A Qualitative Evaluation of the Factors Influencing the Adoption of Electronic Payment Systems (SMEs) by SMEs in Nigeria

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Abstract
No nation can compete in a global market without developing a versatile and veritable platform for competition especially in trade and commerce through electronic business (e-business) and electronic commerce (e-commerce). Not too long ago, the Nigerian government enacted a visionary policy code-named PSV20:2020 targeted at adopting information and communication technology (ICT) for proper management of the Nigerian economy as part of its effort to become a member of the twenty most economically developed countries in the world by the year 2020. To achieve this, the Nigerian government created the policy of a cashless economy in which all payments for goods and services especially in government businesses have to be done electronically. To make this policy work particularly among the small and medium enterprises (SMEs) in Nigeria, this study examines those factors that influence the adoption and use of electronic payment systems (EPS). A qualitative analytical approach has been adopted in this study. 4 Small and Medium Enterprise owners/managers and 2 officials of two different Banks – the Central Bank of Nigeria (CBN) and United Bank for Africa (UBA) – were interviewed. Data collected from the interview were processed and analysed. Few recommendations were made.

Keywords: Electronic payment systems, SMEs, ICT, vision 20:2020

1. **Introduction**

Over the years, Nigeria showed tenacity to develop and implement some strategic economic policies that could bring about a radical paradigm shift from cash-based to a cashless economy. This sustained tenacity gained a boost with the emergence of the Internet and globalisation and their associated new retail transaction channels such as the mobile and other

internet-based businesses such as electronic-commerce and electronic-business (e-commerce and e-business) which brought about the need for new payment instruments. These new payment instruments which are different from the existing traditional payment methods have not only been found to serve the purpose of consumers to make micropayments for their ordinary and micro-transactions but also are imperative for global competitiveness. The actual action started when in 2007 the Nigerian government enunciated a payment system geared toward an economic management policy intended to stimulate and drive e-commerce/e-business activities.

In Nigeria, the small and medium enterprises (SMEs) are estimated to comprise 87% of all firms operating in Nigeria (Babatunde and Laoye, 2011). In an earlier study, Ihua (2009) reported that the percentage contribution by SMEs to the total number of enterprises in Nigeria is about 97 percent. SMEs are also reported to employ over 60 percent of the labour force (Chamberlain, 2003), produce up to 50 percent of industrial output (Ihua, 2009), and absorb about 70 percent of industrial employment (Aina, 2007). These statistics are manifestations of the importance of SMEs in Nigeria as in other economies. These statistics also justify why the SMEs in Nigeria deserve a closer look in this study. The argument is that given the massive contributions of SMEs to the Nigerian economy, it is believed that providing information that will make them buy-in and support the cashless policy will undoubtedly portend huge success rate for the cashless policy programme as SMEs still remain a veritable force for policy achievement (Onugu, 2005). Therefore, this thesis explores ways to encourage the Nigerian SMEs to buy into the cashless policy of government through exploring the factors that influence EPS adoption.

Electronic payment (E-payment) has been defined to refer to the transaction of goods and services using electronic payment means such as computer networks, the internet and digital systems to transfer money electronically or digitally between two parties (Wyllie et al, 2010:5). The overall intention of the electronic-Payment system (EPS or e-Payment system) project was to benchmark the Nigerian payments systems in line with global best practices (CBN, 2010) and to ensuring national utilization and international recognition applicable in Nigeria. At the initial stage of implementation, the policy's focus was on the operations of the commercial banks and other financial institutions in relation to payments of federal government ministries, agencies and departments (MDAs). At that stage, the intention was to eliminate the delays in paying for government contracts caused by payments through cheques and cash which were causing disaffection among contractors and encumbering government businesses (Igudia, 2016). The success recorded encouraged the extension of the scope of operation of the policy to cover all facets of financial transactions

involving individuals and merchants and all tiers of government (federal, states and local) in Nigeria beginning from 1ˢᵗ January 2012.

As the policy is currently being implemented throughout the country, there are some concerns from several quarters regarding how the new payment systems policy is to be implemented and sustained in view of the serious physical infrastructural deficiency (Onwuka, 2009), high degree of fraud (Adeoti, 2011; Kyari, 2009), legal and probably attitudinal challenges (Akintola et al, 2011) among others in the country. They also wondered how the EPS policy would succeed in a country with high illiteracy level (Uzor, 2011) particularly in the Northern part of Nigeria, inadequate enlightenment on the likely benefits of EPS (Odumeru, 2013; Ayo and Ukpere, 2010), and poor and inadequate physical and telecommunication infrastructure such as irregular electricity supply and poor and slow internet connectivity (Irefin et al, 2012; Ifinedo, 2011; Gholami et al, 2010). It has been observed also that there is gross inadequate number of automated teller machine (ATM) and point of sales (PoS) terminals (Adeoti, 2011; Ebiringa, 2010) in the country generally.

Despite these facts and given that SMEs play pivotal roles in national development, there is little or no evidence in literature on the adoption and use of e-payment systems by SMEs in Nigeria (Ifinedo, 2011; Gholami et al, 2010; Ayo and Ukpere, 2010). As a result, it is difficult to determine whether or not SMEs in Nigeria are adopting e-payment systems. It is believed that conducting this study with focus on the SMEs, having established the overwhelming contributes of SMEs to the growth and development of Nigeria, will enhance the knowledge capacity and assessability of SMEs to e-payment infrastructure. Therefore, the objective of this study is to bridge the gap in literature by identifying the factors that influence the adoption and use of EPS among SMEs in Nigeria. The analysis employs the qualitative technique using conceptual clustered matrix.

This study addresses one fundamental research question: what are the major factors influencing the adoption of e-payment systems by SMEs in Nigeria? To address this question, this study has been arranged into five sections with this section as section one. Section two is theoretical framework and review of relevant empirical literature. Section three research methodology while section four is processing, reporting and analysis of the collected field data. Section five is discussion and conclusion.

2. Theoretical Framework and Review of Literature
2.1. Theoretical Framework
Literature is replete with different streams of research on the adoption of new innovation technologies in organisations worldwide. In the past 30 years, information systems and information technology (IS/IT) have received

diverse theoretical and empirical research attention (Premkumar et al, 1994). Prior research on IS/IT innovations adoption and diffusion have cited a large body of theories such as Diffusion of Innovation Theory (DOI) (Rogers 1962), Innovations and Organisations (Zaltman et al, 1973), Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975), Diffusion and Implementation Model (Kwon and Zmud, 1987), Technology Acceptance Model (TAM) (Davis, 1989), Technology-Organisation-Environment Framework (TOE) (Tornatzky and Fleischer, 1990), Theory of Planned Behaviour (TPB) (Ajzen, 1991), Perceived Characteristics of Innovation (PCI) (Moore and Benbasat, 1991), Tri-Core Model of IS Innovation (Swanson, 1994), Social-Cognitive Theory (Compeau and Higgins, 1995), Modified Technology Acceptance Model (TAM2) (Venkatesh and Davis, 2000), Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al, 2003), etc.

Notwithstanding the differential in perspectives, the consensus from literature suggests that there are positive impacts of IS/IT on the adopting organisation. Evidence abound suggesting that the introduction of new technologies into organisations be they small, medium or large has positively impacted the functioning and productivities of such organizations (Adeoti, 2005; Ovia, 2005; Leblois, 2004; Twist, 2001). The role played by SMEs in any economy seems to improve with the innovative use of ICT (Ojukwu, 2009). For example, milk production was reported to have greatly increased in India through the collection of milk from milk centres in Indian villages with the use of ICT by SMEs (Bhatnagar, 2003). Also, the introduction of an Internet Business Solution in the United Kingdom, France and Germany was reported to have accounted for the massive cumulative cost savings of about 9 billion Euros by the organisations that adopted and deployed the technology (Varian *et al,* 2002). In the same token, the growth of some Nigerian SMEs was said to be as a result of the introduction of the Integrated Business and Information Solutions (IBIS) (Ojukwu and Georgiadou, 2004). The introduction of information and communication technology (ICT) in the financial and banking sectors has also improved the efficiency of the banks and financial institutions worldwide (Ajiferuke and Olatokun, 2009; Adeyemi, 2006; Adeoti, 2005; Ovia, 2005; Akinuli, 1999). Thus, a safe and effective payments technology infrastructure is core to the financial stability of any country (CBN, 2011).

However, the use of different lenses in studying various technological innovations adoption and diffusion by these different theories and frameworks can be said to be overwhelming. These theories have been widely used to examine the adoption of various IT/IS innovations ranging from Website (Beatty et al, 2001) to spreadsheets (Brancheau and Wetherbe, 1990), and from e-commerce activities (Li et al, 2011; Wu and Wang, 2005;

Teo and Pok, 2003; Rashid and Al-Qirim, 2001) to e-payment systems (Nwankwo and Eze, 2013; Ifinedo, 2011; Ayo and Ukpere, 2010; Gholami et al, 2010; He et al, 2006) either at individual level (Agarwal and Prasad, 1997; Premkumar et al, 1994; Leonard-Barton and Deschamps, 1988) or at organisational level (He et al, 2006; Kwon and Zmud, 1987). Thus, the remainder of this session is devoted to discussing the relevant empirical studies.

2.2. **Review of Empirical Literature**

Generally, innovation adoption brings about changes in the organisation either in response to changes in the external environment or as a proactive action to influence the environment (Lertwongsatien et al., 2004). It is a way of doing something new which does not necessarily have to be a new phenomenon in terms of time of invention or discovery (Thong, 1999). Theories on technology innovation have found huge followership and support from several innovation research streams in predicting the how, why and at what rate innovation is adopted and diffused through social systems (Nwankwo and Eze, 2013).

Our review of literature reveals that results of these studies (especially using DOI and T-O-E) are inconsistent (Jeyaraj et al., 2006; Fichman, 1992; Tornatzky and Klein, 1982). The inconsistencies are attributable to several reasons including the context of research, interest of the researcher and type of innovation itself (Jeyaraj et al, 2006). For example, Tornatzky and Klein (1982) in a meta-analysis of 78 innovation studies found that three of the five innovation characteristics – compatibility, relative advantage and complexity – were relatively more consistently related to innovation adoption than observability and trialability. Also, in a meta-analysis of 135 innovation studies, Jeyaraj et al (2006) found that only 15 out of 24 studies found relative advantage to be a predictor. Inconsistent results were also found for complexity (9 out of 18 studies), compatibility (10 out of 18), observability (4 out of 6) and trialability (1 out of 2). Jeyaraj et al (2006) also reveal that some of the innovation characteristics are more investigated by researchers than others, the least investigated being trialability. Literature reveals that most of these theories have been more extensively tested in developed than developing countries (Molla and Licker, 2005). Hence, the empirical studies reviewed in this study are those relating to developing countries.

Some of the factors identified in literature relating to developing countries usually tend to reflect the level of development of some national infrastructure in those countries (Molla and Licker, 2005; Looi, 2005). For example, Travica (2002) listed customer e-commerce propensity, e-payment systems development, software industry, telecommunication delivery and

transportation as some of the factors impacting electronic commerce (e-commerce) adoption and diffusion in Costa Roca. Some of these factors particularly those relating to infrastructure have been found to mostly impede information technology (IT) adoption in developing countries. The adequacy or otherwise of national infrastructure such as electricity supply and internet connectivity in a country plays vital role in e-payment adoption and usage (EIU, 2006). For example, inadequate supply of electricity and telecommunication infrastructure has been found in literature to determine not only the adoption of a technological innovation such as e-payment but also the extent to which such technology can be used in developing countries such as Nigeria (Chiemeke and Evwiekpaefe, 2011; Onyema, 2011; Akintola, 2011; Gholami, et al, 2010; Akpan-Obong, 2007; Folorunsho et al.; 2006; Adenikinju, 2005). Ihua (2009) found that the state of electricity supply has posed a major challenge and hindrance to business activities in the Sub-Saharan Africa (SSA) and Nigeria in particular. Specifically, Adesola and Adeyinka (2008) posit that since internet economy strives on infrastructure, it is very unlikely to succeed in Nigeria due to "epileptic" and worsening electricity supply in the country" (p. 9). Other writers such as Kim et al (2009) identified consumer perceived trust and perceived security as positively related to e-payment system adoption and use among Korean e-payment consumers. Hanzaee and Alinejad (2012) in a similar vein also found that consumer perceived security and perceived trust among others influence e-payment systems adoption and use in Iran. Ozkan (2010) identified perceived risk, perceived trust, and perceived security among others to influence customers' intention to adopt and use e-payment systems in Turkey.

Studies also show that some factors can influence IT innovation adoption and usage across countries and cultures at different levels of development. For example, Beck et al (2003) identified IT infrastructure, business concentration, and government regulations as some of the factors that influence IT diffusion among SMEs in developed countries such as Germany, Denmark, France and USA just as they have variously been found to also influence IT adoption and diffusion in developing countries. Other factors that have been investigated and found to be statistically significant in predicting influence e-payment systems adoption and use especially in developing countries include: perceived risk, anonymity, privacy, applicability, authorisation, convertibility, efficiency, interoperability, reliability, scalability, perceived security, perceived trust, usability, traceability and linkability (see Abrazhevich, 2004; Medvinsky and Neuman, 1995, Harris et al, 2011; Lin and Nguyen, 2011; Kim et al, 2010; Ozkan, 2009; Rigopoulos and Askounis, 2007). For example, perceived security and trust were found to positively influence e-payment systems adoption and

degree of use by Korean consumers (Kim et al, 2010). In their study, Lin and Nguyen (2011) found that perceived ease of use, perceived usefulness, perceived risk, and information significantly impacted the consumers' adoption and usage of e-payment systems in both Taiwan and Vietnam.

He et al (2006), Ifinedo (2011), Harris et al (2011) and Gholami et al (2010) are some of the few researchers who have used either TOE or DOI or their modifications to investigate e-payment systems adoption and usage in different developing countries. He et al (2006) examined five innovation characteristics: relative advantage, complexity, compatibility, trialability and observability using the classical DOI. Results of this study revealed that only compatibility significantly influenced online e-payment adoption by Chinese companies. One of the drawbacks of the study was the low response rate of 7.3% which tended to question the reliability and validity of the study (Chau and Tam, 1997). On the other hand, Ifinedo (2011) employed an integrated framework of TOE and TAM. He found that perceived usefulness, organisational readiness, top management support, and IS vendor support positively influenced the intention to expand the use of e-business payment systems in Nigerian small firms. However, the study failed to focus on the initial adoption stage which needed to occur before we can talk about expansion (Rogers, 2003). Furthermore, the study recorded a low R^2 of 21% signifying an overall poor construct validity (Chau and Tam, 1997). Study by Harris et al (2011) found that flexibility, functionality, data management, privacy and perceived security are significant predictors of perceived e-payment systems use by firms in Malaysia. Like Ifinedo, this study did not seem to focus on the essential aspect of initial adoption stage before delving into the extent of use.

All the findings aggregately illustrate that several varying factors have been tested and found to influence technology adoption and use in developing countries. Multiple varying factors have been found to influence technology adoption and continuous use at the organisational level. Thus, one can identify certain specific factors that are more closely related – than others – to this study's context (Li et al, 2011) – Nigeria – and the decision object (Li et al., 2011) – the e-payment technology. The first factor that comes to mind is the infrastructural challenges bedevilling Nigeria and yet which are *sine qua non* to e-payment systems adoption and continuous use. The second is the issue of security and trust. Security of adopters' money and their payment information during transaction online has to be assured to ensure that SMEs do not only adopt but continue to use e-payment. Nigeria in recent past has had its fair share of name-calling regarding different shades of online fraud which her citizens have been claimed to be involved in including hacking and advanced-free-fraud popularly called 419. The subsistence of such illicit activities is very much likely to affect the success

in e-payment adoption among SMEs in Nigeria. With security, trust can be built. But without both, no SME will adopt or use e-payment systems. Other factors relevant to this study's context and technology include government policies which have not been consistent due to the unstable government policy direction in Nigeria. There is also the issue of cultural practices that may be peculiar to Nigeria. Other factors identified from literature include: perceived benefits, complexity of the e-payment technology given the low literacy level in Nigeria and the financial capacity of small businesses in Nigeria. Since all of these variables are relevant to the Nigerian situation and the e-payment technology, we included all of them and other relevant factors found in literature in our interview guides.

3. **Research Methodology**

The data used in this study came as an excerpt from my PhD Thesis. Four SMEs were interviewed to provide a more fine-grained analysis and obtain socially constructed meanings of EPS adoption and usage by SMEs in Nigeria from the subjective standpoints of the interviewees (Rocco et al, 2003) in their work places (Creswell, 2003). It also helped to give insights into the dynamics of e-payment systems adoption and usage by SMEs thereby helping to explore the potential implications in terms of actions that SMEs and other stakeholders could take to influence adoption and usage.

An interview guide was drawn up as an outline of the key areas to be explored during the interviews. Before conducting the main interviews, the question guide was screened and pre-tested on two academics in one of the Universities in Nigeria who are experts in information systems/technology research with long years of experience in conducting research interviewing in Nigeria. The pre-testing was intended to refine the format of the questions to ensure they are appropriate for the respondents in terms of targeting their level of understanding and experience in using e-payment technology. For example, the experts suggested that questions should be characterised based on the relevant themes – technology, organisation, environment and individual characteristics – without being too technical to serve my purpose. The questions were then restructured to reflect those themes relating to literature as reviewed.

3.1. **Selecting the Respondents**

Only 2 out of the 53 owners/managers who initially agreed to be interviewed accepted the interview invitation. Due to access difficulty at this stage, the snowball technique, a non-probability sampling (Saunders et al., 2007) was adopted. The process started with the researcher accessing the two members of the target population who accepted to be interviewed to suggest their peers (Babbie, 2010a). The two managers did not only recommend but

also persuaded other managers/owners to enlist. The process yielded great success as 18 SME owners/managers including the 2 earlier mentioned eventually accepted to be interviewed. Letters were written and delivered by hand together with the attached interview guides to all 20 owners/managers of SMEs explaining the objectives of the project, the role of the participants, the process and their rights before, during and after the interview, the demand on their time, and the benefits of the research endeavour to their organisations. Only 7 out of the 20 SMEs presented themselves for interviews. Due to time and resource constraints and following our set criteria, only 4 out of the 7 SMEs qualified to be interviewed eventually. The interview proceedings were tape recorded after securing permissions from participants. The interviews of each of the participants lasted between 46 and 56 minutes. Field notes were also taken to support the tape recording.

Table 1: **The Participating SMEs**

SMEs (Pseudo Names)	Business Lines/ Activities	Adoption and Usage Status	Adopter Category, Size of Firm, and Extent of Usage
A. FNC Ltd	Estate Management Consultants and Fumigation	Adopted and still using	Early adopter. The owner is a male and the respondent. He is a University first-degree holder in Estate Management The firm was established in 2004 and adopted EPS technology in 2011. With a total number of 25 workers under its employ, the firm is medium-sized. At present, the firm uses EFT and PoS only and is adjudged as a medium-breadth and moderate-volume user.
B. PT Ventures	Civil and Electrical Engineering/ General Services	Adopted and still using	Early majority. A male respondent who also doubled as the owner of the firm who is a university graduate of one of the Nigerian universities with a degree in Electrical and Electronic Engineering. The firm came into existence in 2000 but adopted the EPS technology in 2010. It is employing 32 workers and thus a medium-sized firm. At present, the firm uses all five (EFT, EC, MP, POS, and ATM) channels for transactions. Though this firm is an extensive-breadth user, it is, however, one of the narrow volume users of EPS technology because it mostly uses the technology at least once in a month.
C. KN Stores	Grocery/ Super-market	Adopted and still using	Late majority. A female. An HND holder in Business Administration, a sole proprietor with 7 employees including van-drivers and shop-staff or sales girls/boys. The firm came into existence in 2011 and adopted EPS in the same year (2011). Presently using EFT, PoS, EC and MP for her business transactions. This firm is a wide-volume and an extensive-breadth user of EPS technology.
D. BN Enterprises	Computer Training, Maintenance and Services	Adopted, used and abandoned majority of channels	Early adopter. A male respondent and an owner. He holds a diploma certificate from one of Nigeria's Polytechnics. The firm came into existence in 1999 but adopted the EPS in 2008. Initially, the firm adopted and used four of the channels – MP, ATM, PoS and EFT for business transactions. Later, the firm restricted usage to only EFT channel.

The characteristics of the respondent SMEs are included in Table 1. Three SMEs operated in the services sector and one operated in the wholesale/retail distribution sector. The wholesale/retail SME is engaged in the grocery/supermarket sale while the three service SMEs each operated in distinct markets and offered unique products/services. A variety of organizational contexts within service delivery were represented in the three cases. For reasons of anonymity, the four SMEs are represented by pseudo identities as acronyms with their real business activities, adoption, and extent of usage status. After transcribing the interviews, the researcher proceeded to the coding stage.

The transcribed documents were then sent to the 4 respondents for cross-checking to ensure that what was recorded was not only correct but also conveyed the exact message as intended. All 4 SMEs approved the transcripts. The transcribed materials were then coded. The qualitative analysis process employed in this study was adapted from Miles et al. (2014). In the first-cycle coding, we highlighted words, phrases, and sentences to represent concepts and opinions of the respondents. The issues addressed in the interviews were based on the initial list of concepts developed in the literature review and research questions. Applying the Miles and Huberman (1994) analytic technique, all four different graphic matrices representing the reduced data chunk of each of the four SMEs were condensed into one conceptually clustered matrix containing relevant categories and themes. For example, all codes under the same category based on the initially identified concepts such as perceived benefits, perceived security and so on in each of the four graphs were harmonised under similar themes. Also, all codes within and between matrices indicating a similar meaning were put in the same category. For example, 'hazards associated with cash', 'risky e-payment systems' and 'risks of carrying huge physical cash' were grouped under the concept 'perceived security.' Emerging related topics not based on the original concepts, for example, publicity, bank charges, increased the cost of doing business, no bank accounts by suppliers and observability were categorised into a different theme – exploration and justifications for the unexpected results. This category was subdivided into "factors without influencing powers (Why?)" and "factor with inverse relationship (Why?)".

Similar categories or topics were merged for coherence. For example, security and risk category was merged with safety category to form perceived security category. Also, bank charges and indiscriminate bank charges were merged to form Bank service charges. Physical infrastructure was retained while national infrastructure was deleted as both represent the same thing. These efforts were to ensure that the emerging categories were consistent with the suggestions by Dey (1993) that categories must be

meaningful to both the data in use and other categories derived from the data in use. The assembled chunks of materials were then re-sequenced (Gallivan, 2001) and transformed into themes as suggested by Miles and Huberman (1994).

Following the second order coding for the SMEs, the analysis focused on comparing and contrasting the concepts and themes that emerged within each of the respondents. To facilitate comparison among concepts, Miles et al. (2014) propose two distinct methods: either construct a table or use conceptually clustered matrix. While the former is most appropriate in qualitative surveys, grounded theory, and phenomenological studies, the latter fits most appropriately into qualitative studies such as this which attempt to address some clear cut concepts emerging from literature. According to Miles et al. (2014:170), "a conceptually clustered matrix charts participant's varying perspectives about selected concepts" and works particularly well when dealing with a case that is represented by an individual just as in this study. Therefore, the conceptually clustered matrix was employed to compare the concepts as illustrated in table 2 to identify emerging patterns of e-payment systems adoption and usage among the four SMEs. These themes would underscore the adoption and usage similarities and differences among the four SME adopters.

Table 2: Conceptually Clustered Matrix: Facilitators and Inhibitors of E-Payment Systems Adoption and Usage Among SMEs in Nigeria

SMEs	Facilitators of EPS (Reasons for Adoption and Usage: Evidence from Interviewees)	Inhibitors of EPS (Challenges of Adoption and Usage: Evidence from Interviewees)	Exploration and Justifications for the Unexpected Results	
			Factors without Influencing Powers (Why?)	Factor with Inverse Relationship (Why?)
A: FNC Ltd	1. **Publicity:** *"... There was plenty of publicity through the electronic and print media including handbills and posters ...." "So, I got ideas of what I, I mean my firm, can benefit if it adopted EPS."* 2. **Expected Benefits:** *"Well, these are internal management issues like being able to monitor personally my accounts to avoid and perhaps stop stealing and do business with my partners at the push of a button".* 3. **Government Intervention**: *"Government activated enabling laws on fraudulent practices ... through the EFCC... With these actions of government, internet crimes have been abating greatly in the country, and all these encouraged my firm and me to use continuously our adopted channels even till date."* 4. **Safety:** *"The safety and security of my money were very paramount in my mind. ...the information that it is very safe to use and that money will be safe and secured, I embraced it."*	1. **National Infrastructure: "***There is the issue of regular internet service/network failures. Another very serious problem is the issue of epileptic power supply in Lagos State."* 2. **Lack of Security:** *"The greatest challenge facing or militating against the regular usage of EPS ... is fraud. Sometimes, unscrupulous bank officials would collude with outside criminals to defraud customers using the ATM. ... ATM will indicate that it has dispensed money to you even when it has not done so. ... such technical malfunction can be tied to fraud. There is the issue of cloning of payment cards by fraudsters."* 3. **Indiscriminate bank charges: "***The other is the issue of indiscriminate charges on user's accounts."*	1. **Gender:** *"Gender did not play any role at all in my firm's decision to adopt the EPS. ... what is the difference between man and woman in the needs curve?"* 2. **FFR:** *"Financial resources did not influence our adoption decisions. We already had all that it takes to adopt and use the EPS."* 3. **PHYINF:** *"I'm sure the majority of us did not know what to expect in terms of physical infrastructure."* 4. **Culture:** *"Culture did not have a place in my consideration .... Culture to me is neutral in this kind of technology because it borders on business and money."*	**Business Pressures:** *"I believe that the explanation for this cannot be too far from what I have said earlier. It can be linked possibly to the fraudulent activities perpetrated on the internet by scammers using EPS ... Everyone thought that the process of using EPS to make payments can be manoeuvred by any person to perform illegal acts. So you can see that even if there was an increase in competition, less and less SMEs were willing to adopt the channels ..."*
B: PT Ventures	1. **Expected Benefits:** *"We had several reasons for adopting EPS in my firm with the most important being the expected or accruable benefits. ... The process of paying for goods and services has been made very simple, fast, convenient and easy. "* 2. **Government Intervention:** *"I was initially discouraged by the regular power outages which quite often led to the loss of data on the system and sometimes cause damage to the systems. But I was encouraged to adopt and use the systems as power is gradually being stabilised through the recent actions of government".* 3. **Social/Business Pressure:** *"So with several firms in the same industry and/or business line around, we needed to flow with the tide in other not to lose*	1. **Bank Charges:** *"There are bank charges that are difficult to determine and sometimes look spurious."* 2. **PHYINF: "***There is the issue of poor internet service provision ... Quite often, there is power outage leading to loss of data on the system .... And again, the ATMs at times develop fault ..."* 3. **Increase Cost of Doing Business:** *"... this type of bank charges adds to the cost of doing business which is enough to discourage people from using EFT ..."* 4. **Security:** *"There has been the issue of trust in the banking staff. ... Bank staff member have been found to perpetrate fraud within the system either directly or with outside collaborators ...."*	1. **Gender:** *"Gender did not play any role".* 2. **FFR:** *"It was practically free to adopt the EPS. There was no financial commitment of any kind from my firm. However, when I compared these charges to the risk of losing money to armed robbers, I would say it is a necessary sacrifice to pay such charges."* 3. **PHYINF:** *"So at adoption proper, nobody considered these critical infrastructures because we were made to believe that they were in abundance."* 4. **Culture:** *"I can say unequivocally that culture did not play any role in our decision to adopt the EPS... I think there is a blend of different cultures in Nigeria. Technology has no cultural*	**Business Pressures:** *" Based on government initiatives, most of the firms formed cooperatives to be able to access government funds. These cooperatives insisted on doing business on a one-on-one basis or physically and only accepted cash rather than through EPS. Even though government's move and intervention created a higher level of competitiveness among the SMEs, the rate of EPS adoption was not*

	our suppliers. So, in a way, competitive pressure affected me positively." 4. **Safety:** *"We also adopted to avoid violent robberies by armed robbers."* 5. **Observability:** *"Indeed, I adopted not quite too long. I adopted based on what I see my friends enjoying as a result of e-payment transactions."*		*barriers. Technology transverses all cultural domains."*	*affected, to say the least."*
C: KN Stores	1. **Benefits**: *"Indeed, generally, it allows us to achieve more with less. We adopted it b/c it makes payments for goods and services easy and in the most convenient manner. Society too has also become safer."* 2. **Safety**: *"society too has also become safer. We can now sleep in our houses with our two eyes closed."* 3. **Business Pressure**: *"Well, I can say that I adopted these channels b/c of fear that I might lose my customers and suppliers if I am not able to make transactions easier for them as people have been made to understand and believe."* 4. **Government Interventions:** *"I will say such interventions have helped in swaying many people including my firm to adopt and use the e-payment".*	*1.* **Security & Risk:** **"***There was and still is the issue of fraudulent activities through the e-payment channels."* 2. **PHYINF:** *"One of the problems we have been facing since this period of adoption and usage of EPS in Nigeria is the regular power failure incidences experienced all year round. Another issue we have been battling with ...has been that of internet network failure and slow speed browsing which has been frustrating."* 3. **No Bank A/C by Suppliers:** *"One other problem is that sometimes you want to buy products from a supplier, but the supplier does not have an account."*	1. **Gender:** *"Although EPS is a technology, it has assumed the role of physical cash in business transactions".* 2. **FFR:** *"When we consider both the overt and covert risks and costs associated with physical cash business undertakings, one will begin to appreciate that such costs [bank charges] are nothing to write home about."* 3. **PHYINF:** **"***Actually, their short supply negatively affects the rate...channels are used..."* 4. **Culture***: "My concern was more about how to acquire or choose the channels that are flexible enough to facilitate transactions and help my business to grow."*	**Business Pressures:** **"***The problem was not with the policy itself but how fraudsters invaded the whole thing making people lose their money. I'm sure this affected the rate at which people were willing to adopt and use the channels."*
D:BN Enterprises	1. **Benefits:** *"You talk of ... transfer of funds. I could transfer money into supplier's account and pay employee salaries within a twinkle of an eye s/he received it. I can say that my firm was also able to monitor our payments or transactions and account."* 2. **Safety**: *Also, b/c of the problem of armed robbery I was encouraged to use the e-payment then."* 3. **Conformity**: *"... Also, CBN and banks put pressure on us to use it."* 4. **Competitive Pressure**: *"They [suppliers] urged me to adopt it initially because it was very easy to transfer money through the e-payment channels to them compared to carrying and paying cash or with a cheque. ... If you don't adopt, you might lose your customers and suppliers to your competitors."*	1. **Lack of Security:** *"But the challenge which drove us almost crazy and made us abandon the use was the fraud. The major reason ... Uhm ... I stopped using EPS was a lack of security, and so there was a lot of criminal activities perpetrated by those criminals."* 2. **Bank Charges:** *"We are struggling to survive in this business. Do we allow the little money we make as profits to be sipped or filtered away through bank charges and running generators?"* 3. **PHYINF:** *"So, poor internet and power infrastructures are some of the factors hindering the adoption and usage of e-payment systems."*	1. **Gender:** *"Gender did not affect or influence my adoption or usage decisions".* 2. **FFR:** *"Could, not Elm afford the kind of bank charges we were made to pay."* 3. **PHYINF:** *"So, poor internet and power infrastructures are some of the factors hindering the adoption and usage of EPS."* **(DK)** 4. **Culture:** *"Culture did not play any role whether in adoption or usage. E-payment is not related to any culture."*	**Business Pressures:** *"As I mentioned earlier, because of fraudulent activities that were perpetrated using the e-payment, the competitors were even afraid that ah if I use e-payment for business, people will manipulate the system to commit some illegalities."*

Source: From field work

4. **Findings of the Interview and Discussion**

Based on the available chunks of data, five themes emerged (see table 3) providing five discrete patterns which will help us to properly analyse the findings.

Table 3: **Key Themes/Categories for Understanding EPS Adoption and Usage by SMEs in Nigeria**

Themes	Description
Theme 1	Perceived Benefits and other Benefits-Enhancers
Theme 2	Perceived Safety and Security
Theme 3	Competitive Pressures
Theme 4	Physical Infrastructure, Contextual Influences (Firm Level Factors i.e. Financial and Slack Resources) and Organisational Policy
Theme 5	Gender and Culture Neutrality of E-Payment Technology

4.1. **THEME 1: Perceived Benefits** *and other Benefit-Enhancers*

Although perceived benefit was differently presented by the four respondent SMEs, there was however consensus among participants that perceived benefits are the major reasons they adopted and continuously used the e-payment systems. The most commonly mentioned and perhaps most important perceived benefits to the four participating firms are convenience, speed and ease of doing business. Others included: to monitor/control, increase productivity level and bring down cost of production (efficiency). The benefits-enhancers of adoption and usage of EPS discussed included: favourable government interventions and conformity. The participants variously argued that the speed and convenience of doing business, ability to control and monitor both business transactions and employees activities, and stem fraudulent activities within and outside the SMEs were some of the expected benefits for adopting and using EPS. As pointed out by one of them:

> "*We had several reasons for adopting EPS in my firm with the most important being the expected or accruable benefits.*" [PT Ventures]

Based on such expected benefits, the management of these firms committed and deployed all necessary scarce resources to ensure successful implementation. FNC Ltd, for example, saw EPS as a novel solution model to the internal management issues of the company which included "*ability to monitor transactions and employees.*" For BN Enterprises: "*My firm, initially adopted EPS because of the enormous benefits we thought we could get from using the technology.*" KN stores also initially adopted EPS because it expected that EPS could help to improve its productivity and efficiency levels. Like the other three SMEs, PT Ventures initially adopted the EPS technology to "*ease the process of doing business, monitor the firm's bank accounts and check fraudulent practices and safety and security*

of transactions and money." The same set of expected benefits is the reason why FNC and others have continued to use EPS technology in their operations. According to FNC respondent:

> *"These same expected benefits have also made my firm to continuously use the channels we have adopted as EPS is serving us as expected notwithstanding some of the setbacks."*

By adopting the EPS technology in some of its transactions, FNC Ltd is today able to monitor all its financial inflows and outflows. Payments made to and by the company using the two adopted channels (EFT and POS) which initially were difficult to effectively monitor are now easily traced directly to the appropriate staff involved in such transactions. This is therefore making the staff of FNC Ltd more accountable.

By strengthening some of the existing laws on financial crimes and empowering the relevant agencies such as the EFCC and ICPC to fight cyber crimes, government intervention has facilitated EPS adoption and usage. Government also re-jigged infrastructure including the privatisation of the nation's power sector for efficiency as reflected in the evidence provided by the four participating firms. The stopping of charges initially imposed on card holders/users by commercial banks for using payment cards at ATM terminals not owned by the card issuer (the bank) was another positive intervention of government that encouraged extent of EPS usage. This intervention improved the regularity of inter-bank card usage by firms across ATMs terminals. It also caused the number of interbank ATM users to increase by many more times than before the intervention. Apart from that, government also ensured that payment cards used in Nigeria have special features that make their cloning by financial miscreants very difficult thus making payment cards in Nigeria one of the safest in the world. As acknowledged by one of the participants:

> "*I will say such [*government*] interventions have actually helped in swaying many people including my firm to adopt and increase our use of e-payment. These positive interventions apart from influencing me like many others to initially adopt and continue to use the EPS also are signs that it [*government*] is likely to do more in helping to completely eliminate the menace of these criminals sometime soon*" [KN Stores]

Based on the submissions of the four respondents, it can be concluded that though perceived benefits facilitated both initial adoption and extent of usage, the strength of influence is much stronger for initial adoption than it influenced the extent of use by SMEs in Nigeria. Other facilitators

like government intervention enhanced usage much more than adoption. Thus, it is evident that perceived benefits played a primary role in influencing the original adoption of the e-payment technology while they assumed only a secondary role in the extent of use.

4.2. *THEME 2: Perceived Safety and Security*

Safety and security concerns in an environment characterised by relative high levels of criminality encouraged e-payment adoption but limited the extent of its use among SMEs in Nigeria. Apart from the ease, convenience, monitoring and speed of doing business, another critical aspect of perceived benefits is safety and security. Safety and security can be classified into two categories – internal and external. Internal security and safety concern crimes/fraud by employees while external security/safety concern crimes/fraud by people outside the employ of the firms. The need for safety and security of life and money spurred all four participating SMEs to adopt and continue to use the EPS. FNC Ltd, for example, submitted that it adopted EPS because it was expected to help monitor its employees and "*perhaps stop them from stealing*". One of the safety benefits of EPS implementation is the reduction of cash-related armed robbery incidences in Nigeria. Ruminating on the previously rampant armed robbery cases in the country, all four participating SMEs unanimously agreed that e-payment technology has actually brought peace of mind and helped to reduce armed robbery cases in Lagos state. In line with its "*safety first*" business philosophy, PT Ventures wasted no time in adopting and using the EPS as soon as it was practically possible. The company's transactions history revealed that the firm had the history of moving large physical cash in most of its business transactions thus making it and its staff most vulnerable to attacks by armed gangs. But with e-payment technology, PT Ventures is now able to avoid such a risk. Even the "*society has become safer*" (KN Stores) as armed robbery incidences plummeted to its lowest ebb with the implementation of EPS initiative.

Unfortunately, however, the introduction and implementation of EPS brought in its wake another form of security and safety challenges in financial/business transactions. Indeed, perceived lack of safety and security of transactions on EPS channels greatly inhibit not only initial adoption but also the extent of EPS usage. From the evidences provided by the four participants, it is obvious that there are some unscrupulous bank officials, who either personally or in collaboration with criminal elements outside the banks, divulged bank customer's personal data to defraud unsuspecting bank customers through ATMs and POS terminals. According to **PT Ventures**:

> "*There has been the issue of trust in the banking*
> *staff. ... Bank staff members* [**members**] *have been*

> *found to perpetrate fraud within the system either directly or with outside collaborators using the ATM machines....”*

The case of criminals acting from outside the banking industry to defraud unsuspecting EPS users initially festered either because of non-existence of relevant extant laws to checkmate such vices or weak execution of such laws where they existed. Criminals were reported to clone payment cards at the ATM and POS terminals and use same at any ATM or POS terminals anywhere. This also initially exposed the weak technological capacity of the country to secure the EPS platforms from criminals. Several e-payment users lost huge sums of money to scammers who are both within and outside the banking industry through e-payment channels (especially the ATM and POS which have high risk profiles). For example, although BN Enterprises, like the other three firms, initially adopted the e-payment because of perceived safety and security of its money and transaction information, it has long found to its chagrin that EPS is not as safe and secure as it was initially thought to be. BN Enterprises, like several others (but not including the other three participating SMEs), became a victim of fraudulent activities of criminals through the e-payment channels which led the company to abandon the use of majority of the e-payment channels it initially adopted and used. Thus, perceived lack of safety and security, as related by this participant, inhibited its further adoption and continuous use of EPS channels by SMEs in Nigeria.

> *“But the challenge which drove us almost crazy and made us to abandon the use* **[of e-payment channels]** *was fraud. Actually, the major reason ... ehm ... I stopped using EPS was lack of security and so there was a lot of criminal activities perpetrated by those criminals.”* [**BN Enterprises**]

Due to the great damage fraud and other criminal activities have done to the finances of firms and psyche of firm owners, it is difficult to erase the fears of insecurity and lack of safety among SMEs concerning fraud on e-payment channels even when the situation may have ameliorated. Consequently, BN Ltd submitted rhetorically thus:

> *“At any rate, I’m reconsidering my position but before I do that, I need to very seriously reassess the situation properly and assure myself that nothing will go wrong this time around.”* [BN Ltd]

Given the overwhelming evidence from the four participants, it can be concluded that while perceived safety and security stimulate adoption,

lack of safety and security do limit not only further initial adoption but also limit to a greater extent the continuous use of e-payment channels.

4.3. *THEME 3: Competitive/Environmental Pressures*

This study shows that pressures from competitors, suppliers and trading partners influence the adoption and extent of use of EPS by SMEs. All four respondents submitted that pressures from competitors, business partners and suppliers can facilitate EPS initial adoption and extent of usage among SMEs in Nigeria. From the general accounts of the four informants, the *"fear of losing suppliers, business partners and/or customers"* to competitors stands out as one of the major reasons they initially adopted and continue to use EPS in Nigeria. For some, the pressures came from the suppliers while for others the pressures came either from the customers or business partners. For example, BN Enterprises submitted that:

> "It [**Competitive pressure**] *was one of the reasons I personally adopted and used the e-payment especially for our suppliers in the states outside Lagos. They* [**suppliers**] *urged me to adopt it because it was very easy to transfer money through the e-payment channels to them compared to carrying and paying cash or with cheque.* "

PT Ventures and BN Enterprises adopted the technology because they believed that "suppliers, to an extent, are more likely *to prefer those firms using fast and convenient business strategies*" [PT Ventures]. Both respondents submitted that "*with several firms in the same industry and/or business line around, we needed to flow with the tide in order not to lose our suppliers, business partners and customers*" [PT Ventures]. To them "*there was need to do everything possible to encourage and satisfy our suppliers and business partners and save their real business time*" [BN Enterprise].

In the same vein, the decision to adopt the EPS and a particular EPS channel by FNC Ltd and KN Stores was influenced by the nature of their businesses and geographical spread of their business partners. They are also involved in imports. According to **FNC Ltd**:

> "... *I adopted the internet payment systems mainly because I wanted to satisfy my customers and suppliers. So, to continue to retain my suppliers, customers and business partners I personally had to adopt the EPS especially for those of my suppliers, customers and business partners who are outside Lagos State and outside the country.*"

In the same vein, KN Stores argues: "...*I adopted these channels because of the fear that I might lose my customers and suppliers if I could*

not make transactions easier for them as people have been made to understand and believe." From the analyses, this study shows that competitive pressures facilitate both initial adoption and extent of use of e-payment systems. But in terms of degree of impact, the analyses shows that competitive pressures have greater influence on the continuous use of e-payment technology by SMEs in Nigeria than it has on initial adoption.

4.4. *THEME 4: Physical Infrastructure, Contextual Influences (Firm Level Factors i.e. Financial and Slack Resources) and Organisational Policy*

Critical challenges facing SMEs in Nigeria include inadequate national physical infrastructure, lack of financial and slack resources and restrictive organisational policies. One of the critical factors identified by all the four participants inhibiting the extent of EPS usage by SMEs in Nigeria is lack of adequate national physical infrastructure (PHYINF). In general, national physical infrastructure is an amalgam of a nation's physical infrastructures such as transportation, rail networks, roads, electricity, and communications, among others. But in this study, PHYINF is treated through the lenses of the four participants who reasoned that in respect to e-payment technology, electricity supply and internet services are most apt. Despite government efforts to improve power supply in Nigeria by increasing funding to the sector and changing ownership structure, the concomitant improvement in service delivery by this sector to say the least has remained minimal. The second component of PHYINF is the internet service. This sector is dominated by privately owned telecommunications companies which provide internet services to the nation. Vital as these two infrastructures to the effective implementation of e-payment technology may seem, the two services have both remained in acute short supply in Nigeria. However, the short supply of these two vital infrastructures did not influence the decisions of any of the four participating SMEs to adopt EPS. But, on the contrary, the sorry state of the two infrastructures inhibits the extent of EPS usage. As submitted by PT Ventures:

"*The major problem limiting us from effectively using our adopted EPS channels was power* supply issue".

It is true that for a technology such as the EPS to work at all and effectively too, *"there must be regular power supply. But this has not been the case in Nigeria."* As power limits extent of usage, irregular and slow internet supply also does. PT Ventures observed that:

> *"there is the issue of poor internet service provision by MTN, Glo, Etisalat, etc. for one reason or the other."* This could be attributed to either *"the volume of demand on their limited facilities or inadequate infrastructure or facilities..."*

At the core of a firm's ability to adopt and use any new technology is its financial resource capability. Under normal circumstances, there is no investment without financial commitment more so in technology. Although all four participants agreed that financial resources did not influence their adoption decisions because they had the necessary infrastructure needed to adopt the EPS, their usage decisions were however influenced by financial resources. Firms' adoption decisions were not influenced because internet banking started in Nigeria long before the introduction of e-payment technology. The infrastructure required to operate the internet banking is also what is needed to operate the e-payment technology. Obviously, all four SMEs already had all that was needed to adopt the EPS given the submission of FNC Ltd thus:

> *"In fact, before 'cashless Lagos' policy, we have always had computers and internet facilities for some basic administrative functioning or processes... We also had the telephones and mobiles for the use of the office staff. So, adopting EPS did not require money."*

Just like FNC Ltd, all the other three participants also adopted the EPS without any fresh financial commitments, the reason being that the banks supply the POS machines to firms for free. The ATMs are used at no cost while payment cards are freely distributed to bank customers. This is in addition to the fact that firms like FNC Ltd, KN stores and PT ventures already had computers installed in their offices with which they had conducted internet banking activities and other businesses.

But unlike the adoption decision, the usage decisions of the four firms were influenced in various ways. Evidences from them demonstrated that firms' financial resources do influence the extent of e-payment systems usage among SMEs in Nigeria. For PT ventures and BN Enterprise, their limited extent of usage of the adopted e-payment channels is based on their limited slack or firm's financial resources as they could neither afford an alternative power source such as generators and the cost of regular

maintenance of same nor afford monthly internet bundle subscription which cost has continued to be upwardly reviewed by the providers over the years. But the extent of usage of KN Stores and FNC Ltd were not influenced by these factors possibly because of their comparatively better financial resources positions. To avoid the effect of unstable electricity supply on the smooth running of the SMEs, KN Stores and FNC Ltd bought electricity generators as alternative power source to bridge the supply gap. Unfortunately, this, in effect, created a fundamental cost issue – increased operational costs – for the firms. For PT ventures and BN Enterprise, this additional cost of doing business

> *"is enough to discourage people from using EPS especially for those of us who are still struggling with insufficient funding and lack of capital to run our business."*

PT ventures believes that:

> *"...the smaller one's financial capacity, the lesser the ability to take risk and undertake unnecessary and avoidable expenditure".*

Another challenge to the extent of EPS usage is bank charges. Bank charges are charges imposed by banks on bank customers either for the services the banks render to them or for the use of bank facilities. These charges discourage e-payment channels' usage. Users of e-payment channels have variously described such charges as "*indiscriminate*" and "*unscrupulous*". Some of these charges are costs of transaction (COT) including *funds transfers*, charges for unsolicited SMS alerts, and until recently, the payment of NGN100 for the use of payment card not belonging to the bank that owns the ATM machine where the payment card is used. For example, in explicit demonstrations, BN Enterprises and FNC Ltd reacted differently on the effects of high bank charges. While FNC Ltd decided to reconsider the number of times to use some of the channels such as EFT in such a way as to minimise the cost of using EPS channels, BN Enterprises had to shed some of the EPS channels out-rightly due secondarily to high bank charges. Thus, the different reactions of the four firms to the various bank charges are in part a clear reflection of the different contextual (financial) positions of the firms. From the above therefore, it stands to reason that the financial positions of firms do influence the extent of e-payment usage rather than initial adoption among SMEs in Nigeria.

As submitted by FNC Ltd:

> *"They started with charging or debiting NGN100 from your [owner's] account if for instance you use a particular bank's payment card to withdraw cash from an ATM machine owned and operated by another*

> *bank. So, #100 was deducted as many times as you*
> *withdrew cash...Yes, there is the issue of unsolicited*
> *alerts for which the account holder is charged. That*
> *brings me to the issue of transferring money from one*
> *bank to another in what I may call interbank transfers.*
> *Every time I transfer money to suppliers from my bank*
> *to another bank, I'm made to pay extra money which*
> *is charged to my account. These are some of the*
> *discouraging factors to using EPS."*

The difference in organisational policy is also a factor that moderates the decision to adopt and use a technology. If the organisational policy favours EPS adoption such a firm is very likely to adopt and use and extend the use of EPS no matter how small the size or how much extra costs arising from bank charges it incurs in the course of transacting business. Indeed, the decision to adopt and continuously use the EPS by KN Stores, PT ventures and FNC Ltd, despite the so called "indiscriminate" bank charges, did not only depend upon their contextual factors but was also underscored by the deliberate organisational policies as can be gleaned from the submission of KN Stores respondent:

> *"When we consider both the overt and covert risks*
> *and costs associated with physical cash business*
> *undertakings, one would begin to appreciate that*
> *such costs are nothing to write home about. For*
> *some SMEs though, such costs could be significant*
> *to their operational cost but for some, for example*
> *ours, we are not perturbed by such costs."*

Thus, it can be concluded from the analysis that organisational factors such as lack of adequate financial resources are key factors that limit extent of e-payment usage while they do not affect or influence initial adoption. It is also clear that high bank charges and poor physical infrastructure limit the extent of e-payment usage as against adoption. Also, it is obvious that high financial resources and favourable organisational policy do and indeed positively influence adoption as well as extent of e-payment systems usage in Nigeria.

4.5. *THEME 5: Gender and Culture Neutrality of E-Payment Technology*

The submissions of the four SME respondents indicate that gender and culture do not influence either the adoption or extent of use of e-payment technology. This is due to the nature of the technology under study (e-payment technology). The technology is perceived to not be sensitive to either gender or culture of the users. According to KN Stores:

> *Gender to me has no role to play in the adoption and use of e-payment systems."* *"...Even as a woman, I never gave a thought to it as to what type of the channels to use. The only thing I was concerned with was how to acquire or choose the channel that is flexible enough to facilitate transactions and help my business to grow."*

KN Stores, the only woman among our respondents, adopted four of the e-payment channels for transactions. She believes that e-payment technology is akin to money and because money does not have cultural sentiment, EPS does not have "*... any cultural attachment or barrier"* to adoption or usage *"even though it may differ from country to country"* As a result, "*the means by which money is conveyed to the intended destination is hardly an issue*" even in Nigeria. For BN Enterprises, e-payment is neither gender nor culture sensitive

> "*... both men and women use telephones, operate radios, TVs, computers and drive cars not withstanding gender.*" "*... I see no difference between doing all of these and paying for goods and services using e-payment channels.*" [BN Enterprises]

However, the qualitative interview results which are consistent with the findings of the statistical result contradict the *a priori* expectation. Although it also contradicts the findings of some earlier studies on certain technologies such as EDI and ecommerce technologies (see for example, Chiemeke and Evwiekpaefe, 2011; Jimmie and Mukhopadhyay, 2010; Zheng et al, 2006; Chang et al, 2005), the extent of contradiction is limited by the difference in the type of technology studied by such earlier researchers.

5. **Recommendations, Limitations and areas for Further Study**
5.1. **Recommendations**

To remove impediments from adoption of e-payment systems by SMEs and facilitate swift advancement to economic activities that can robustly enable Nigeria achieve vision 20:2020 goal through the internet economy, we recommend as follows:

All concerned must strive to address and remove all impediments to the success of EPS adoption and continuous use by SMEs in Nigeria.

Regulatory authorities must create and enforce the right policies to ensure that national physical infrastructure such as electricity supply and internet services are adequately delivered by licensed providers.

The three levels of government (local, state and federal) and their agencies and the stakeholders must transit from the use of traditional

payment systems (cash and paper cheque) to EPS in government businesses like the payment of civil servants' salaries and pensioners' wages, and payment of government contractors. This will definitely encourage adoption and use of EPS in Nigeria.

5.2. **Limitations**

This study has a number of limitations. The first is limited generalisation because of the few number of respondents used in the study. Closely related to this is the fact that the sample used in this study was drawn from a single state – Lagos state (because this was the only state where the policy was being implemented as at the time of fieldwork). Also, this study depended only on SMEs drawn from the service and wholesale/retail distribution subsectors because of their relatively larger size in the data base used. These constraints would therefore make generalisation of the findings of this study either to the whole country and beyond or to other sectors practically impossible. However, this concern may be ephemeral partly because SMEs in Lagos state are indeed not significantly different in character and structure from SMEs in the other states of Nigeria either in terms of industry or size distribution. If anything, there are more SMEs in Lagos state than anywhere else in Nigeria. Lastly, the study relies wholly on a single representative from each of the participating SMEs for information about the firm. The implication is that this could introduce single-representative biases (Xiaolin et al, 2011) which are a kind of bias resulting from the opinion of an individual in a firm which may not perfectly represent the perspectives of the firm. However, no serious single-representative bias is expected because all the participants of the SMEs interviewed are either owners or owner-managers who are believed to know their own firms inside-out.

5.3. Suggestions for Further Study

No matter how successful a study might be it would almost always be open to improvement at one point in time or the other through further research. Therefore, this study can be extended in many ways. Thus, more studies investigating both the initial adoption decision and post adoption actions relating to EPS adoption and use decisions covering the full complements of EPS use expansion as in the case of Zhu et al (2005) in organisations should be the focus of such studies. Also, more factors such as perceived risk, perceived compatibility and firm size and many more factors which have been found to influence the perception and decision to adopt and/or use EPS for other countries can be further explored as these were not considered in this study.

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