

How user behaviour is moderated by affective commitment on point of sale terminal

Ambrose Ogonna Oloveze and Ogonnaya Ukeh Oteh
*Department of Marketing, College of Management Sciences,
Michael Okpara University of Agriculture, Umudike, Nigeria*

Hyginus Emeka Nwosu
*Department of Business Administration,
Alex Ekwueme Federal University Ndufu-Alike, Abakaliki, Nigeria, and*

Ray Ozoemena Obasi
*Department of Marketing, College of Management Sciences,
Michael Okpara University of Agriculture, Umudike, Nigeria*

Received 8 May 2020
Revised 22 July 2020
Accepted 2 September 2020

Abstract

Purpose – Several e-payment technologies have diffused in Nigeria yet debit card usage on POS devices have not shown consumer confidence in its usage thereby affecting the cashless policy drive of the nation. The study considered an affective commitment of users as moderating their behaviours. Therefore, the purpose of this paper is to investigate how user behaviour is moderated by an affective commitment on point of sale terminal.

Design/methodology/approach – Following the purpose of the study, the research design is a survey. The questionnaire was adapted from earlier studies and tested for reliability and validity using Cronbach's alpha and content validity. Andrew F. Hayes process was used to analyse the moderation effect.

Findings – The finding revealed that affective commitment significantly moderates users' ease of use of the device, their perceived usefulness of the device and their social image on their intentions to use the device.

Research limitations/implications – The findings implied that there is a need for the development of policies and strategies which should be directed towards the users of the device. Equally, the general conclusions on collective e-payment channels in a society should be discarded given that each e-payment channel can have different factors influencing it than the others. This is where customer-focused advertising and awareness campaign becomes very important.

Originality/value – This paper declares that the research work is not submitted anywhere for publication or for review. It was conducted by the authors who have given their consent for it to be submitted to Rajagiri management journal

Keywords Consumer behaviour, Affective commitment, Technology acceptance model, Intention to use, E-payment, Point of sale, Technology innovation

Paper type Research paper



1. Introduction

In recent times Nigeria's e-payment system has been growing in volume and value. The volume and value of e-payment transactions increased significantly by 81.5% and 55.8%, respectively, between 2010 and 2011 (CBN, 2011), however, by 2014 and 2015 the volume and value of e-payments increased by 14% and 12.8%, respectively, between 2014 and 2015 (CBN, 2015). Such developments were as well experienced between 2017 and 2018 following the annual reports of CBN on e-payment transactions in Nigeria. In essence, the value and volume of e-payment transactions (categorised as National Electronic Fund Transfer (NEFT), automated teller machines (ATM), point of sale (PoS), WEB, MMO, Nigeria Instant Payment (NIP), Mobile cash (m-CASH), Electronic bills payment (EBILLSPAY), REMITA, Nigeria Electronic Payment Service (NAPS) and CENTRAL PAY) increased by 38.4% and 34%, respectively, in volume and value of Nigeria's electronic transactions (CBN, 2018). This increase was generally attributed to increased awareness and confidence of the consumer on the available electronic payment channels. Particularly, this is often expressed through bank customers' preference for cashless transactions to cash transactions (Acha *et al.*, 2017). This is not only peculiar to bank customers alone. Kung (2018) reports that following the attributes of e-payments in being fast, convenient and efficient, e-payment channels are currently embraced by whole and retail units in their payment transactions. Clearly, such changes are becoming a welcomed development. Remarkably, this shows an emerging trend in the payment system in Nigeria in that paper money is no longer the only means of payment.

There are different electronic payment systems in Nigeria such as ATM, WEB, REMITA and PoS going by the categories of e-payment channels stated in CBN annual report (CBN, 2011, 2015, 2018). Emphatically, while ATM is often classified in time past as having withdrawal capacity only. In recent times improvement in payment technologies has enabled ATMs to not only allow customers to withdraw money using the machine but also make deposits and pay bills. Consequently, Tijani and Ilugbemi (2015), Mustapha (2018); and Nedozi and Omoregie (2019) classified ATM transactions as an electronic payment channel. This was succinctly captured by Parker and Swatman (2002) in that in near future ATM usage would in addition to withdrawal and deposit functions, adopt functions such as bills payment and event ticketing. Amongst the growth rate of e-payment channels, the growth rate of PoS terminal is dwarfed by the growth rate of ATM and Mobile payment within the same period. According to CBN (2015, 2018) the patronage of electronic payment systems in Nigeria was hugely dominated by ATM as consumers expressly display their confidence in the use of that channel. In other words, consumer patronage of PoS terminal is low over the years when contrasted with the patronage of ATM and Mobile payment between 2011 and 2015 while between 2017 and 2018 ATM and NIP largely overwhelmed customers' choice of PoS. Closer analysis of the CBN annual report of 2011, 2015 and 2018 indicates that the increase of PoS in 2011, 2015 and 2018 is dwarfed by the increase of ATM, mobile payment and NIP over the same period, thus indicating more consumer confidence in the use of other e-payment systems than PoS. Given the cashless policy drive of Nigeria, a better understanding of the role of consumer's affective commitment in the use of PoS for payment will provide a new dimension of knowledge on how to improve the use of PoS for payments.

A considerable number of studies have looked at e-payment and plastic cards globally. In recent times it is a consequence of the emergence of new digital payment channels in advanced nations and their subsequent improvements targeted towards reducing the high usage of cash and cheques (Bech *et al.*, 2018). However, few studies in Nigeria have considered PoS as an alternative e-payment instrument to cash at major retailing points in

Nigeria. Some of these studies considered such things as factors affecting adoption of point of sale terminals by business organisations (Omotayo and Dahunsi, 2015); factors influencing consumers adoption of point of sale terminals (Adeoti and Oshotimehin (2011); challenges to the efficient use of PoS terminals (Adeoti (2013); adoption of point of sale terminals (Adeoti and Oshotimehin (2012); benefits and challenges of cashless policy (Acha *et al.*, 2017). These earlier studies have not really addressed the poor adoption of this handy and convenient e-payment means. Equally, the general notion on CBN reports about consumer awareness and confidence been a result of increased usage is misleading and poorly captures the poor adoption of PoS by some consumers given that they generally have more preference to ATMs and NIPs than PoS terminal usage. The import of these is that the present study is not based on identifying the factors or disproving the factors but anchored on establishing an interactive effect that projects enhancement use or decreasing use effect. This was actually carried out using the affective commitment of the user as an interactive factor. This is necessary following the comparative poor adoption and usage rate of PoS terminal in Nigeria. It follows that the influencing factors of earlier studies to address the position seemed not to have produced the expected result in turning the tides. This is despite the cashless policy drive of the CBN in Nigeria. In other words, the challenges of poor adoption of PoS terminal still persists. As a result, the affective commitment of the user becomes imperative to study in relation to the usage of the payment technology.

Generally, PoS is where commerce is executed (Blessa, 2010), however, in commerce consumers react differently to different payment technologies given the disparity in patronage in Nigeria's e-payment market. Consumers that are comfortable using plastic cards for payment may react differently in using cash for purchases (Soman, 2001). Thus, the success or failure of any innovation is dependent on the consumer and some other external factors. Globally, new businesses are going for faster, more convenient, effective and efficient payment systems (Meltzer and Marulanda, 2016). In like manner, there have been significant evolutions in Nigeria's payment system following the significant shifts from cash to digital transactions (Amudi, 2015). The government and private sectors have been at the heart of awareness creation on the need for customers to go cashless (Amadeo, 2018; Kabir *et al.*, 2017). However, failure to capture the gains of PoS in the nation begs for attention. On the other hand, consumers vary in their level of affective commitment. According to Fullerton (2005), it is a vital psychological factor that is crucial to the development and maintenance of marketing relationships. Though it has variedly been used in studies relating to employees' emotional attachment, involvement and identification to organisations (Kwantes, 2009; Allen and Meyer, 1990), studies indicate that it shows an enduring attitudinal desire to continue a relationship based on psychological attachment (Bansal, *et al.*, 2004). It is considered to have a very strong positive effect on individual behaviours (Ng and Feldman, 2011). In essence for any technology adoption, the consumer's desire to continue the use of a payment device as a positive emotion developed towards a payment device is important to be assessed. Following that researchers consider affective commitment to have a social influence from relational angles (Gwebu and Wang, 2011; Magni and Pennarola, 2008) it is anchored on experiences of individuals such that it influences the individual's trust, value perception and feelings of satisfaction (Ng and Feldman, 2011; Bateman *et al.*, 2011). Thus, a better understanding of affective commitment as a moderating variable on factors influencing consumer intention to use PoS terminal will provide insights on how to improve consumer patronage of PoS terminal in Nigeria. Therefore, the study considered consumer's affective commitment as a moderator on ease of use, perceived usefulness, social image and perceived trust on consumer's intention to use the PoS terminal. From a consumer theory point of view, it is a consumer's desire to continue

a relationship with a firm because of a positive emotion towards the firm (Kim and Frazier, 1997). This relationship relates to the use of bank's debit card to make transactions at retail points. In other words, in relation to human-computer interface relationship, the study considers affective commitment in terms of consumer's voluntary desire to continue personal attachment to the use of the device arising from positive direct or indirect experience gained from the use of the device. Zeithaml *et al.* (1996) argued that positive experience encourages consumer commitment. Thus, a high level of consumer commitment should produce a beneficial consequence (Rusbult and Arriaga, 1997). In all, affective commitment is considered to have a reflection of general affective response to issues in life. It represents a user's emotional attachment to something or an individual's identification with a thing (Meyer and Allen, 1984).

2. Review of related literature

2.1 Ease of use

Ease of use is the degree of a person's believability on the effortlessness associated with the use of a technology (Davis, 1989; Taylor and Todd, 1995; Kim *et al.*, 2008). It considers the perception of consumers in seeing the system as being simple to use rather than complex and difficult. Kim *et al.* (2009) stated that it affects consumers' attitude and their subsequent behavioural intention. It looks at how consumers view technology or new system as not being complex or difficult but simple and easy to use. Often it is seen as affecting consumers' attitude towards their subsequent behavioural intention (Kim *et al.*, 2009). It is considered as one of the qualities that have the greatest impact on new technology acceptance (Moore and Benbasat, 1991). Davis (1989) views it as quality with double impact on attitude. It has been seen in this work as the simplicity offered to plastic cardholders when using their cards for payment on PoS at any retailing point or any place where it is available for use. Particularly, in the PoS terminal, it is the extent to which potential users consider it not to be associated with difficulty and complexities in using it to make payments. Factoring affective commitment to ease of use on PoS terminal becomes essential following the poor adoption rate. This follows the fact that affective commitment can correlate with focal behaviour (Meyer and Herscovitch, 2001). Thus, the psychological feeling of ownership of debit card and its ease of use on PoS device is established in extant studies as influencing innovative payment devices, however, feelings of satisfaction associated with usage of the device and user's feelings towards PoS terminal is an important element that borders on affective commitment. Thus, the study hypothesised:

Ho1. The relationship between ease of use and intention to use PoS is not significantly moderated by affective commitment.

2.2 Perceived usefulness

This is the degree to which a person believes that using a certain technology will enhance his/her performance (Kim *et al.*, 2008). Sometimes it is likened to Roger's relative advantage in the diffusion of innovation theory. From an individual's point of view, it is considered as an improvement of task performance when an individual uses a system (Davis, 1989; Zhu *et al.*, 2009). In relating it to Rogers (1983) relative advantage in the diffusion of innovation theory, it is the extent to which an innovation is perceived to be better than its predecessor. Following these, it is commonplaces that consumers often consider the utility value that emanates from the use of any given technology or system. This is because it has an impact on them as Kim *et al.* (2009) asserts that it affects attitude and subsequent behavioural intention. As such the study

considers it as composite benefits it offers to potential and actual users. Earlier studies such as [Guriting and Ndubisi \(2006\)](#) have indicated that perceived usefulness influences consumers' intention to adopt a payment technology. The studies as well indicate that they have been conducted in developing countries ([Lai and Wang, 2012](#); [Xie et al., 2011](#); [Zhao and Cao, 2012](#)) and developed countries ([Jose et al., 2013](#)) though the majority of the studies emanate from developing countries. Infant stage of information technology in developing countries compared to developed countries can be deduced to be the reason for such disparity ([Hana et al., 2012](#)). However, the value associated with the use of a PoS terminal is often comparatively considered against other devices. Given the expression on consumer confidence in e-payment channel in Nigeria especially on ATM, a positive view of the use of PoS terminal projected by information enforced affective commitment could present a different change to poor adoption of the device. Affective commitment in this guise is construed from [Becker \(1960\)](#) view of affective commitment as time spent and money investment in a way that it serves as a motivator. Thus, the study hypothesised:

Ho2. The effect of perceived usefulness on the intention to use PoS is not significantly moderated by affective commitment.

2.3 Social image

This is often associated with social pressure. Given its importance, it has attracted the attention of scholars as studies on it span literature that cover motives for pro-social behaviour ([Benabou and Tirole, 2006](#)), conformity ([Bernheim, 1994](#)) and identity ([Akerlof and Kranton, 2010](#)). It has a wide range of effects that cuts across consumer consumption, education and investment decisions ([Bursztyn and Jensen, 2016](#)). However, it refers to the degree to which the use of an innovation is perceived to enhance one's image or status in one's social system ([Moore and Benbasat, 1991](#)). It is the degree to which adopting PoS increases the adopters social status and prestige in society ([Omotayo and Dahunsi, 2015](#)). In this context, the social image of the user in the society is perceived to have an influence in adopting an innovation. Particularly, it could border on the creation of a particular image in the society, preservation of social status or even altering the image of the user as one that belongs to a particular class. According to [Bursztyn and Jensen \(2016\)](#) in a user's daily activity, social image's influence can go from influencing what is bought, dressing, how to speak, hard work, as well as relationships and involvements in social, political and community activities. Extant studies revealed that it can influence the acceptance of the technology. The social image can influence user acceptance of technology ([Venkatesh and Davis, 2000](#)), as well as adoption intentions ([Teo and Pok, 2003](#)) given that the authors established that many adopt technology because of the belief that these technologies may help create, alter or preserve the image and social status for themselves within their social setting. However, there are results that are not consistent with the positive effects of a social image on the adoption of innovations. Studies such as [Teo and Pok \(2003\)](#), [Venkatesh and Davis \(2000\)](#); [Karahanna et al. \(1999\)](#) found a relationship between social image and adoption intentions others studies such as [Omotayo and Dahunsi \(2015\)](#), [Jebeile and Reeve \(2003\)](#) and [Agarwal and Prasad \(1997\)](#) established an insignificant relationship. Following this, and the existing position of poor adoption of PoS terminal, affective commitment is considered to moderate the variable given its general reflection of affective response to issues. In addition, user's emotional attachment and being able to be indicated with its usage worth considering as moderating social image on the adoption of PoS terminal. Consequently, the study hypothesised:

Ho3. The effect of social image on the intention to use PoS is not significantly moderated by affective commitment.

2.4 Perceived trust

This is an essential factor that is vital in personal interactions with information technology (Wiedmann *et al.*, 2010). It is a term that has various meanings (Williamson, 1993). However, the study is not focused on nomenclature rather on moderating effect. Besides, it can be defined as a “firm belief in the competence of an entity to act dependably, securely and reliably within a specified context” (Grandison and Sloman, 2000). It deals with the psychological condition of another such that it leads to such person’s vulnerability acceptance on the ground having positive expectations good action (Singh and Sirdeshmukh, 2000). In other words, it is the user’s perceived confidence in the electronics’ dependability and integrity (Belanger *et al.*, 2002). Trust in a payment system is considered to lead to a reduction in user’s disposition to understanding, managing and assessing situations thereby making user’s task effortless during transactions (Pavlou, 2002, 2003). According to Chen and Barnes (2007); and Yang *et al.* (2009) trust can play a determinant role in the acceptance or success rate of new technologies. Thus, it can impact on consumer’s intention to use PoS terminal for payment of purchases given that PoS terminal is a payment innovation that is in its nascent stage in Nigeria. Studies like Gefen *et al.* (2003) considered trust to be a key driver for adoption due to its relevance to deal with uncertainty and vulnerability. As such Carter and Weerakkody (2008) emphasised the importance of its inclusion in adoption models so as to gain a better understanding of user acceptance of electronic services. Greater trust in a particular payment system will cause significant improvement on the attitude of the user towards the use of the payment system and consequently the intention to use the payment system (Lu *et al.*, 2011). As well greater experienced users of online applications is considered to show higher levels of trust (Liebana-Cabanillas *et al.*, 2014). Generally, consumer trust in service providers, banks and payment services is deemed to positively affect intentions to use mobile services and subsequent behaviour (Arvidsson, 2014). Studies that assessed trust has established the variable as having an effect on adoption (Lu *et al.*, 2011). On the other hand, following that affective commitment denotes emotional attachment and identification with things, the study considered how it can moderate their perceived trust in the technological payment device. Thus, the study hypothesised:

Ho4. The effect of perceived trust on the intention to use PoS is not significantly moderated by affective commitment.

2.5 Electronic payment in Nigeria from 2006–2018

According to CBN (2011) the volume and value of e-card transactions increased significantly from 195,525,568 and N1,072.9bn in 2010 to 355,252,401 and N1,671.4bn in 2011, reflecting an increase of 81.5% and 55.8%, respectively. However, the volume and value of electronic payments increased by 14.0% and 12.8% to 519,223,279 and 4,952.7bn in 2015 over the levels of 455,635,404 and 4,391.4bn, respectively in 2014 (CBN, 2015). Likewise, the volume of e-payment transactions increased from 2,046.4m in 2017 to 1,478.5m in 2018 while the value of e-payment transactions as well increased from 99,292.3bn in 2017 to 133,042.2bn in 2018. This indicates 38.4% and 34% increase in volume and value, respectively, on e-payment transactions within this period. However, as of 2011 data on various e-payment channels indicated that ATMs remained the most patronised, wherein it accounts for 97.8%,

followed by web payments, 1%, POS terminals and mobile payments, 0.6% each. Similarly, in value terms, ATMs accounted for 93.4%, web 3.5%, POS 1.9% and mobile payments, 1.2% (CBN, 2011). A breakdown of e-payment channels by volume as of 2015 indicated that ATM also remained the most patronised, accounting for 83.5%, followed by mobile payments and PoS terminals, with 8.5% and 6.5%, respectively. The web was the least patronised, with 1.5% of the total. In terms of value, ATM had 80.2%; Mobile, 8.9%; PoS, 9.1%; and web 1.8% (CBN, 2015). These trends remained unchanged in 2018 wherein ATM and NIP largely dominated PoS.

2.6 Theoretical underpinning

There are various models that could be used to underpin the study of how user behaviour is moderated by an affective commitment to intentions to use the PoS terminal. Several of these models (Theory of Reasoned Action, Fishbein and Ajzen, 1975; Technology Acceptance Model, Davis, 1989; Theory of Planned Behaviour, Ajzen, 1991; and Technology Acceptance Model 2, Venkatesh and Davis, 2000) are centred on information technology. These models have been adopted by researchers to explain payment technology (Omotayo and Dahunsi, 2015; Pentano and Servidio, 2012; Kim *et al.*, 2008; Lee *et al.*, 2005). However, the Technology Acceptance Model and Unified Theory of Acceptance and Use of Technology are the most used by researchers to explain behavioural intentions to use and acceptance of technology (Davis *et al.*, 1989). Kabir *et al.* (2017) argued in their analysis of 77 papers that the Technology Acceptance Model and self-developed models are the dominant models. In other words, there is no commonly accepted theory for electronic payment. Researchers choose a model and modify it. Consequently, it has resulted in different variations of each model which in effect has led research to become farther away from a commonly accepted model (Benbasat and Barki, 2007). However, the Technology Acceptance Model (TAM) has served as a common framework used by researchers to examine factors influencing the adoption of information system (Jeong and Yoon, 2013). This popularity has enhanced its popularity (Lee *et al.*, 2003) given it is over 700 citations to the original TAM by Davis (Chuttur, 2009). However, one of the core reasons for TAM's wide usage and acceptance is anchored on its specific handling of factors that influences usage of information system (Mathieson *et al.*, 2001) and its robustness from validated through several empirical studies (Jeong and Yoon, 2013). The original TAM by Davies explains how and what factors contribute to changes in individual's behavioural attitude when implementing new technologies in such a way that it explains why users adopt or reject technology or a new innovation system. These factors include perceived usefulness (PU) and perceived ease of use (PEoU). While PU considers the feelings of the consumer against the contributions of the technology in making the payment activity easier and enhancing the whole experience, PEoU considers the extent to which using the payment device becomes effortless for the consumer in usage. Given the peculiarity and specificity of TAM and the nature of the study, TAM was modified in this study wherein ease of use, perceived usefulness, social image and perceived trust are moderated by affective commitment against intention to use the PoS terminal. A clearer picture is captured in Figure 1.

Figure 1 shows the variable constructs as independent variables and the intention to use the PoS terminal as the dependent variable. The independent variables include ease of use, perceived usefulness, social image and perceived trust. The study considered affective commitment as a moderator in that the relationship between the independent variables and the dependent variable is dependent on the effect of the moderator variable. The interaction effect of this variable is expected to have either an enhancement effect of the predictor

variable, decreasing effect of the predictor variable or reversal effect of the predictor variable. This will enable a better understanding of how effective commitment can help to drive poor consumer patronage of payment technologies especially in developing countries where acceptance is often hinged on education.

3. Research methodology

The study was carried out in Ebonyi State. The state is one of the emerging economic hubs in the South East. The survey research design was used for the study and the population comprised of debit card/ATM cardholders in the state who have used it on PoS terminal. Convenience sampling technique was used as only the specific elements that meet the study's defined criteria who could be conveniently reached were included in the sample. Given the indefinite nature of the population of debit card/ATM cardholders [Onyeizugbe \(2013\)](#), stated that the sample size of an unknown population at the time of conducting any study can be determined by applying the following formula:

$$n = P(1 - P) \left(\frac{z}{e} \right)^2$$

where:

n = Sample size;

z = Standard error corresponding to a given confidence level (95% i.e. $z = 1.96$);

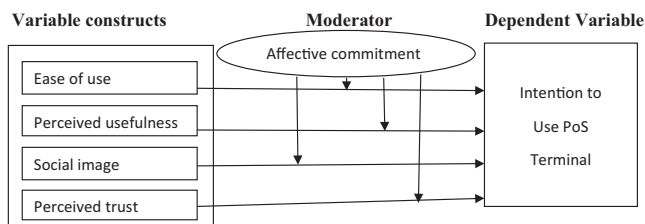
e = Proportion of sampling error in a given situation (7% allowable error for the study); and

p = estimate of the population (50%):

$$n = 0.5(1 - 0.5) \left(\frac{1.96}{0.07} \right)^2 = 0.5(0.5) \left(\frac{1.96}{0.07} \right)^2 = 0.25(784) = 196.$$

Primary data was used for the study through the use of a pre-tested structured questionnaire on the adoption of e-payment system that was adapted from previous studies. The adapted questionnaire was self-administered using mall intercept. [Table 1](#) contains measurement development where the items were adapted from previous studies.

Content validity was used to ensure the validity of the instrument and to ensure appropriate coverage as measurement items were adapted from earlier studies. This is more appropriate where items were adapted from previously validated instruments and they are met as well at the same time ([Chen and Chengalur-Smith, 2015](#)). Cronbach reliability scale was used to test the reliability of the instrument. However, in analysing the data,



Note: Shows the variable constructs as independent variables and the intention to use PoS

Figure 1.
Theoretical construct

Andrew F. Hayes Process Procedure was used to analyse the moderation effect of affective commitment on ease of use, perceived usefulness, social image and perceived trust. Installed Andrew F. Hayes Process on SPSS IBM Statistics v21 tool aided the analysis. Thus, the model specification includes:

$$H1^* : Y = \beta_0 + \beta_1 X(\text{EoU}) + \beta_2 Z(\text{Affcom}) + \beta_3 XZ(\text{EoU} * \text{Affcom}) + \varepsilon (\text{Error term})$$

$$H2^* : Y = \beta_0 + \beta_1 X(\text{PU}) + \beta_2 Z(\text{Affcom}) + \beta_3 XZ(\text{PU} * \text{Affcom}) + \varepsilon (\text{Error term})$$

$$H3^* : Y = \beta_0 + \beta_1 X(\text{SI}) + \beta_2 Z(\text{Affcom}) + \beta_3 XZ(\text{SI} * \text{Affcom}) + \varepsilon (\text{Error term})$$

$$H4^* : Y = \beta_0 + \beta_1 X(\text{PT}) + \beta_2 Z(\text{Affcom.}) + \beta_3 XZ(\text{PT} * \text{Affcom}) + \varepsilon (\text{Error term})$$

Where:

- EoU = Ease of use;
- PU = Perceived usefulness;
- SI = Social image;
- PT = Perceived trust;
- Affcom = Affective commitment; and
- Y = intention to use.

4. Data analysis and results

Firstly, to measure the reliability of the scale instrument, the result of Cronbach's alpha reliability is shown in [Table 2](#).

[Table 2](#) indicated that there is an overall good reliability score. Cronbach alpha result showed that the alpha scores of each of the variables were above 0.60 thereby indicating good reliability of measurement instrument or reliable internal consistency of items given that [Nunally and Bernstein \(1994\)](#) recommended a common threshold of 0.7 as being a good reliability value. Equally, [Hair et al. \(2006\)](#), assert that a coefficient of less than 0.6 indicates marginal to low internal consistency and a value of 0.60 or more indicates satisfactory internal consistency reliability. Thus, the result indicates satisfactory internal consistency reliability. On the other hand, perceived usefulness was measured with five items. An item that was reverse worded was dropped.

Table 1.
Measurement
development

S/N	Measurement items	Sources of scale items
1	Ease of use	Venkatesh and Bala (2008)
2	Perceived usefulness	Bhattacharjee and Premkumar (2004) ; Karahanna et al. (1999) ; Koufaris (2002) ; Pikkarainen et al. (2004) and Muñoz (2008)
3	Perceived trust	Pavlou (2002) and Muñoz (2008)
4	Affective commitment	Allen and Meyer (1990) ; Ganesan (1994) ; Garbarino and Johnson (1999) and Morgan and Hunt (1994)
5	Social image	Venkatesh and Bala (2008) ; Venkatesh and Davis (2000) and Moore and Benbasat (1991)
6	Intention to use	Venkatesh and Bala (2008)

Table 3 revealed that 50.6% of the participants in the study were female while 49.4% are male. Consequently, the difference in gender participation is marginally even. On the age category of the participants, 63.3% of them are in the age range of 18 – 34 years while 36.7% are either 35 years or above. Majority of the participants are single as indicated by their 66.9% composition. In total, 29.5% are married while another marital status not captured in the research instrument was a meagre 3.6%. In the occupation category, a greater percentage of participants were employed (74.7%). This percentage dwarfed the percentage composition of the other participants (Student – 14.5%; Self-employed – 3.6% and Unemployed – 7.2%). This actually implied that the result of the study were predominantly employed participants with a

Construct	Cronbach's alpha	No. of items
Ease of use	0.80	4
Perceived usefulness	0.72	4*
Social image	0.94	3
Perceived trust	0.96	3
Affective commitment	0.80	4
Intention to use	0.72	3

Notes: *Originally measured with 5 items. A reverse worded item was dropped

Table 2.
Reliability result

Variables	Frequency	Valid (%)
<i>Gender</i>		
Male	82	49.4
Female	84	50.6
Total	166	100
<i>Age</i>		
18–34 years	105	63.3
35 years and above	61	36.7
Total	166	100
<i>Marital status</i>		
Single	111	66.9
Married	49	29.5
Others	6	3.6
Total	166	100
<i>Occupation</i>		
Student	24	14.5
Employed	124	74.7
Self-employed	6	3.6
Unemployed	12	7.2
Total	166	100
<i>Education</i>		
Secondary	18	10.8
OND/NCE	25	15.1
Degree/HND	98	59.0
Masters	25	15.1
Total	166	100

Table 3.
Demographic
variables of
respondents

little mix of students and unemployed. Finally, the class of Degree/HND holders on the education level of participants had the highest percentage level of participation (59%). This is followed by OND/NCE and Masters Holders (15.1%) while the Secondary school certificate holders occupy the least percentage of participation in the survey (10.8%).

4.1 Hypotheses testing

The significant level for all stated hypotheses was set at 0.05 level. The hypotheses were stated in a null form on the basis that affective commitment does not significantly moderate the effect of independent variables on the dependent variable. To evaluate the moderating effect of affective commitment the study considered the *p*-value, *R* square and *R* square change from the interaction model. Significant moderation effect is established when the included interaction term shows a statistically significant variance i.e. the significance of the increase in *R*² (Hartmann and Moers, 1999).

Four moderation models were estimated and their results are presented in Table 4. The nature and direction of statistically significant interactions were examined graphically. As well the variables were mean centred to avoid any potential problem of multi-collinearity.

Model 1 assessed the moderation effect of affective commitment on the relationship between Ease of use and intention to use PoS terminal for payment. Both model summary and interaction model were statistically significant given that *p* < 0.01. There is a marked difference between the *R* Square (16) and *R* square change (04) in Table 4 that resulted from the interaction of affective commitment. In other words, the interaction of Ease of use and affective commitment is significant ($\beta = -24, p < 0.01$) supporting affective commitment as having a moderator effect on the relationship between ease of use and intention to use the PoS terminal. Because of the statistical significance of the interaction, it was plotted and interpreted. (Figure 2).

From the interaction plot for model 1, the dark line (high affective commitment) showed a negative relationship between ease of use and intention to use the PoS terminal. The

Model	Items	Coeff.	SE	T	<i>R</i> sSq.	ΔR sq.	<i>p</i> -value
1	Model sum				0.16		0.00
	Constant	4.26	0.05	80.98			0.00
	EoU	-0.14	0.08	-1.81			0.07
	Affcom	0.28	0.07	3.92		0.04	0.00
	Int_I	-0.24	0.07	-3.29			0.00
2	Model sum				0.17		0.00
	Constant	4.18	0.04	105.44			0.00
	Affcom	0.27	0.06	4.91			0.00
	PU	0.19	0.07	2.64		03	0.01
	Int_I	0.16	0.05	3.57			0.00
3	Model sum				0.18		0.00
	Constant	4.18	0.04	107.57			0.00
	Affcom	0.22	0.04	5.36			0.00
	SI	-0.11	0.03	-3.47			0.00
	Int_I	-0.07	0.03	-2.70		0.02	0.01
4	Model sum				0.20		0.00
	Constant	4.19	0.04	110.14			0.00
	Affcom	0.24	0.07	3.70			0.00
	PT	0.15	0.04	3.59			0.00
	Int_I	-0.07	0.10	-0.69		0.01	0.49

Table 4. Estimated moderation of factors influencing intention to use PoS

implication of moderation is that for people with high affective commitment, to ease of use increases intention to use PoS terminal decreases. The same negative relationship is also applicable to people that had a moderate/average affective commitment. This could be on account of other factors like cost given that high cost is a crucial factor in adopting mobile service (Sadi *et al.*, 2010) and as well transaction service fees can encourage or discourage adoption of mobile service (Yang *et al.*, 2009). However, for people with low affective commitment (denoted by dark dash lines) as ease of use increased intention to use PoS terminal increased as well. In other words, a person that has a low association in use of PoS terminal for payment enhances their use of PoS when their level of believability on the effortlessness associated with the use of a technology increases.

Model 2 in Table 4 also shows the assessed moderation effect of affective commitment on the relationship between perceived usefulness and intention to use PoS. The model summary and the interaction model were statistically significant at $p < 0.01$. The variables were also significant at $p < 0.01$ and the interaction model showed a significant change in the R square (03) (from the original R square = 17) as a result of the interaction of the moderator. Thus, the interaction of affective commitment and perceived usefulness is significant ($\beta = 16$, $p < 0.01$). Consequently, this supports affective commitment as a moderator of the relationship between perceived usefulness and intention to use PoS. In essence, the stated null hypothesis is rejected. In addition, to understand the nature of moderation, the interaction is plotted and interpreted (Figure 3).

The interaction plot for model 2 indicated that for people with high affective commitment, as perceived usefulness increased, intention to use PoS terminal increased. In reference to people with moderate affective commitment as perceived usefulness increased intention to use PoS terminal increased as well. The same is applicable to people with low affective commitment. Thus, the study establishes a general enhancement effect of the moderator on the relationship between perceived usefulness and intention to use the PoS terminal. This is because consumers often evaluate the utility value they could derive from any economic action or use of technology. Actually, perceived usefulness affects attitude

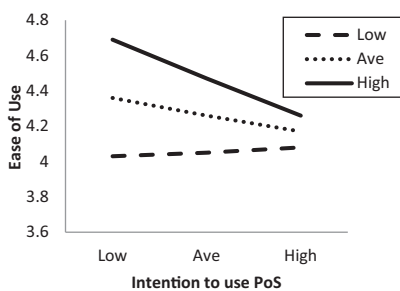


Figure 2.
Model 1 interaction
plot

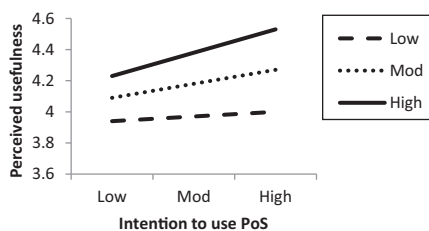


Figure 3.
Model 2 interaction
plot

and subsequent behavioural intention (Kim *et al.*, 2009) and affective commitment of consumers to the payment device is, thus, concluded to have an increasing effect in that as consumers gain improved composite benefit from using their debit card on PoS terminal their intention to use it further is encouraged.

Model 3 focused on the third hypothesis (The effect of social image on the intention to use PoS is not significantly moderated by affective commitment). Table 4 showed that the model summary and the interaction model were statistically significant at 1% and the estimated variables were significant at 1% as well. The interaction of affective commitment and the social image produced a new change in *R* square with a marked difference (02) from the original *R* square (18) prior to the interaction. As well the interaction is statistically significant at 1% thereby supporting affective commitment as a moderator on the relationship between social image and intention to use the PoS terminal. As a result, we rejected the null hypothesis. However, to understand the nature of moderation, the interaction is plotted and interpreted (Figure 4).

Model 3 interaction plot showed a negative relationship between social image and intention to use PoS at different levels of affective commitment. The diagram indicated that for people with a high level of affective commitment, as social image attributed to the use of PoS terminal increased the intention to use PoS terminal for payment decreased. The same decreasing effect associated with the social image and intention to use the PoS terminal is recorded for both moderate level of affective commitment and low level. Impliedly affective commitment does not produce an enhancement effect rather it produces a decreasing effect for people who attach a social image to the use of PoS terminal for payment. Zeithaml *et al.* (1996) argued that positive experience encourages consumer commitment and according to Rusbult and Arriaga (1997) a high level of consumer commitment produces beneficial consequences. The findings of the study showed otherwise for people with value placement on social image and use of PoS terminal. The implication is that the people attached feelings and intentions to continuity in the use of PoS, and thus where the social image is attached to intention to use PoS it yielded an unfavourable result. However, the social image can influence user acceptance of technology (Venkatesh and Davis, 2000) and adoption intentions (Teo and Pok, 2003) but the findings indicated that the interaction effect of affective commitment produced a negative reaction to the use of PoS terminal. Poor awareness campaign on the benefits of using the device, lack of policies addressing this gap and the unfounded belief that there is general consumer confidence in e-payment channel as asserted by CBN (2015; 2018) can allude to the difference. This negative consequence from the social image may as well be as a result of viewing PoS use from poor education of the masses on its use, cost-related factors given the deductions associated with it and also the period of data collection in Nigeria given that it was carried when the government is focused on fighting corruption by introducing policies like cashless policy, Treasury Single Account and Biometric Verification Number. As a result, there might be the palpable fear of unwanted exposure of personal information.

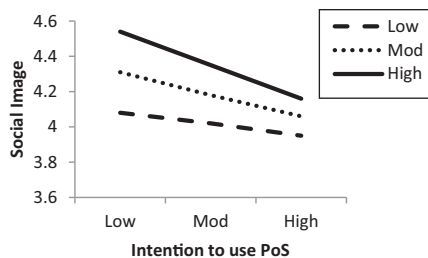


Figure 4.
Model 3 interaction
plot

Model 4 assessed the moderation effect of affective commitment on the relationship between perceived trust and intention to use PoS. However, the result of the interaction model is not statistically significant though there is an observable change in R square (01). As a result, the null hypothesis is accepted in that affective commitment does not have any statistically significant effect on the relationship between perceived trust and intention to use PoS.

4.2 Managerial implication

The overarching managerial implication from the study is the need to simplify the use of the PoS terminal for payment. Consumers' feelings and intentions to continue the use of PoS terminal should be monitored and assessed given that ease of use affects consumers' attitude and their behavioural intention. If the use of PoS becomes difficult for consumers with a high and average level of feelings, the intentions to continue usage will be affected as there will be a significant tendency to withdraw patronage. Consequently, this may account for the recorded low patronage of PoS as a payment device in Nigeria. As a result, the study suggests using aggressive marketing communication that informs, educates and reminds consumers on how to use the PoS terminal at each stage. In addition, the social image of consumers is vital to the intention to use PoS. The negative consequence emanating from the three different levels of affective commitment is a pointer that consumers do not have a favourable view of using PoS terminal. This could stem from poor experience in using the device which affected their feelings and intentions to continue its use. In this regard, the study suggests adopting appropriate customer-focused advertisements by using opinion leaders, role models and celebrities to project the benefits of using PoS terminal for payment. This would help in reversing the negative effect associated with the social image and intention to use PoS.

4.3 Theoretical implication

Following the findings of the study from the modified theory wherein effective commitment of the user is seen as moderating user's ease of use, perceived usefulness and social image, it is enough to assert that affective commitment can produce enhancement effect and reversal effect on usage of PoS payment technology. The theory emphasised the role of individuals' emotional attachment and personal experience in using a PoS payment technology. Without getting the users to experience the positive contributions of PoS payment technology, further acceptance and adoption will not increase. Increases in usage, adoption and diffusion are, thus, at the core of the user's personal experience. In particular, ease of use of PoS payment technology is moderated by personal experience and subsequent emotional attachment to use the payment technology as this is further deepened from benefits derivable from such action. This is as well applicable to perceived usefulness and social image. The basic import of this is founded on individual personal experiences with respect to payment technology usage. In theory, the result indicates that where PoS payment technology user perceives the usage as being complex, the personal experience will deter the user from further uses either by reversal of actions, reduction in usage or complete avoidance of the payment technology. Impliedly, the notion of the theoretical finding is that user's feelings, emotions and feelings of satisfaction to a payment technology (PoS terminal) can produce contrasting results. Where the feelings and personal experiences are positive and strong, increased adoption is promoted but fairly so in cases where personal experiences are not deepened. However, where the users' experience is negative a reversal effect will most likely occur.

5. Conclusion

The study showed that affective commitment is a significant moderator between ease of use, perceived usefulness, social image and intention to use the PoS terminal. Knowledge of the moderating effect of affective commitment will enable government agencies to formulate

programmes, develop policies and strategies that will help meet the needs of consumers and consequently drive the patronage of PoS in Nigeria. This will bring a positive contribution to the realisation of the drive for a cashless economy. The study as well highlighted the need to incorporate cost variable and as well as carrying out the study across diverse cultures. This will result in having a larger sample size. However, it is good to note that the study considered only those who have direct experiences in using PoS terminal for payment. In this regard, the findings may differ from consumers who have never used PoS or uses other payment devices but PoS terminal. As well the study did not include consumer's aversion to risk and cost components as this could be a major factor that could cause a negative relationship. Further studies are encouraged to take these issues into account as they aim to carry out the related study.

References

- Acha, I.A., Kanu, C. and Agu, G.A. (2017), "Cashless policy in Nigeria: the mechanics, benefits and problems", *Innovative Journal of Economics and Financial Studies*, Vol. 1 No. 1, pp. 28-38.
- Adeoti, O.O. (2013), "Challenges to the efficient use of point of sale (PoS) terminals in Nigeria", *African Journal of Business Management*, Vol. 7 No. 28, pp. 2801-2806, doi: [10.5897/AJBM12.1129](https://doi.org/10.5897/AJBM12.1129).
- Adeoti, O.O. and Oshotimehin, K.O. (2011), "Factors influencing adoption of point of sale terminals in Nigeria", *Journal of Emerging Trends in Economics and Management Sciences (JETEMS)*, Vol. 2 No. 5, pp. 388-392.
- Adeoti, O.O. and Oshotimehin, K.O. (2012), "Adoption of point of sale terminals in Nigeria: assessment of consumers' level of satisfaction", *Research Journal of Finance and Accounting*, Vol. 3 No. 1, pp. 1-6.
- Agarwal, R. and Prasad, J. (1997), "The role of innovation characteristics and perceived voluntariness in the acceptance of information technology", *Decision Sciences*, Vol. 28 No. 3, pp. 557-582.
- Ajzen, I. (1991), "The theory of planned behaviour", *Organizational Behavior and Human Decision Processes*, Vol. 50 No. 2, pp. 179-211.
- Akerlof, G.A. and Kranton, R.E. (2010), *Identity Economics: How our Identities Shape our Work, Wages, and Well-Being*, Princeton University Press, Princeton.
- Allen, N.J. and Meyer, J.P. (1990), "The measurement and antecedents of affective, continuance and normative commitment to the organization", *Journal of Occupational Psychology*, Vol. 63 No. 1, pp. 1-18.
- Amadeo, K. (2018), "US economy: investing and growth", available at: www.thebalance.com/gdp-and-growth-4073942
- Amudi, M. (2015), "Evolution of the Nigerian payments system", available at: www.linkedin.com/pulse/evolution-nigerian-payments-system-magnus-amudi
- Arvidsson, N. (2014), "Consumer attitudes on mobile payment services: results from a proof of concept test", *International Journal of Bank Marketing*, Vol. 32 No. 2, pp. 150-170.
- Bansal, H.S., Irving, P.G. and Taylor, S.F. (2004), "A three-component model of customer commitment to service providers", *Journal of the Academy of Marketing Science*, Vol. 32 No. 3, pp. 234-250.
- Bateman, P.J., Gray, P.H. and Butler, B.S. (2011), "The impact of community commitment on participation in online communities", *Information Systems Research*, Vol. 22 No. 4, pp. 841-854.
- Bech, M., Faruqui, U., Ougaard, F. and Picillo, C. (2018), "Payments are a-changing' but cash still rules", *Bank for International Settlement (BIS) Quarterly Review, March 2018*, pp. 67-80.
- Becker, H.S. (1960), "Notes on the concept of commitment", *American Journal of Sociology*, Vol. 66 No. 1, pp. 32-40.
- Belanger, F., Hiller, J. and Smith, W. (2002), "Trustworthiness in electronic commerce: the role of privacy, security, and site attributes", *The Journal of Strategic Information Systems*, Vol. 11 Nos 3/4, pp. 245-270.

- Benabou, R. and Tirole, J. (2006), "Incentives and pro-social behaviour", *American Economic Review*, Vol. 96 No. 5, pp. 1652-1678.
- Benbasat, I. and Barki, H. (2007), "Quo vadis TAM?", *Journal of the Association for Information Systems*, Vol. 8 No. 4, pp. 211-218.
- Bernheim, B.D. (1994), "A theory of conformity", *Journal of Political Economy*, Vol. 102 No. 5, pp. 841-877.
- Bhattacharjee, A. and Premkumar, G. (2004), "Understanding changes in belief and attitude toward information technology usage: a theoretical model and longitudinal test", *MIS Quarterly*, Vol. 28, pp. 229-254.
- Blessa, R. (2010), *Merchandising No Ponto de Venda*, Atlas, São Paulo.
- Bursztyn, L. and Jensen, R. (2016), "Social image and economic behavior in the field: identifying, understanding and shaping social pressure", *Annual Review of Economics*, Vol. 9 No. 1, pp. 1-31.
- Carter, L. and Weerakkody, V. (2008), "E-Government adoption: a cultural comparison", *Information Systems Frontiers*, Vol. 10 No. 4, pp. 473-482.
- CBN (2011), Central Bank of Nigeria Annual Economic Report – 2011.
- CBN (2015), Central Bank of Nigeria Annual Economic Report – 2015.
- CBN (2018), Central Bank of Nigeria Annual Report – 2018, available at: www.cbn.gov.ng/Out/2019/RSD/2018%20AR%20KAMA1.pdf
- Chen, Y.H. and Barnes, S. (2007), "Initial trust and online buyer behaviour", *Industrial Management and Data Systems*, Vol. 107 No. 1, pp. 21-36.
- Chen, Y.-H. and Chengalur-Smith, I. (2015), "Factors influencing students' use of a library web portal: applying course-integrated information literacy instruction as an intervention", *The Internet and Higher Education*, Vol. 26 No. 0, pp. 42-55.
- Chuttur, M.Y. (2009), "Overview of the technology acceptance model: origins, developments and future directions, Indiana university, USA", *Working Papers on Information Systems*, Vol. 9 No. 37.
- Davis, F.D. (1989), "Perceived usefulness, perceived ease of use, and user acceptance of information technology", *MIS Quarterly*, Vol. 13 No. 3, pp. 319-340.
- Davis, F.D., Bagozzi, R.P. and Warshaw, P.R. (1989), "User acceptance of computer technology: a comparison of two theoretical models", *Management Science*, Vol. 35 No. 8, pp. 982-1003.
- Fishbein, M. and Ajzen, I. (1975), *Belief, Attitude, Intention and Behaviour: An Introduction to Theory and Research*, Addison-Wesley, MA.
- Fullerton, G. (2005), "The impact of brand commitment on loyalty to retail service brands", *Canadian Journal of Administrative Sciences/Revue Canadienne Des Sciences de L'Administration*, Vol. 22 No. 2, pp. 97-110.
- Ganesan, S. (1994), "Determinants of long-term orientation in buyer-seller relationships", *The Journal of Marketing*, Vol. 58, pp. 1-19.
- Garbarino, E. and Johnson, M.S. (1999), "The different roles of satisfaction, trust and commitment in customer relationships", *Journal of Marketing*, Vol. 63 No. 2, pp. 70-87.
- Gefen, D., Karahanna, E. and Straub, D. (2003), "Trust and TAM in online shopping: an integrated model", *MIS Quarterly*, Vol. 27, pp. 51-90.
- Grandison, T. and Sloman, M. (2000), "A survey of trust in internet applications", *IEEE Communications Surveys and Tutorials*, Vol. 3 No. 4.
- Guriting, P. and Ndubisi, O.N. (2006), "Borneo online banking: evaluating customer perceptions and behavioural intention", *Management Research News*, Vol. 29 Nos 1/2, pp. 6-15.
- Gwebu, K.L. and Wang, J. (2011), "Adoption of open source software: the role of social identification", *Decision Support Systems*, Vol. 51 No. 1, pp. 220-229.

- Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E. and Tatham, R.L. (2006), *Multivariate Data Analysis*, (6th ed.), Pearson Educational International, Upper Saddle River, NJ.
- Hana, B.S., Mike, M. and Parvaneh, N. (2012), *E-Commerce is the Next Frontier in Global Expansion*, ATKearney, New York, NY.
- Hartmann, F.G.H. and Moers, F. (1999), "Testing contingency hypotheses in budgetary research: an evaluation of the use of moderated regression analysis, accounting, organisation and society", *Elsevier*, Vol. 24 No. 4, pp. 291-315.
- Jebeile, S. and Reeve, R. (2003), "The diffusion of e-learning innovations in an Australian secondary college: strategies and tactics for educational leaders", *The Innovation Journal*, Vol. 8 No. 4.
- Jeong, B.K. and Yoon, T.E. (2013), "An empirical investigation on consumer acceptance of mobile banking services", *Business and Management Research*, Vol. 2 No. 1, pp. 31-40.
- Jose, M.P., Silvia, S.B., Carla, R.M. and Joaquin, A.M. (2013), "Key factors of teenagers' mobile advertising acceptance", *Industrial Management and Data Systems*, Vol. 111 No. 5, pp. 732-749.
- Kabir, M.A., Saidin, S.Z. and Ahmi, A. (2017), "Analysis of factors that influence electronic payment adoption", *Journal of Engineering and Applied Sciences*, Vol. 12 No. 3, pp. 6560-6568.
- Karahanna, E., Straub, D.W. and Chervany, N. (1999), "Information technology adoption across time: a cross-sectional comparison of pre-adoption and post-adoption beliefs", *MIS Quarterly*, Vol. 23 No. 2, pp. 183-213.
- Kim, K. and Frazier, G.L. (1997), "On distributor commitment in industrial channels of distribution: a multicomponent approach", *Psychology and Marketing*, Vol. 14 No. 8, pp. 847-877, doi: [10.1002/\(SICI\)1520-6793\(199712\)14:8<847::AID-MAR6>3.0.CO;2-E](https://doi.org/10.1002/(SICI)1520-6793(199712)14:8<847::AID-MAR6>3.0.CO;2-E).
- Kim, H.B., Kim, T. and Shin, S.W. (2009), "Modelling roles of subjective norms and eTrust in customers' acceptance of airline B2C eCommerce websites", *Tourism Management*, Vol. 30 No. 2, pp. 266-277.
- Kim, T., Lee, J.H. and Law, R. (2008), "An empirical examination of the acceptance behaviour of hotel front office systems: an extended technology acceptance model", *Tourism Management*, Vol. 29 No. 3, pp. 500-513.
- Koufaris, M. (2002), "Applying the technology acceptance model and flow theory to online consumer behavior", *Information Systems Research*, Vol. 13, pp. 205-223.
- Kung, O.Y. (2018), "E-payments for everyone", *Being keynote speech by Mr Ong Ye Kung, Minister for education and MAS board member, at the 45th annual dinner of the association of banks in Singapore on 20 June 2018*.
- Kwantes, C.T. (2009), "Culture, job satisfaction and organizational commitment in India and the United States", *Journal of Indian Business Research*, Vol. 1 No. 4, pp. 196-212.
- Lai, E. and Wang, Z. (2012), *An Empirical Research on Factors Affecting Customer Purchasing Behaviour Tendency during Online Shopping*, Institute of Electrical and Electronics Engineers, pp. 583-586.
- Lee, M., Cheung, C. and Chen, Z. (2005), "Acceptance of internet-based learning medium: the role of extrinsic and intrinsic motivation", *Information and Management*, Vol. 42 No. 8, pp. 1095-1104.
- Lee, Y., Kozar, K.A. and Larsen, K.R.T. (2003), "The technology acceptance model: past, present and future", *Communications of the AIS*, Vol. 12 No. 50, pp. 752-780.
- Liébana-Cabanillas, F., Sánchez Fernández, F. and Muñoz-Leiva, F. (2014), "Antecedents of the adoption of the new mobile payment systems: the moderating effect of age", *Computers in Human Behavior*, Vol. 35 No. 2014, pp. 464-478.
- Lu, Y., Yang, S., Chau, P. and Cao, Y. (2011), "Dynamics between the trust transfer process and intention to use mobile payment services: a cross-environment perspective", *Information and Management*, Vol. 48 No. 8, pp. 393-403.
- Magni, M. and Pennarola, F. (2008), "Intra-organizational relationships and technology acceptance", *International Journal of Information Management*, Vol. 28 No. 6, pp. 517-523.

- Mathieson, K., Peacock, E. and Chin, W.W. (2001), "Extending the technology acceptance model: the influence of perceived user resources", *Acm Sigmis Database: The Database for Advances in Information Systems*, Vol. 32 No. 3, pp. 86-112.
- Meltzer, J.P. and Marulanda, C.P. (2016), "Digital Colombia: maximizing the global internet and data for sustainable and inclusive growth", *Global economy and development at Brookings working paper 96*, available at: www.Brookings.Edu/Global
- Meyer, J.P. and Allen, N.J. (1984), "Testing the 'side-bet theory' of organizational commitment: some methodological considerations", *Journal of Applied Psychology*, Vol. 69, pp. 372-378.
- Meyer, J.P. and Herscovitch, L. (2001), "Commitment in the workplace: toward a general model", *Human Resource Management Review*, Vol. 11 No. 3, pp. 299-326.
- Moore, G.C. and Benbasat, I. (1991), "Development of an instrument to measure perceptions of adopting an information technology innovation", *Information Systems Research*, Vol. 2 No. 3, pp. 192-222.
- Morgan, R.M. and Hunt, S.D. (1994), "The commitment-trust theory of relationship marketing", *Journal of Marketing*, Vol. 58, pp. 20-38.
- Muñoz, C. (2008), "Symmetries and asymmetries of age effects in naturalistic and instructed L2 learning", *Applied Linguistics*, Vol. 29, pp. 578-596.
- Mustapha, S.A. (2018), "E-Payment technology effect on bank performance in emerging economies – evidence from Nigeria", *Journal of Open Innovation: Technology, Market, and Complexity*, Vol. 4 No. 4, pp. 1-14.
- Nedozi, F.O. and Omoregie, C.I. (2019), "An empirical evaluation of different electronic payment channels in Nigeria", *Journal of Finance and Accounting. Special Issue: Financial Inclusion, Accounting Perspectives and Development*, Vol. 7 No. 5, pp. 146-152, doi: [10.11648/j.f.a.20190705.13](https://doi.org/10.11648/j.f.a.20190705.13).
- Ng, T.W.H. and Feldman, D.C. (2011), "Affective organizational commitment and citizenship behavior: linear and non-linear moderating effects of organizational tenure", *Journal of Vocational Behavior*, Vol. 79 No. 2, pp. 528-537.
- Nunally, J.C. and Bernstein, I.H. (1994), *Psychometric Theory*, McGraw-Hill, New York, NY.
- Omotayo, F. and Dahunsi, O. (2015), "Factors affecting adoption of point of sale terminals by business organisations in Nigeria", *International Journal of Academic Research in Business and Social Sciences*, Vol. 5 No. 10.
- Onyeizugbe, C.U. (2013), *Practical Guide to Research Methodology in Management*, Onitsha: Good Success Press.
- Parker, C.M. and Swatman, P.M.C. (2002), "Electronic payment systems", Working Paper Series, available at: <http://dro.deakin.edu.au/view/DU:30010170>
- Pavlou, P.A. (2002), "A theory of planned behavior perspective to the consumer adoption of electronic commerce", *MIS Quarterly*, Vol. 30 No. 1, pp. 115-143.
- Pavlou, P.A. (2003), "Consumer acceptance of electronic commerce: integrating trust and risk with the technology acceptance model", *International Journal Electronic Commerce*, Vol. 7 No. 3, pp. 69-103.
- Pentano, E. and Servidio, R. (2012), "Modelling innovative points of sale through virtual and immersive technologies", *Journal of Retailing and Consumer Services*, Vol. 19 No. 3, pp. 279-286.
- Pikkarainen, T., Pikkarainen, K., Karjaluoto, H. and Pahnla, S. (2004), "Consumer acceptance of online banking: an extension of the technology acceptance model", *Internet Research*, Vol. 14 No. 3, pp. 224-235.
- Rogers, E.M. (1983), *Diffusion of Innovations*, 3rd ed., The Free Press, New York, NY.
- Rusbult, C.E. and Arriaga, B.X. (1997), *Interdependence Theory*, in *Handbook of Personal Relationships*, 2nd ed., Duck, S. (Ed.), John Wiley and Sons, Inc, New York, NY, pp. 221-250
- Sadi, A., Azad, I. and Noorudin, M.F. (2010), "The prospects and user perceptions of M-Banking in the sultanate of Oman", *Journal of Internet Banking and Commerce*, Vol. 15 No. 2, pp. 1-11.

- Singh, J. and Sirdeshmukh, D. (2000), "Agency and trust mechanisms in consumer satisfaction and loyalty judgments", *Journal of the Academy of Marketing Science*, Vol. 28 No. 1, pp. 150-167.
- Soman, D. (2001), "Effects of payment mechanism on spending behaviour: the role of rehearsal and immediacy of payments", *Journal of Consumer Research*, Vol. 27 No. 4.
- Taylor, S. and Todd, P. (1995), "Assessing IT usage: the role of prior experience", *MIS Quarterly*, Vol. 19 No. 4, pp. 561-568.
- Teo, T.S.H. and Pok, S.H. (2003), "Adoption of WAP-enabled mobile phones among internet users", *Omega*, Vol. 31 No. 6, pp. 483-498.
- Tijani, J.A. and Ilugbemi, A.O. (2015), "Electronic payment channels in the Nigeria banking sector and its impacts on national development", *Asian Economic and Financial Review*, Vol. 5 No. 3, pp. 521-531.
- Venkatesh, V. and Bala, H. (2008), "Technology acceptance model 3 and a research agenda on interventions", *Decision Sciences*, Vol. 39 No. 2, pp. 273-315.
- Venkatesh, V. and Davis, F.D. (2000), "A theoretical extension of the technology acceptance model: four longitudinal field studies", *Management Science*, Vol. 46 No. 2, pp. 186-204.
- Wiedmann, K., Hennigs, N., Varelmann, D. and Reeh, M. (2010), "Determinants of consumers' perceived trust in IT-ecosystems", *Journal of Theoretical and Applied Electronic Commerce Research*, Vol. 5 No. 2, pp. 137-154.
- Williamson, O.E. (1993), "Calculativeness, trust, and economic organization", *The Journal of Law and Economics*, Vol. 36 No. 1, p. 453.
- Xie, G., Zhu, J., Lu, Q. and Xu, S. (2011), *Influencing Factors of Consumer Intention towards Web Group Buying*, pp. 1397-1401.
- Yang, M.H., Chandlrees, N., Lin, B. and Chao, H.Y. (2009), "The effect of perceived ethical performance of shopping WebSites on consumer trust", *Journal of Computer Information Systems*, Vol. 50 No. 1, pp. 15-24.
- Zeithaml, V.A., Lenoard, L.B. and Parasuraman, A. (1996), "The behavioral consequences of service quality", *Journal of Marketing*, Vol. 60 No. 2, pp. 31-46.
- Zhao, Z. and Cao, Q. (2012), "An empirical study on continual usage intention of microblogging: the case of Sina", *Nankai Business Review International*, Vol. 3 No. 4, pp. 413-429.
- Zhu, D.S., Lee, Z.C., O'Neal, G.S. and Chen, Y.H. (2009), "The effect of trust and perceived risk on consumers' online purchase intention", *International Conference on Computational Science and Engineering*, pp. 771-776.

Further reading

- Akerlof, G.A. and Kranton, R.E. (2000), "Economics and identity", *Quarterly Journal of Economics*, Vol. 115 No. 3, pp. 715-753.

Corresponding author

Ambrose Ogbonna Oloveze can be contacted at: emrysoloveze@gmail.com

For instructions on how to order reprints of this article, please visit our website:

www.emeraldgroupublishing.com/licensing/reprints.htm

Or contact us for further details: permissions@emeraldinsight.com