy which was announced by the CBN in 2011 and was first pilot-tested in Lagos in April 2012 prior to national rollout was aimed at tightening cash usage and accelerating the adoption of electronic methods of transactions. The three broad objectives that the CBN cited for the institution of the cashless policy are: a) to drive the development and modernization of the payment system in line with Vision 2020, b) to reduce the cost of banking services and drive financial inclusion by providing more efficient transaction options and greater reach and c) to improve the effectiveness of monetary policy in managing inflation and driving economic growth (EFInA, 2013). In September 2019, CBN introduced new guidelines that require bank customers to pay a cash handling charge for cash deposits and withdrawals exceeding ₦500,000 for individuals and ₦3,000,000 for corporate firms. Though the objectives sound convincing, we doubt that the CBN considered the demographic configuration of the Nigerian populace before instituting the policy.

There are far more latent practical implications that will likely accompany the full implementation of the cashless policy in the Nigerian economy than anticipated by the CBN as well as the Nigerian retail banks. Such implications arose from the behavioral research standpoint. Zhu, Kraemer, Gurbaxani, and Xu (2006) argued that the benefits arising from a promising innovation will be curtailed if such innovation cannot be widely adopted while Frolick and Chen (2004) stated that the adoption of mobile commerce and services has been slower than expected due to complexity of the transactions, perceived lack of security and lack of user friendly mobile portals. Further, Ogbuji Izogo, and Onuoha (2011) conceptually demonstrated that the acceptance of electronic systems of payment is far below expectations in Nigeria. What these research evidences suggest is that the transition from cash to electronic transactions system requires a clear conception of some latent consumers' behavioral predispositions. Available evidences show that the CBN as well as the Nigerian retail banks are insufficiently guided in this respect. The aim of this paper therefore, is to propose a conceptual model that clearly demonstrates why the Nigerian economy is still far from being ready for a national rollout of the cashless policy base on the insights obtained from innovation theories and cross-country comparison. Such research is expected to chart a workable blueprint for the CBN, Nigerian retail banks and other emerging economies that might wish to pursue similar policy.

The Cashless Policy and Electronic Payment Systems Nexus: The Nigeria Case and Implications

The CBN's cashless policy is a subtle move aimed at shrinking cash usage and its accompanying demerits in the Nigerian economy. The CBN announced the cashless policy in 2011 and commenced a pilot of the policy in Lagos State in April 2012 (EFInA, 2013). Originally, the apex bank proposed a maximum deposit and cash withdrawal thresholds of N150, 000 and N1, 000, 000 per day for individuals and corporate bodies respectively. This does not in any way imply that individuals and corporate bodies are not authorized to exceed this threshold, but rather imply that a processing fee of 10% and 20% respectively for individuals and corporate bodies will be charged on the excess amount by which the set threshold is exceeded. The charges are now meant to quench the taste for cash and give room for the adoption of electronic transaction systems.

Subsequently, there was an upward review of this amount to N500, 000 and N3, 000, 000 respectively for individuals and corporate bodies. The chargeable interest on overdrawn amounts was equally reviewed downwards to 2% and 3% respectively for individuals and corporate entities whereas the processing fees for cash deposits exceeding the set threshold stood at 3% and 5% respectively for individuals and corporate entities. Consistent with the CBN's cashless policy, increasing number of electronic transactions platforms including point-of-sale (POS) terminals, mobile payment system, Internet banking, multi-functional ATM, Electronic Funds Transfer Systems, direct debit for regular in nature bills payment and soon have been rolled out since 2011 to date.

The proposed shift towards electronic systems of payment stems from its advantages over cash transaction system. The most cited advantage being convenience. Cross-country evidences equally indicate that the use of electronic systems of payment reveals an optimistic blueprint. Radcliffe and Voorhies (2012) reported that branchless banking systems have brought considerably more transaction points to customers in Pakistan and Tanzania. Nyangosi, Arora, and Singh (2009) found that customers throw a lot of weight on the importance of e-banking in India and Kenya due to the convenience, accuracy and efficiency of the system. In India, a review of government-to-person payments established that connecting every household to a digital payment system and automating the government payments could provide low-income households with government benefits whilst it has the capacity of saving $22 billion per year for the government (Radcliffe & Voorhies, 2012).

Building on the above findings, a case can therefore be made that the key purpose of going cashless is to encourage customers to embrace electronic transaction systems due to its enormous advantages over the cash transaction system. Though, it is anticipated that electronic systems of payment should displace cash transaction system with time, the elimination of cash should be a very gradual process especially in emerging economies including Nigeria. In fact, until certain structural adjustments are achieved within the economy, cash system of payment will still dominate electronic transactions.

Theoretical Context

Consumers' attitude towards innovation

The uncertainties of product marketing would be reduced if marketers could anticipate how consumers will react to their products (Schiffman et al., 2012). Uncertainty is therefore a critical

obstacle to the adoption of technological innovations (Sahin, 2006) which smart firms must try to surmount. Accordingly, a great deal of research has been conducted to provide useful insights into consumers' adoption and acceptance of technological innovations. Two research traditions are predominant. The first perspective focuses on trait variables to explain the tendency of an individual to use new technology. The second paradigm focuses on the attributes of technological innovation that can influence the perception and acceptance of an innovation. The two dominant models of this perspective are the Diffusion of Innovation Theory (DOI) (Rogers, 1962) and the Technology Acceptance Model (TAM) (Davis, 1985).

Rogers' (1962; 2003) theory is a comprehensive framework that fundamentally addressed user motivations and adoption behavior paradigms of innovation. According to Rogers (2003), diffusion of innovation is an uncertainty reduction process that can be achieved through the attributes of an innovation which include: relative advantage, compatibility, complexity, trialability and observability/communicability. According to Schiffman et al. (2012), "The degree to which potential consumers feel a new product is consistent with their present needs, values and practices are a measure of its compatibility. Complexity is the degree to which a new product is difficult to understand or use. Trialability refers to the degree to which a new product is capable of being tried on limited basis. Observability (communicability) is the ease with which a product's benefits or attributes can be observed, imagined or discerned to potential consumers" (pp. 406-407). Relative advantage is "the degree to which an innovation is perceived as being better than the idea it supersedes" (Rogers, 2003, p. 229). Reducing uncertainty is very crucial because it has been shown to have the capacity to reduce risk perception of trying an innovation.

Similarly, Davis (1985) proposed that system use is a response that can be explained or predicted by user motivation, which in turn, is directly influenced by an external stimulus consisting of the actual system features and capabilities. According to the TAM model, user motivation is influenced by three factors which include: perceived ease of use and perceived usefulness. While perceived ease of use refers to the degree to which a technological system can be used without difficulties, perceived usefulness refers to the extent to which individuals believe that a technology is useful.

Therefore, both the TAM model and the DOI theory holds that the adoption and use of an innovation is a function of the unique attributes of such innovation. Porter and Donthu (2006) stated that relative advantage is consistent with the perceived usefulness construct in the TAM, whereas complexity is consistent with perceived ease of use. Though the TAM model seems to be the most widely applied in predicting the motivational factors that underlie user acceptance of innovation, integrating the two perspectives (TAM and DOI) and adding other important variables (see for example, Tung et al., 2008)as well as adaptation remain the most fruitful endeavor because it has been shown in previous studies that the attributes that drive innovation acceptance as postulated in the two models have uneven impact on behavioral intentions. Such impact equally tends to be context-specific. According to Porter and Donthu's (2006) study of Internet usage among Americans, perceived usefulness typically has a stronger direct effect on attitudes than does perceived ease of use which implies that users tend to overcome difficulties in using new technology if the benefits of usage are substantive. Luo et al. (2010) used a sample of 122 subjects recruited from the undergraduate student volunteers at an Eastern U.S. university to demonstrate that the expected utility of mobile banking is the most important factor that directly enhances its adoption intention. Other relevant conceptualizations of

innovation adoption and use tend to suggest that such attributes as trust, perceived risk, security and customer inertia influence consumers' acceptance of innovation.

To date, trust remains one of the mostly studied behavioral intellectual concepts with mounting proportion of these studies concerned with conceptualization and dimensional measurement of the construct. Font et al. (2008) argued that trust is related to confidence and credibility in someone or something. Tung et al. (2008) found that trust has a great positive influence on behavioral intention to use electronic logistics information system. Additionally, Kim et al. (2009) found that relative benefits, propensity to trust and structural assurances had a significant effect on initial trust in mobile banking whereas, the perception of initial trust and relative benefits are vital in promoting personal intention to adopt an innovation. It follows therefore, that if the general faith or belief of people in others is uncertain; it is very likely that consumers' attitudes towards innovative artifacts will be apprehensive.

The key role of perceived risk in innovation acceptance has also been extensively studied. Perceived risk has been shown to influence the acceptance of Internet banking (Philip, Cunningham, and Devlin, 2006) and online shopping (Izogo & Nwekpa, 2012). Consumers are still concerned about giving personal and credit card information over the internet (Izogo & Nwekpa, 2012). The general conclusion of most studies is that consumers are unlikely to adopt an innovation if perceived risk of acceptance is high. Also related to the concept of perceived risk is transaction security. The basic difference between the two concepts is that transaction security is an antecedent of perceived risk. Liao and Cheung (2001) established that transactions security significantly affect the initial willingness of Singaporeans to e-shop. Further, security was found to be a significant predictor of attitude towards on-line shopping (Vijayasarathy, 2004) and online banking (Agarwal, Rastogi, & Mehrotra, 2009). Thus, the acceptance of innovation can be facilitated by reducing consumers' perceived risk through guaranteeing customers security of their transactions.

Customer inertia has equally been extensively shown to inhibit innovation acceptance. Jaw et al. (2011) concluded that inertia hinders alterations in behaviour and thus results in hesitancy to try new service delivery alternatives. Polites and Karahanna (2012) and Rindova and Petkova (2007) argued that inertia reduces customers' efforts to learn about web-based services. Philip et al. (2006) used a content analysis procedure to establish that inertia plays a critical role in explaining why consumers resist Internet banking. Jaw et al. (2013) demonstrated that inertia mediates the impact of innovation characteristics and e-service adoption intention. Since inertia reflects customers' reluctance towards trying alternative products and services, some research efforts in the academic literature have been devoted to examining the determinants of this reluctance even in the face of dissatisfaction. Ogbuji et al. (2011) argued that insecurity of electronic transactions is one of the root causes of customer inertia towards e-purse acceptance and usage. Customers' ignorance or absolute absence of alternative products or services can equally play a part. Yanamandram and White (2004) also argued that the complexity, costs and time inherent in switching financial services are the leading determinants of customer inertia.

Education, Income, Age and Innovation Acceptance

The demographic composition of any economy has been shown to influence innovation acceptance. Porter and Donthu (2006) argued that even though most Americans use the Internet, the older, less educated, minority and lower income earners have lower usage rates than younger, highly educated, white and wealthier individuals. They developed and tested an

extended version of the TAM to explain these differences. Results show that age, education and income are associated differentially with beliefs about the Internet, and that these beliefs influence a consumer's attitude toward and use of the Internet. Within the Chinese banking context, Laforet and Li (2005) found that adopters of mobile banking are relatively young, wealthy, and employed. Agarwal et al. (2009) demonstrated that age and profession are factors influencing the usage of e-banking services in India. These findings therefore explain why the success of electronic payment systems is skewed against emerging economies like Africa in favor of developed countries. Taking education as a reference point, available data reports an optimistic blueprint for European countries as against the low literacy level prevalent in developing countries Nigeria inclusive. In Sweden where acceptance and use of electronic systems of payment is at the highest, the literacy level is 99%. Still, the World Bank Report (2012) similarly indicated that in Europe and Central Asia, the aggregate literacy level of youth and adult stood at 98.7% (male: 99.4% and female: 98.7%) and 97.5% (male: 99.0%, female: 96.6%) respectively.

Conversely, a diagnostic report of the literacy distribution of Nigerians according to Temitope (2013) indicates that seventeen out of the country's thirty-six states plus the Federal Capital Territory are at risk of not achieving the education - for - all (EFA) goal by 2015 because children and adult literacy rates are between 14.5 and 49.3 percent. Muhammed (2012) drew from the estimates of the National Bureau of Statistics to conclude that approximately 70% of Nigerians are illiterates. Further, being literate does not even guarantee an individual's ability to use an innovative artifact because the quality of education in some Nigerian institutions is in a state of shambles. The outcome of low levels of literacy is that people will be uninformed and misinformed about certain issues. This can consequently lead to crime. And as crime increases, suspicion will equally rise among the people. This can consequently lead to loss of trust and confidence in innovative system adoption and usage.

Existing evidence also suggest that income level is an important index for measuring consumers' responses to an innovation and as such can provide useful insights for predicting the success or otherwise of the cashless policy and subsequent adoption of alternative systems of payment in Nigeria. Wealthier consumers are more likely to accept an innovation than the poor segment. Real statistical data reveals a disturbing proportion of abject poverty paralleling 60.9% in Nigeria in the year 2010 (Akanbi, 2012) whereas only 12.9% of the Swedish populace were just at the risk of poverty threshold in the same year (Eurostat, 2013). This also lends strong support to the high usage rate of electronic payment system in the later country. Specifically, the National Bureau of Statistics reveals that poverty is more intense in the northern regions of Nigeria with Sokoto and Borno States reporting a whopping 86.4% and 77.7% respectively (Akanbi, 2012). Whereas, Sweden is among the European countries reporting the world's lowest GINI coefficients, a clear indication of why the country is leading in electronic payment systems.

Though age has been supported as a key factor driving the acceptance of electronic system of payment, this trend can only be active if the younger generation of an economy is well educated and wealthy. There is also strong evidence that income level is partly a function of the level of education. Though Nigeria is currently going through demographic transition which in a rational sense suggests a large market for firms delivering electronic payment services, it is vital to note that significant proportion of this younger population is uneducated and consequently poor compared to European countries. According to the National Bureau of

Statistics (2010), the youth literacy rate in English Language stood at 76.3% with very high disparities across different states of the country and in the rural-urban ratio. Abia State has the highest rate of 95.6% but Sokoto State had the lowest rate of 33.1% whilst the urban and rural areas had 90% and 69% respectively.

These demographic issues have led to mounting suspicion, and there had been arguments on unavailability of the right enlightened populace as well as the required technology to support the cashless policy (Bukola, Gbenga, and Anthony, 2013).Following these trends, one may be tempted to argue that the cashless policy is simply an insufficiently planned innovation imposed by the CBN without considering the latent demographic configuration of the Nigerian population. Bukola et al. (2013) are of the view that the CBN has extended the cashless policy to the Federal Capital Territory and five other states of the country despite the questionable readiness status of the country to support a cashless economy. Leiponen (2005) argued that the likelihood of accomplishing innovation is higher if efforts are made to acquire external knowledge from, for example, customers and competitors than if innovation efforts are based only on internal incremental learning. Even though the anticipated benefits of the policy are not in doubt, if promising innovations cannot be widely adopted, the benefits resulting from their invention will be curtailed(Zhu et al., 2006).Okoye and Ezejiofor (2013) argued that although the anticipated benefits of the adoption of e-payment and cashless policy have been widely publicized, people are yet to be fully convinced that the agenda is for the good of all. This is the more reason caution need to be applied by the CBN in the full implementation of the policy. To facilitate easy diffusion and faster adoption, it is therefore very essential that an innovation must be customer-oriented.

Discussions

So far, we have attempted to present a comprehensive view of the cashless policy initiated by the Nigerian apex bank and theoretical evidences indicating why the Nigerian economy is not yet ready for a national rollout of the policy. In this section, we the anticipated consumers' behavioural responses towards the policy and further proposed an untested model of these expected consumers' behavioural responses. Policy implications for the CBN and the demographic issues that may possibly influence consumers' attitude towards the policy are also discussed. Figure 1 captured the proposed model. The model shows that customers are likely to resist the cashless policy because the age distribution, education and income level of the consumers has an influence on their perception of complexity, compatibility, relative advantage, observability, trust, customer inertia, risk and transaction security. The model also shows that customer resistance of the innovation is probably bound to increase the queues in banking halls, the number of the unbanked and bank fraud across the country.

As argued earlier, the adoption of innovation is an uncertainty reduction process. If the Nigerian retail banks fail to deliver secured electronic transaction systems, build trust, streamline perceived ease of use/complexity, boost perceived relative advantage and communicability/observability and reduce perceived risk as well as customer inertia; it is very unlikely that the uncertainty accompanying the adoption of electronic systems of payment will be reduced. If this is the case, the intended goals of the cashless policy may be very difficult to realize at least in the short run due to possible consumers' initial resistance to alternative systems of transactions. Schiffman et al. (2012) argued that consumers' resistance to innovation increases when perceived relative advantage, perceived compatibility, trialability and

communicability are low and perceived complexity is high. The trialability component of the Rogers' model has been the most visible and applicable as the cashless policy has already been piloted tested in Lagos to observe how successful the innovation is. Luo et al. (2010) argued that banks should partner with wireless services providers to jointly launch free trial mobile banking service or use other promotions to encourage potential mobile banking customers to get some hand on experience of the innovation. Perceived relative advantage of the cashless policy is still in doubt because the policy has barely been adequately publicized (even though Okoye and Ezejiofor 2013 argued otherwise) especially when note is taken of the fact that about 70% of the Nigerian population are resident in the rural areas with just about 30% living in the urban areas (National Bureau of Statistics, 2010). The communicability of the cashless system is equally going to be somewhat challenging because the benefits of the policy is highly intangible and Sahin (2006) had already argued that the adoption rate of the intangible aspect of technological innovation is quite slow because it has a low level of observability. It is an aspect of the policy that can be overcome in the long run when customers might have had experiences with the alternative systems of cash transactions provided their experiences are satisfactory.

However, it must be explicitly stated that contending with security, trust, perceived compatibility, relative advantage and complexity, risk perception, observability and customer inertia issues associated with a cashless system in an emerging economy like Nigeria is far from easy because of some demographic issues. Our review of the state of education, income and age distribution of the Nigerian population largely indicate that unless certain key structural deficiencies are addressed, a national rollout of the cashless policy may be counterproductive at least in the short-run. There is urgent need to invest more on the educational sector to step-up the level of education in the country. There is equally an urgent need to pursue more equitable income distribution if the anticipated goals of the cashless policy and subsequent adoption of electronic payment systems is to be realized. Akanbi (2012) concluded that economic analysts argued that the growing rate of income inequality in Nigeria has created a stratified society that can fuel distrust and hopelessness among the people in the disadvantaged regions of the country.

With the percentage of unbanked customers paralleling about 79% (King, 2013), it is already obvious that the cashless policy is targeted at an insignificant proportion of the population. Even within the existing bank customers, there are equally some customers who may not be willing to adopt the innovation for fear of insecurity, high risk perception, inertia, lack of trust, low compatibility and high level of complexity. Ogbuji et al. (2011) found that insecurity, illiteracy and customer inertia are the key causes of low acceptance and usage rate of e-purse in Nigeria. Wai-Ching (2007) found that security concerns is one of the factors that play an important part in determining the users' acceptance of e-banking services with respect to different segmentation of age group, education and income level. Okoye and Ezejiofor (2013) also argued that the major problems that might likely hamper the implementation of the cashless policy are cyber fraud and illiteracy. In so far as the level of education remains low and income distribution inequitable, there is very little that can be done to make the cashless policy and subsequent adoption and usage of electronic payment system successful except outright imposition. This will only boost the economy of Nigeria in the long-run, but the short-run incidence will be borne by the retail banks and more by the customers.

For fear of insecurity and increased risk perception, the number of unbanked customers might likely increase. This can truncate the financial inclusion strategies of the CBN and the current retail banks. This is because potential bank customers might prefer to hold cash rather than open bank accounts. Majority of the Nigerian population are unbanked and one of the greatest challenges in many jurisdictions like Nigeria's is financial inclusion. Further, given that a cross sample of large retail banks in developing countries indicate that transactions conducted at a bank branch are more expensive for banks when compared with the cost per internet banking transfer (EFInA, 2013), banks will not waste time in transferring the cost of cash transactions exceeding the stipulated threshold to the customers. Whereas bank customers who have no option will either adopt electronic payment systems and face its accompanying fraud risk or neglect the alternative systems of payment and face the cut-throat charges of cash transactions.

Conclusions and Policy Implications

Although the anticipated benefits of the cashless policy and how the adoption of alternative transactions system can assist in repositioning the Nigerian financial system by the apex bank have been massively publicized, this paper argues that Nigeria is not ready for the national rollout of the policy. No doubt, the apex bank has created some history, but the major demographic indices that may likely truncate the success of the cashless system in some regions in the country are age distribution, education and income level of the Nigerian populace. The proposed model further indicates that the likely behavioural outcomes of the consumers towards this innovation is a function of the age, education and income configuration of the potential and actual retail bank customers whilst these indices were proposed to have direct impact on consumers' resistance of the innovation.

It is therefore suggested that the implementation of the cashless policy should be limited to some major cities in the country where the population is dominated by wealthier and educationally privileged people. Unless this is done, a national rollout will be nothing more than an outright imposition. It is predicted that this may be counterproductive at least in the short-run. Increased risk perception can generate more insecurity concerns, lack of trust in the policy, customer inertia while depleting the relative advantage of the policy.

According to Luo et al. (2010), trust toward an innovation acts as an important mechanism to overcome risk perception. Reducing perceived risk is equally instrumental in boosting customers' perception of security, trust, relative advantage, compatibility, communicability and reducing customer inertia. The CBN can also mandate banks to collaborate with wireless services providers to jointly launch free trial alternative electronic transaction systems to encourage potential bank customers to get some hand on experience of the innovation prior to national rollout.

To achieve a better monitoring of banks, the CBN must work closely with extant retail banks to ensure that the charges arising from cash transactions exceeding the authorized threshold are remitted to the apex bank. If banks are bearing the cost of serving customers who insist on cash transactions and at the same time made to remit the charges arising from the excess cash transactions to the CBN; they will do a better job of sensitizing their customers to adopt cashless modes of transactions and preventing its inherent negativities by enhancing security of electronic transactions which will consequently boost customers' trust and reduce perceived risk and customer inertia. Bukola et al. (2013) argued that for many customers in Lagos, where the pilot stage took off, while the policy may have brought some convenience, the technological

hitches and security of funds have remained a major issue. Finally, unless the issues raised in this paper are contended with, a national rollout of the cashless policy may spell intractable challenges for SMEs in Nigeria.

Future Research Areas

The impact of income, education and age on trust, risk perception, security, compatibility, complexity, observability, relative advantage and customer inertia remains largely untested links in the literature. Future researchers can take on this agenda. Such research will place innovative firms in a better footing to predict the likely consumers' responses to their artifacts and better target their innovations on the right consumers' segment.

Finally, the proposed model is an untested conceptual configuration of the likely consumers' behavioral consequences of the cashless policy initiated by the CBN if a national rollout is implemented. To confirm the true causal posture of the links outlined in the model, there is need to test the model empirically. Interested future researchers are therefore enjoined to utilize a longitudinal design to test the proposed model because in any model in which causality is proposed, longitudinal studies provide stronger inferences.

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Proposed Model