

EFFECT OF RISK PERCEPTION ON ONLINE PURCHASE BEHAVIOR AMONG NIGERIA CONSUMER: THE MODERATING ROLE OF GENDER

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Abstract

There is a continued consumption surge of goods purchased through various online platforms. There exists perceived risk involved despite benefits derivable from digital environment. This study was therefore, carried out to examine the level of risk perception and its effects on online purchasing behavior in Nigeria. The current study examined how different dimensions of consumer perceived risk influence online shopping behaviors in Nigeria. Data for the study were collected using self-constructed structured questionnaire administered to 210 respondents out of which data from 198 respondents were suitable for coding and analysis. Data were collected using valid and reliable questionnaires and analyzed using SPSS version 16.0 and STATA version 12.0. The result of the analysis show that the frequency of online purchase has increased despite perceived risk involved. The study concludes that the highlighted perceived risk factors as well as gender and product type significantly influence decision to use and continued use of online purchasing medium in Nigeria.

Keywords: Risk, online shopping, gender, product type

Introduction

Man is faced with choices every day with numerous decision scenarios that is usually described with different classifications or not (Dietrich, 2010). One factor that influences these decisions is culture which is often typified by changing lifestyles, family structure, education level and income among other elements. These characteristics play definitive role in determining consumers' marketing choices and consumption both online and traditional as shown by volume, type and frequency of purchases (Choi *et al.*, 2013). Socio-economic characteristics like gender also contribute to online purchasing behaviors.

For the application of these choices in the marketing front that was dominated by the traditional form of brick-and-mortar store especially in Nigeria before digital and online shopping option's advent. The birth of internet gave rise to different opportunities including increasingly popular online shopping which ranks at the fourth most popular internet activity (Ariffet *al.*, 2017; Agbonifoh and Odia, 2020). These, increasingly popular and populated, online marketing platforms gives opportunity for expansion of shopping options beyond traditional methods easing stress and ensuring efficient use of time (Agbonifoh and Odia, 2020).

According to import-export.societalgenerale.fr/e-commerce, Nigeria has about 21 million online buyers and e-commerce sector was estimated to be worth US\$13 billion in 2018. This figure is expected to increase to approximately 320 million by the year 2030. E-Commerce in Nigeria is one of the fastest growing sectors of Nigeria's Digital Economy. Few of e-retailers in Nigeria provide occasional free home delivery, although a nominal fee is charged for very small price orders. However, online shopping carries its own unique identity of extensive use of technology for transactions, the distant and impersonal nature of the online market environment, and the implicit uncertainty of using open network infrastructures for transactions (Naiyi, 2004).

Other similar initiatives area unit benefits like problem free return policies within 7–30 days, referral discount, wish list, try and purchase, tracking the consignment once the product is ordered etc. Consumers encounter and perceive risks as they make shopping online in different forms and rates. These riskshave effects that can be measured on different factors that includeage, personality, gender, income etc. Therefore, it is imperative for policy makers and marketers that carry out the online shopping to understand the sub dimension risks that customers perceive in online shopping, as well as comprehending the variation in the risk among individuals. This is important for designing proper risk mitigating strategies at critical points of the market.

There seem to be increased sophistication among online consumers while demanding for the availability and abundance of products, services, information, technology, which also include retail stores and channels (Terblanche and Boshoff, 2004). Holbrook, (1994) identified inherent perceived risk navigated to obtain value remains a fundamental consumption goal and pivotal to all successful exchange transactions. This development might make retailers to attempt transforming shopping into a high-value pursuit and are highlighting consumer value as an important source of competitive advantage (Woodruff, 1997).

Nevertheless, there is a relative size of body of research on online purchase especially in developing economies such as Nigeria that is growing continually. Further, empirical literature on online purchasing decision, consumption exists, and factors influencing them need to be reinforced empirically. Consumption decisions, if not always, involve weighing the perceived risks and benefits (Jensen and Sandøe, 2002). Therefore, the purchase decision depends upon the relative risk and benefit perceived, and such evaluation process needs a better understanding for online purchasing. In this research we are going to explore and examine the consumer's perception of risk that impedes the adopting online shopping.

It is based on these yawning gaps that output of facts from research for literature intends to generate. This study is designed to complement increasing number of studies conducted on determinants of the use of online purchasing behaviors in Nigeria. This study therefore analysed the possible determinants of individual's online shopping decision and sustained/continued use of online shopping in terms of risk, product type, and socio-demographic characteristics like gender of respondents. Therefore, the research questions that guide this study are: (i) how do perception of risk influence the use of online purchasing medium (ii) What influence do risk perception have on sustained use of online purchasing medium? The study was thus conducted to (i) investigate factors influencing the use of online purchasing medium; (ii) examine factors influencing sustained use of online shopping medium.

LITERATURE REVIEW

Marketing is the overarching cover to the key concepts of consumer behavior, or buyers behavior and risk perception especially in exchange of goods and services. One of the critical concepts that are tangential to this research is consumer behavior. This concept can be described as a key part of marketing that is defined as the study of means and methods of purchasing, using and disposing goods, and services to meet the requirement of wants and needs. Another of the concept is the Buyers behavior that can be defined as the process and conduits within which products and services are used for individual or collective uses for utility derivation. There are various factors that contribute to consumers buying behavior that is having effects on the ability and frequency of customers to make their decision on purchasing. Marketing are broadly divided into two types viz. physical and online marketing. Among the many advantages of online shopping are the benefits of convenience, time and money savings.

The two types of marketing itemized earlier have their own inherent risks factors involved. For this study, there are different on-line shopping risk factors that have been iterated on various research papers. Online shopping can be described as the use of internet for shopping and this new form of marketplace is affected by additional risks not encountered in conventional marketplaces. Some of the various identified risks include financial risk, product risk, delivery risk, time convenience risk, and privacy risk.

For the empirical review of methods of analyzing various risk iterated earlier. Brooker (1984) researched the consumers' perception of some selected risk variablesthat were considered important issues on the utilization of generic food merchandise. The work was executed employing a varimax rotation correlational analysis. This inferential analysis was to measure perceived risk scale components for the examination of the factor structure. Furthermore, the work considered non-personal risk issue which include financial, performance, physical, and time loss and private risk issue (i.e., psychological and social loss) as cogent to their work. Personal risks were outlined because it is believed that risks that are related to self-image and self-concept are factored into social analysis. This work intend to build on previous work carried out, by comparing improving knowledge bank on perceived risk of marketing from traditional marketplace to understanding factors influencing risk taking in online shopping. Window shopping in physical market place is expected to be different from that of online shopping with fears of various risks. Internet searching offers the advantages of convenience, time and cash savings. On another note, use of net for searching is full of further risks not encountered in standard marketplaces (Noort, Kerkhof, & Fennis, 2007).

Goodrich and de Mooij (2013) in the research showed that cultural dimensions can be considered for comparing the use of social media and other information sources when consumer decision-making takes place. They indicated that the type of information sources accessed and used can influence online purchase decisions. It was further revealed that culture affects the influence that social media wield on purchases type and frequency while there is a different influence of traditional word of mouth (WOM) through family or friends.

Lin *et al.*, (2019) in their seminal work titled "Exploring Gender Differences in Online Consumer Purchase Decision Making: An Online Product Presentation Perspective", specifically investigated the differentials of gender in the effects that perceived risk wield on first and

subsequent consumer attitude towards online purchase intentions. The work identified the importance of awareness of gender role for consumers to develop web presence. The research also measured the gender role in frequency of online purchasing. Findings from the work showed that the means and methods of online product presentation contributed immensely to purchase intention more strongly for males than females.

Naiyi (2004) reported that consumers' perceived risk in Internet shopping and attempt to design framework for effective managerial use in China's e-commerce market environment. Kartiwiet *al.* (2018) reported that e-commerce is beneficial for small-and medium-sized enterprises while Bucko et al. (2018) reported that trading through modern technology allows a quick response to the emerging trends in products purchasing. Naz (2019) posited that the benefits of online shopping for customers include time saving, convenience and no restriction by store hours or location.

Today, E-commerce has become the popular way of conducting business all over the world (Downing and Liu, 2014) owing to associated benefits. Studies on e-commerce, especially with emphasis on online purchases have variously been carried out. Lim *et al.* (2016) reported that perceived effectiveness of process and affordability and quality of products bought through online purchases significantly influenced online purchasing in Malaysia while Nuno and Paulo Rita (2016) reported that privacy concerns determines online purchasing in Portugal. Inegbedionet *al.* (2016) reported that privacy and usefulness of online medium were determinants of online purchasing decision in Nigeria. Pilik (2013) reported that age, internet literacy, problems of product returns and delivery of the wrong product was significant determinants of online purchasing. Despite the popularity online purchasing is gaining, consumers are not much habituated yet to practice online shopping frequently in Nigeria. This behavior is a function of online purchasing decisions made by Nigerians. This decision is traced to risk factors associated with online purchasing decision, web-based factors influencing online purchasing intension, and socio-economic characteristics of intending buyers. Published studies in this area were focused mainly on the influence of privacy concern (Bianchi and Andrews, 2012, Nuno and Paulo, 2016) and personal characteristics (Pilik, 2013) on online purchasing behavior. However, these studies did not only not measure the influence of the above mentioned factors on continued use of online purchasing medium but also did not investigate the influence

of risk, web-related and socio-economic factors on the decision to use and continued use of online purchasing. Also, Inegbedion *et al.* (2016) used Analysis of Variance (ANOVA) to investigate factors influencing consumers' attitude toward internet buying in Nigeria while Lim *et al.* (2016) used Structural Equation Modeling to examine factors influencing online purchasing behavior. These studies did not use binary choice model to measure decision or otherwise.

Research methodology

Data and Estimation Method

The population for this study consists of internet users, studying and doing business in Ondo State, Nigeria. Data were collected from a randomly selected 210 school teachers out of which information from 198 respondents were suitable for analysis. To ensure representativeness, especially in terms of primary and secondary private schools (school categorization), the study used quota sampling with the two-dimensional categorization. Semi structured questionnaire was used to elicit information from respondents. Data were collected on socio-demographic information, risk related factors, web-based information etc. Data collected were estimated using a sequential decision making model called regression model and descriptive statistics.

Generally, the conceptual model of this study was based on the integration of cultural theory or cultural theory of risk (Douglas and Wildasky, 1982) and (Ajzen, 1991). In this study, perceived risk is independent variable, gender (dependent variable/independent variable) and product type (dependent variable). A questionnaire was designed and employed to measure financial risk, product risk, non-delivery risk and convenience risk in the study. They were developed based on the work of Swinyard and Smith (2003), Forsythe *et al.* (2006) and Javadiet *al.*, (2012).

Model specification

The analytical model presented in this article is based on the literature on individual decision making process. Multiple regression analysis and Chi-Square analysis was used. Descriptive and inferential statistics employed for this work was to describe the consumers engaging in online shopping and measure the strength of the relationship between one dependent variable and a

series of other independent variables. The advantage of regression is in its ability to describe direction of interaction and it provides the forecasts and explains the variations in the forecast variable in the past.

The function is as stated thus:

$$Y_i = \beta_0 + \beta_i X_i + U$$

Y = Use online shopping medium;

X_i = Independent variables (socio-economic characteristics, risk factors, web-based factors)

β_0 = Intercept parameters

β_i = Slope of estimated parameters

U = Error term

β_1 = Gender of respondents

β_2 = Age of respondents (years)

β_3 = Formal education (years)

β_4 = Monthly income

β_5 = Other source of income

β_6 = Product type

β_7 = Perception on financial risk

β_8 = Perception on product risk

β_9 = Perception on convenience

β_{10} = Perception on privacy

β_{11} = Online literacy

β_{12} = Year on internet

β_{13} = Ownership of browsing device

β_{14} = Amount spent on data monthly (₺)

Results and Discussion

Online shopping typology and frequency

Table 1 shows the result for the frequency and Online shopping typology and frequency of the respondents. From the 198 sample respondents, 106 have made purchase through online medium at least once within a six months period while 92 have not used online medium within this period. Results further showed that 151 of the users have continued in the use of online medium as purchasing outlet. The average number of times items were purchased online in the last six month were 4 ± 2.1 and 8 ± 1.6 for all users and continued users, respectively (Table 1).

Table 1: Online purchasing typology

Characteristics	Online purchasing	Non-online purchasing
Number of sample	106 (54%)	92(46)
Average number of times shopped in the last six months	4 ± 1.8	-

Summary statistics of variables used

There are more males (59%) among the respondents and the average age was 23 ± 7.6 years and 21 ± 6.1 for male and female groups respectively (Table 2). The average number of year of formal education was 13 ± 1.6 and 13 ± 1.7 years while the average monthly income was ₺ $15,200 \pm 12.1$ and ₺ $16,600 \pm 18.3$ for male and female respondents respectively. About 29 and 41 percent of male and female respondents respectively engaged in other source of income for the purpose of getting multiple streams of income and about 42 and 51 percent of male and female online shoppers respectively bought large products.

The results on risks factors shows that 61 and 45 percent of (male and female respectively) perceived that online purchasing is financially risky while 72 and 81 percent of male and female shoppers respectively perceived that online purchasing is full of product risks in terms products quality. Also, 88 and 61 percent of male and female respondents respectively perceived that

online purchasing is convenient while 71 and 80 percent of male and female online shoppers respectively perceived that online purchasing ensures privacy (also Table 2). The high proportion of respondents who perceived that purchasing through online medium is full of financial and product risks did not seem to reduce the proportion of respondents favoring online purchase.

The results of web-based factors showed that just 41 and 32 percent of the male and female groups respectively had online literacy. The low proportion of respondents who had online literacy could be responsible for non-used of online medium by large proportion of respondents. The average year of use of internet in the area was 9 ± 2.2 and 9.1 ± 4.1 years for male and female shoppers respectively. This implies that the respondents had spent moderately good number of years using the internet. High proportion (92%) and (94%) of the two groups respectively were reported to own browsing device. The average amount spent on subscription monthly by the male and female groups respectively was $1,047\pm 292$ and $1,350\pm 300$ (also Table 2).

Table 2: Description and summary statistics of variables used

Variables	Description	Male(0.59+0.49)		Female(0.41+0.32)	
		Mean	SD	Mean	SD
Socio-demographic					
SEX	Sex of respondents (1=male; 0= female)	0.59	0.49	0.41	0.32
AGE	Age of respondents in years	23	7.6	21	6.1
YEAREDU	Number of years of formal education	13	1.6	13	1.7
MONTHINCOME	Monthly income (₺)	15,200	12.1	16,600	18.3
OFFINCOME	Other source of income (1 if participate in part time job, 0 otherwise)	0.29	0.46	0.41	0.28
PRODUCTYPE	The varying type of products (1 if large product, 0 Otherwise)	0.42	0.27	0.51	0.38
Risk factors					
PERCFINRISK	Perception on financial risk (1 if	0.61	0.41	0.45	0.33

	financial risk is perceived, 0 otherwise)				
PERCPRDRISK	Perception on product risk (1 if product risk is perceived, 0 otherwise)	0.72	0.47	0.81	0.45
PERCCONV	Perception on convenience (1 if convenience is perceived, 0 otherwise)	0.88	0.32	0.61	0.41
PERCPRIVACY	Perception on privacy (1 if privacy is perceived, 0 otherwise)	0.71	0.36	0.80	0.59
Web-based factors					
ONLINELIT	Online literacy (1 if had online literacy, 0 otherwise)	0.41	0.22	0.32	0.21
YRINTERNET	Year on internet	9.0	2.2	9.1	4.1
DEVICOWNSHIP	Ownership of browsing device (1 if owned, 0 otherwise)	0.92	0.24	0.94	0.19
DATAAMT	Amount spent on data monthly (₦)	1,047	292	1,350	300
Dependent variable variables					
Use online shopping medium	1 = use, 0 = non-use				
Perceived risk	1 = perceived risk, 0 = no perceived risk				

₦ is Nigerian currency

₦ 1 = 0.0025

Factors that influence respondents' choice to purchase online

According to the data set on Table 4, product availability (30.1%) and (28.5%), price (18.2%) and (20.8%), special features of the product (15.3%) and (14.2%) are the most often considered factors that make male and female respondents respectively to decide to make online shopping. The factors that are also mentioned by respondents include product type(11.3%) and (10.5%), packaging (9.5%) and (11.1%), convenience (9.5%) and (10.2%), and for fun or curiosity (6.1%) and (4.7%) for male and female online shoppers respectively. The factors most important to respondents' choice to purchase online are reported in Table 3.

Table 3: Factors most important to respondents' choice to purchase online

Influencing factors	Male	Female
	Response percentage	Response percentage
Convenience	9.5	10.2
Product availability	30.1	28.5
Price	18.2	20.8
Packaging	9.5	11.1
Special features of the product	15.3	14.2
Just for fun or curiosity	6.1	4.7
Product type	11.3	10.3

Impact of past online buying behavior on intention to purchase risk perception

Linear regression was employed to assess whether perception of risk involved in the online purchase process would predict future online purchase behavior. The behavior of consumers as it pertains to future buying was assessed in this work by using statistical methods to measure intention to purchase on a five point scale (Cronbach Alpha=0.84). A pre-test was carried out to test the validity of the questionnaire and variables. This was done to ensure no violation of the assumptions of normality, linearity, multicollinearity and homoscedasticity. The total variance

explained by the model as a whole was 6.1%, $F(1,198)=13.823$, $p<0.05$. In the model employed for this research, one of the variables labelled “Online purchase behavior” was statistically significant ($\beta = 0.255$, $p<0.05$). This implies therefore that 6% of future online buying behavior of the respondents can be explained by past online buying behavior. The regression result shows the relationship between independent variables of financial risk, delivery risk, time risk, product type, privacy risk, gender and the dependent variable (online shopping).

Table 5: Regression Model

Model	Sum of Squares	dF	Mean Square	F	Sig.
Regression	51.983	4	11.391	17.061	0.000 ^b
Residual	51.173	76	0.962		
Total	103.156	80			

Model	Unstandardized B	Coefficients Std. Error	Standard Coefficient Beta	T	Sig.
(Constant)	2.815	0.087		31.565	0.000
Delivery	0.129	0.079	0.212	1.446	0.152
Financial	0.072	0.079	0.064	0.830	0.509
Time	-0.283	0.079	-0.260	-3.387*	0.001
Product	-0.635	0.079	-0.584	-7.602*	0.000
Privacy	-0.414	0.079	-0.280	-3.642*	0.000
Gender	-0.137	0.079	-0.198	-2.815*	0.000

In regression model the R Square coefficient value is coming out to be .537 which means that the variations in predictors can explain 53.7% variation in dependent variable. The model also gives interesting insights into our response data. Product type, time and privacy risk come out to be

significant predictors as Sig. Value is less than 0.05. Also, all these variables have inverse relation to purchase intent as it can be seen the negative values of unstandardized B.

As per the results, Gender, product type, time and privacy risk found to be the variables which have impact on purchase intention of the respondents.

Conclusion

Traditional purchasing seems to be losing grounds, as Online purchasing rapidly grows with improvement in internet infrastructure. Several factors have been found influencing online purchasing behaviour in terms of buying decision. The study concluded that factors influencing the use of online purchasing medium are gender, product, time, privacy risk while factors influencing choice to purchase online include product availability, price and special features of the product.

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