NEXUS BETWEEN USERS' PERCEIVED RISK, PERCEIVED LEGISLATION AND E-COMMERCE ACCEPTANCE: IMPLICATIONS FOR E-COMMERCE ADOPTION IN SOUTHWEST NIGERIA

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ABSTRACT

This paper investigates the impact of perceived risk and perceived legislation on e-commerce acceptance. Questionnaire was used to collect data from 666 come-to-claim customers of top 4 e-Commerce organizations. Hypotheses were tested using Hierarchical Regression Analysis. The results revealed that perceived risk and legislation have significant effects on e-Commerce acceptance. The study expanded the application of theory discussed in this study which allow for contribution to the theorizing of e-commerce adoption by substituting behavioural variables with internet security variables to the already established UTAUT model. The paper recommends that government should provide a regulatory framework to drive the e-commerce sector.

Key words: Perceived Risk, Perceived Legislation, Internet Experience, e-Commerce acceptance.

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1. INTRODUCTION

In most industrialized countries of the world, e-commerce contributes a significant quota to the Gross Domestic Product (GDP) of these countries. These improvements have been buoyed by massive ICT advancement in these nations, and Africa is expediently getting up to speed with whatever is left of the world in such manner (CBN Bulletin, 2017). Unfortunately, most African nations are being tormented by bad governance, corruption, insufficient infrastructure, cyber security issues and absence of adequate legislation to manage e-commerce activities which has influenced the acceptance and use of e-commerce. The study looked at the nexus between perceived risk and perceived legislation as some internet security issues that influence the adoption of e-commerce in Nigeria as a developing economy. Perceived risk is a concept that is composed around the possibility that behaviour of purchasers includes risk in the sense that any action by consumer (some of which may prone to be offensive) will deliver results that they can't anticipate with anything close to certainty (Clemes, Gan & Du, 2012). Perceived risk is powerful in expounding a customer's behaviour since consumers are more every now and again persuaded to avoid mistakes than to maximize utility in buying and this has been a main consideration influencing the acceptance and growth of e-commerce in the developing nations (Nasri & Zarai, 2014).

Ackerman and Davis (2008), found out that legislature in developed economies like United State of America (USA) and United Kingdom(UK) have made different endeavors whether by law or by declaration with a specific end goal to manage internet activities in the interest of their residents. This includes rising lawful points of reference and case law to govern security on the internet. In any case, control endeavors have been contradicting and befuddling. For example, the European Commission (EC) chose to orchestrate information security control spreading over European Union individuals and recommended the rule on the protection of people as respects the processing of individual information and on the free pattern of such information. All individuals from the European Union consolidate this enactment with their internal law by 1998 (EIU, 2006). Smith and Chao (2007) found that in view of this legislation, individual information must be transferred to non EU nations, if satisfactory level of protection can be ensured. However, numerous developing economies like Nigeria has not set up sufficient legislation with a specific end goal to protect individual information of customers which has decreased satisfactory, convenience and adoption of e-commerce by customers in the nation. It is against this backdrop that the research looks to determine whether perceived risk and legislation have noteworthy effect on the acceptance of e-commerce in Southwest Nigeria.

2. CONCEPTUAL AND THEORETICAL SYNTHESIS

2.1. Perceived Risk and E-Commerce Adoption

Perceived risk has formally been depicted as a 'mix of vulnerability, and the reality of result included (Yousafzai, Pallister, & Foxall, 2009). The extraordinary and non-individual nature of the online condition and the unlimited uncertainty of the utilization of global facilities for transactions can raise a few risks that can be caused by functional defects or issues of security or by the direct of individuals associated with the online-transaction (Pavlou, 2003). The risk idea is composed around the possibility that the conduct of customers includes risk as in any move made by buyers (some of which might be displeasing) will create repercussions that they can't anticipate with anything close to certainty (Ackerman & Davis, 2008). Perceived risk has a capacity of clarifying purchaser's conduct since customers are more of the time impelled to avoid mistakes than to maximize utility in purchasing (Clemes et al. 2012). Risk

is as often as possible exhibited in a choice situation as clients cannot generally be sure that a planned purchase will accomplish satisfactory goals (Niranjanamurthy & Chahar, 2013).

However, most issues of credit card data compromise are because of merchant internet server's weaknesses (Zhu, 2013). This was upheld by Nasri and Zarai (2014) who contend that the touchy data trade off in e-commerce is not practical amid transmission however the reasonable event can be through inadequate protection of merchant internet servers. If the merchant use security socket layer, at that point the channel of communication will be ensured and along these lines the dangers over the course of transmitting information will be successful and adequately minimized. Different similar studies recognized perceived risk as the one that have a noteworthy negative and direct impact on adoption of e-commerce by customers (Haseeb, Arshad, Ali, & Yasin, 2011; Clemes et al. 2012; Hassan & Sobhan, 2012; Zhu, 2013; Kaur et al. 2015). In any case, the security privacy risk shows to be the major hindering factor in the adoption and growth of e-commerce in the developing economy.

2.2. Perceived Legislation and E-Commerce Adoption

Another essential issue to consider is the need for developing economies to address how to make conducive their legal framework for successful e-commerce transaction. Legislations and regulations include the different endeavors by government either by law or decree, with a specific end goal to give appropriate regulations to the e-commerce environment for the benefit of their citizens (Ackerman & Davis, 2008). This is critical because of the way that the establishment and adoption of a reliable policy and regulatory structure would encourage quick improvement of e-commerce with the related advantages for the economies and citizens (Maaruf & Abdulkadir, 2012). Kinuthia and Akinnusi (2014) opine that government must set up clear laws, rules and regulation, make arrangements of significant technical training to the regulatory authority in order to allow them to authorize the laws adequately. The legislation should likewise include the emerging legal precedents and case law that govern privacy in cyberspace.

However, there is requirement for parties at the core of e-commerce to form legitimate and lawfully binding contracts on the internet. Basic inquiry is the means by which contracts on internet can be formed, performed and upheld as paper documents by parties involved. The organization of the legislation should be appropriately done as such as to be enforceable (Kraft & Kakar, 2009). If government is not needed in privacy concern by sites, they ought to take after self-control. The non-accessibility of lawful e-commerce regulation in the developing economies give a chance to governments to kick-start the procedure by setting up show for e-commerce regulation that can be executed without a wide harmonization struggles that will be required if legislation is required in other developing economies (Maaruf & Abdulkadir, 2012). Also, Kaur (2005) states that security assistance and draft laws on e-digital signature can make efforts to handle violations in computer information area.

3. METHODOLOGY

In the light of the above synthesis, the following research questions were put forward:

- What role does perceived risk play on the acceptance of e-commerce by customers in Southwest Nigeria?

- How does perceived legislation affect the acceptance of e-commerce by customers in Southwest Nigeria?

In line with the research questions above, the following were hypothesized:

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H_{01}: Perceived risk does not have significant effect on the acceptance of e-commerce.

H_{02}: Perceived legislation does not significantly affect the acceptance of e-commerce

3.1. Method of Data Collection

The primary method of data collection was employed in obtaining the data used for the study. A structured questionnaire was constructed to elicit the different opinions of the respondents on the subject matter. 666 copies of questionnaire was distributed, 621 copies was retrieved but 610 copies of questionnaire was used for data analysis. The copies of questionnaire were administered among respondents (users) and data collected at specific periods on weekends most especially on "Black Fridays" at four selected e-commerce providers' pick-up stations in the study area. Weekends was chosen as these are days considered as peak periods in which there is usually influx of come-to-claim customers. The researcher engaged the services of research assistants to assist in questionnaire administration and data collection most especially in Osun State, Ondo State and Ekiti State. This was done to fill the long distance gap in accessing respondents as the researcher resides in Lagos and suburbs. The assistants were trained on the aspects of the questionnaire and how to handle the respondents to ensure that ethical considerations are observed.

The population of current research consists of total citizens or people in Southwest, Nigeria assumed to be users of e-commerce platforms in the country. These people are assumed to have shopped online at one time or the other. The assumption is made possible by the researcher given the difficulty in determination of total e-commerce users in the study area. However, the study population is considered to be infinite as figure exceeds 50,000. To reach targeted population, the study focuses on four main pillars of e-commerce service providers in Nigeria which are Jumia, Konga, Payporte, and Yudala (CBN Bulletin, 2017). The researcher utilized a sample determination formula by Cochran (1977) for infinite population to determine a representative sample for the study. Representative sampling is considered as a criterion for drawing inference about the population (Brown, 2001; Burns, 1999). Accordingly, the formula is given as thus;

$$n_0 = \frac{z^2 pq}{e^2}$$

where, n_o is the sample size, z is the selected critical value of desired confidence level, p is the estimated proportion of an attribute that is present in the population, $q = 1 - p$ and e is the desired level of precision (Cochran, 1977).

The study assumes the maximum variability to be 50% ($p = 0.5$) and taking 99% confidence level with ±5% precision, the calculation for required sample size will be as follows;

$p = 0.5$ and hence $q = 1-0.5 = 0.5$; $e = 0.05$; $z = 2.58$

So,

$$n_0 = \frac{(2.58)^2 (0.5)(0.5)}{(0.05)^2}$$

$n_0 = 665.64 = 666$

In selecting sample for the study from each e-commerce provider and from each state upon which questionnaire were administered, the study adopted multi-stage sampling techniques. This comprises of convenience, stratified and random sampling techniques.

The study, in part, followed Partial Least Squares (PLS,) statistical procedures employed by original developer of UTAUT Model (Venkatesh *et al*, 2003). It provides framework for complex context like current study to be empirically analysed with components latent factors

which possess predictive power. In other words, this method combines characteristics of both principal components analysis and multiple regression analysis. On the other part, the study employed Ordinary Least Square (OLS) method to complement non-estimation power of PLS in arriving at models adjusted R – Square measures which can be used to assess the relative significance of several models. Adequate and reflective components of e-commerce acceptance and e-commerce predictors were obtained through PLS prior to further analysis via OLS.

Internal consistency reliabilities of items or observed variables in explaining latent factors and validity (convergent and discriminant) among factors were determined through measurement model estimation from PLS. This is consistent with previous research on technology acceptance by new users (Venkatesh et al, 2003). Eight items were each used to proxy predictors of e-commerce acceptance while five items and six items were used to measure e-commerce acceptance and users' e-commerce use behaviour respectively. The study hypotheses were tested using Hierarchical Regression. The measurement model shown in the table below reveals outcome of ICR, validity test and item loadings from PLS.

Table 1 Preliminary Test of Constructs (Measurement Model)

	ICR	Mean	S. Dev.	$\sqrt{\sigma^2}$	PERI	PELE	ACCE
PERI	0.79	4.01	1.04	0.87	1.000[*]		
PELE	0.83	4.25	1.12	0.88	0.234[**]	1.000[*]	
ACCE	0.88	3.87	0.55	0.85	0.533[*]	0.607[**]	1.000[*]

[*] $p < .01$; [**] $p < .05$

Note: i. ICR: Internal Consistency Reliability

ii. $\sqrt{\sigma^2}$: Square root of the shared variance between the constructs and their measurement items.

iii. Diagonal elements represent Pearson Correlation coefficient between constructs (PERI= Perceived Risk; PELE = Perceived Legislation and ACCE = E-Commerce Acceptance)

Table 2 Measurement Model - Loadings from Partial Least Regression

Construct	Items	Loadings
Perceived Risk (PERI)	PERI1	0.864
	PERI2	0.629
	PERI3	0.761
	PERI4	0.698
	PERI5	0.879
	PERI6	0.936
	PERI7	0.629
	PERI8	0.891
Perceived Legislation (PELE)	PELE1	0.913
	PELE2	0.645
	PELE3	0.712
	PELE4	0.828
	PELE5	0.887
	PELE6	0.782
	PELE7	0.918
	PELE8	0.831
	ACCE1	0.808

E-Commerce Acceptance (ACCE)	ACCE2	0.693
	ACCE3	0.835
	ACCE4	0.731
	ACCE5	0.855

4. DATA PRESENTATION

Table 3 Demographic Information of Nigerian Citizens in the South-West Region

Variable	Item	Frequency	Percentage (%)
Gender	Male	418	68.5
	Female	192	31.5
	Total	610	100
Age	20 – 30 years	134	22.0
	31 – 40 years	232	38.0
	41 – 50 years	195	32.0
	51 years and above	49	8.0
	Total	610	100
Education	WAEC/WASCE	37	6.1
	ND/NCE	114	18.7
	HND/B.Sc	380	62.3
	Masters	48	7.8
	Others	31	5.1
	Total	610	100
Internet Experience	0 – 2 years	125	20.5
	3 – 5 years	246	40.3
	6 – 8 years	173	28.4
	9 years and above	66	10.8
	Total	610	100

Source: Field Survey, 2018

4.1. Constructs Preliminary Test

The study conducted preliminary test for all the constructs with the exception of e-commerce usage. A measurement model for the three constructs via PLS was estimated to this effect. Information revealed in Table 1 indicates that all the constructs internal consistency reliabilities were greater than 0.7, thus, the constructs possess high reliability and as such acceptable (Hair *et al*, 2006; Pallant, 2011; Hinton *et al*, 2004; Compeau *et al*, 1999; Compeau & Hoggins, 1995; Fornell & Larcker, 1981).

4.2. Test of Hypotheses

Hypothesis One: Perceived risk does not have significant effect on the acceptance of e-commerce.

Table 4 Hierarchical Regression Result (PERI)

Dependent Variable: ACCEMEAN

Model	Predictor	Coefficient	Std. Error	P>|t|	P-value	R^2
1 – Item Level	*F – Stat*				0.0900	0.41
	Peri1	-.0603481	.033228	0.070		
	Peri5	.0902111	.0192304	0.190		
	Peri6	-.5427728	.0291565	0.000		
	Peri8	.5427728	.0234153	0.275		
	_cons	-1.004407	.2841022	0.000		
	AIC	-300.702				
	BIC	-278.938				
	Breusch-Pagan	236.92			0.4421	
2 – Aggregate Level	*F - Stat*				0.1000	0.12
	Perimean	-.7045532	.0771799	0.000		
	_cons	1.142054	.3498709	0.001		
	AIC	454.5513				
	BIC	445.7244				
	Breusch-Pagan	64.64			0.5910	

Source: Field Survey, 2018

The information in the table above reveals the outcome of the regression analysis conducted after taking into consideration the results of earlier Exploratory Factor Analysis (EFA) in chapter three. The EFA revealed one factor variable for perceived risk and this was found to be much explained by item 1, item 5, item6 and item 8 of risk variable in the questionnaire instrument. These items were used as risk predictors of e-commerce acceptance represented by composite mean of one factor construct. Expectedly, the result in the Table depicts the overall significance of risk variable model to explain e-commerce acceptance in the study area and thus shows joint insignificance of all the risk predictors. This is informed by probability value of *F – statistics* (*.1000*) against adopted 5% level of significance. The information in the Table indicates that Schwarz Bayesian Information Criterion (BIC) was preferred to Akaike Information Criterion (AIC) given its smaller value. Again, the non-significance of Breusch-Pagan / Cook-Weisberg test for heteroskedasticity in the Table indicates acceptance of null hypothesis of constant variance for all the predictors and predicted variables.

Hypothesis Two: Perceived legislation does not significantly affect the acceptance of e-commerce

Table 5 Hierarchical Regression Result (PELE)

Dependent Variable: EUSEMEAN

Model	Predictor	Coefficient	Std. Error	P>|t|	P-value	R^2
1 – Item Level	*F- Stat*				0.0000	0.69
	Pele1	.4982818	.0388395	0.000		
	Pele4	.600907	.0463036	0.000		
	Pele5	.7000958	.0758787	0.000		
	Pele7	1.682522	.065464	0.000		
	Pele8	1.099189	.0652403	0.000		
	_cons	3.662132	.1696141	0.000		
	AIC	104.0663				
	BIC	130.547				
	Breusch-Pagan	230.58			0.1930	
2 – Aggregate Level	*F- Stat*				0.0000	0.20
	Pelemean	.6042745	.0498776	0.000		
	_cons	6.796403	.2135136	0.000		
	AIC	686.7133				
	BIC	695.5403				
	Breusch-Pagan	112.21			0.3108	

Source: Field Survey, 2018

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Following probability value of *F* – statistics as revealed by Table 5, perceived legislation items as predictors were significant to explain e-commerce acceptance, thus, shows joint significance of all legislation predictors. Diagnostics checks for scrutiny indicate that Akaike Information Criterion (AIC) was preferred to Schwarz Bayesian Information Criterion (BIC) given its smaller value. The non-significance of Breusch-Pagan test also confirms the acceptance of null hypothesis of common variance for error terms in the model, hence, suggests efficiency in e-commerce acceptance prediction. In addition, the researcher estimated total impact of perceived legislation variable items proxy by component mean score of the items on e-commerce acceptance. This was conducted via hierarchical regression analysis. The analysis of aggregate legislation variable in the second model is premised on the need to explain indirect effect of the predictor on e-commerce use and allow comparison between item level model and aggregate data level model. Result in the Table reveals that at aggregate level, users' perceived legislation of e-commerce significantly and indirectly increase the adoption of e-commerce in Southwest Nigeria. This provides justification for the rejection of second null hypothesis. However, the adjusted R-square measures from the two models indicate that item level model was good and adequate than aggregate model though the outcomes of the two models exhibit better fits.

Table 6 OLS Regression Result

Dependent Variable: E-COMMERCE USAGE

Model	Predictor	Coefficient	Std. Error	P>|t|	P-val.	R^2	Adjusted R^2
1 – Item Level	*F – Stat*				0.0000	0.41	0.40
	ACCE	0.80504	0.0399	0.000		0.399	0.398
	_cons	0.72952	0.1739	0.000			
	AIC	507.1427					
	BIC	515.9696					
	Breusch-Pagan	41.60			0.4398		

Source: Field Survey, 2018

The information in Table 6 reveals findings about direct effect of e-commerce acceptance on usage behaviour in the study area. In addition to overall significance of the model, there was constant variance of stochastic terms in which e-commerce usage may be predicted directly through e-commerce acceptance over time. From the Table, e-commerce usage behaviour by users was strongly and positively predicted by the acceptance of such technological improvement to buying and selling transactions.

Table 7 Hierarchical Regression Result (Moderating Effect)

Dependent Variable: E-COMMERCE ADOPTION

Model	Predictor	Coefficient	Std. Error	P>|t|	P-val.	R^2	Adjusted R^2
1 – Inexperienced Users	*F - Stat*				0.0000	0.417	0.415
	ACCE	.8035097	.0541155	0.000			
	_cons	.7679341	.2366083	0.001			
	AIC	227.505					
	BIC	234.9781					
	Breusch-Pagan	34.01			0.9217		
2 – Experienced Users	*F - Stat*				0.0000	0.66	
	ACCE	.7842869	.6608927	0.000		0.370	0.367
	_cons	.7848418	.2631331	0.003			
	AIC	262.0853					
	BIC	269.3903					
	Breusch-Pagan	34.01			0.0803		

Source: Field Survey, 2018

From Table 7 it was revealed that direct effect of e-commerce acceptance on usage behaviour varied with level of experience. Adjusted R^2 measures from the two models in Table 3.8 illuminate that model one have higher comparative advantage. That is, the strength of such relationship between e-commerce acceptance and usage behaviour was stronger for inexperienced users than experienced group of users.

5. CONCLUSIONS

It was discovered that the two predictors (Risk and Legislation) have insignificant and significant effects respectively on e-commerce acceptance. When users' risk perception level increases, the level of e-commerce acceptance in Southwest Nigeria doesn't diminish significantly. This result conforms to *a priori* expectation of the study and in agreement with previous findings such as Agwu *et al* (2014); Agwu and Murray (2014); Clemes *et al* (2012). On the other hand, an increase in the level of users' perceptions about legislation significantly causes a rise in the rate of e-commerce acceptance in the study area. This result is in line with other empirical studies by Kwando *et al* (2016) and Zhu (2013). In the same manner, direct effect analysis outcome illuminates that an increase in e-commerce contributes significant and positive increase in e-commerce usage behaviour by the users. In other words, users' perceived legislation and regulations regarding e-commerce appears to be significant determinant of e-commerce acceptance in Southwest Nigeria. However, findings revealed that the strength of relationship between e-commerce acceptance and e-commerce use in Southwest geopolitical zone varies with the level of internet experience. This finding is consistent with previous finding by Venkatesh *et al* (2003). In a nutshell, this study provides empirical evidence that both users' perceived risk and legislation about e-commerce platforms in Southwest Nigeria are important determinants of such technology (e-commerce) acceptance which ultimately have positive and significant effect on adoption rate.

6. LIMITATIONS AND FUTURE RESEARCH

It is noteworthy that in the course of this study the researcher was faced with some limitations. The scope of the study was limited to only one geo-political zone in Nigeria with six states. Also, the study utilized only four (4) top e-commerce organizations in Nigeria. The study also covered only come to claim customers of four top e-commerce organizations in only one geo-political zone in Nigeria where the level of education is high and there is availability of internet facilities. The sample size is not large enough. The implication of this is that the study may not be generalized to other e-commerce organization and other geo-political zones in Nigeria. Therefore, to increase the validity and generalization of the findings, attempts should be made by future research on a larger sample size with more responses from customers, other geo-political zones in Nigeria as well as more e-commerce organizations should be considered.

For simplification purposes, factors such as value of customers, Nigeria purchasing culture and privacy protection of customer's online information and customer's trust were not included in this study. Therefore, further studies may be carried out to find out the impact of these factors on e-commerce acceptance in Southwest Nigeria.

Finally, future research works can investigate the impact of these factors on e-commerce acceptance by corporate e-commerce customers.

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