

**DETERMINANTS OF TERTIARY STUDENTS' E-SHOPPING ACCEPTANCE IN LAGOS STATE, NIGERIA**

**A Thesis Submitted to the School of Post Graduate Studies, University of Lagos, in Partial Fulfillment of the Requirements for the Award of Doctor of Philosophy (Ph.D.) in Marketing.**

**BY**

**NWAGWU, KENNEDY OGBONNA**

**B.Sc. (Hons) Business Management (Port Harcourt), M.Sc. Marketing (Lagos)  
Matriculation Number: 029023071**

**October, 2016**

SCHOOL OF POST GRADUATE STUDIES  
UNIVERSITY OF LAGOS

**CERTIFICATION**

This is to certify that the thesis:  
**DETERMINANTS OF TERTIARY STUDENTS' E-SHOPPING  
ACCEPTANCE IN LAGOS STATE, NIGERIA**

Submitted to the  
School of Postgraduate Studies  
University of Lagos

For the award of the degree of  
**DOCTOR OF PHILOSOPHY (Ph.D.)**  
is a record of original research carried out  
By:  
**NWAGWU, KENNEDY OGBONNA**  
In the Department of Business Administration

<u>NWAGWU, KENNEDY OGBONNA</u> AUTHOR'S NAME	<u></u> SIGNATURE	<u>29-12-16</u> DATE
<u>Dr. P.K.A. Ladipo</u> 1 <sup>ST</sup> SUPERVISOR'S NAME	<u></u> SIGNATURE	<u>29-12-16</u> DATE
<u>Dr. Ayo Dinku</u> 2 <sup>ND</sup> SUPERVISOR'S NAME	<u></u> SIGNATURE	<u>29/12/16</u> DATE
<u>Dr. Olufemi Akintunde</u> 1 <sup>ST</sup> INTERNAL EXAMINER	<u></u> SIGNATURE	<u>29/12/16</u> DATE
<u>Dr. Imoke Ogunleye</u> 2 <sup>ND</sup> INTERNAL EXAMINER	<u></u> SIGNATURE	<u>29/12/16</u> DATE
<u>Prof. Patrick Olajide Oladole</u> EXTERNAL EXAMINER	<u></u> SIGNATURE	<u>29/12/2016</u> DATE
<u>DR. OLATUNDE JULIUS OTUSANYA</u> SPGS REPRESENTATIVE	<u></u> SIGNATURE	<u>29/12/16</u> DATE

# DECLARATION

I declare that this dissertation submitted for the degree of Doctor of Philosophy in Marketing is my own original work and has not been previously submitted to any University or institution for any academic award. I further declare that all sources cited or quoted have been acknowledged and referenced to the best of my knowledge.



.....  
**Nwagwu, Kennedy Ogbonna**

**October, 2016**

## DEDICATION

To: **God Almighty**

*WHO makes all things beautiful at HIS own time.*

To: **Tessy**, my wife and **Alexander, Jefferson and Adaeze**, my children

*For their love, patience and prayers.*

To: the memory of my late father, **Pa Alexander Ibeananam Nwagwu**

*Who was there when I set out for **this quest** but didn't live to see me return with **the Golden Fleece**. Papa, may God grant your soul a peaceful rest, Amen!*

## ACKNOWLEDGEMENTS

I am thankful and grateful to the King of kings and Lord of lords, Almighty Jehovah, WHO is the greatest of all inspirations and the fountain of all knowledge.

To my first supervisor Dr P.K.A. Ladipo, what shall I say? You were both my teacher and psychologist. Your words of encouragement always propped me up whenever I was at my low ebb. Your belief in my ability to excel as an academic and researcher is both refreshing and challenging. A great coach and mentor; always nudging me on to be the best I can be! Sir, your support was unrivaled and I make bold to say that I am the luckiest among my colleagues to have worked under your supervision as a doctoral student. I pray that Almighty God will reward you immensely. To, my second supervisor, Dr A.C. Oniku, I say thank you. Your contributions no doubt added to the quality of this thesis.

I must acknowledge the immense contributions of Professor O.L. Kuye (my HOD) and Professor R.K. Ojikutu (my Dean of Faculty) in ensuring that I commenced the immediate process leading to both my internal defense and VIVA, as soon as this work was ready. May God bless you, sirs and grant you speed in all your endeavours, Amen.

To my other lecturers, whose teaching made my quest for a Ph.D. course in the faculty of Business Administration worth the while such as Professor S. A. Banjoko, Professor J.N. Mojekwu, Professor Wilfred Iyiegbuniwe, Professor S.I. Owualah, Dr E.O. Oyatoye, Professor B.E.A. Oghojafor, Dr. Hamadu Dallah and Dr Peter, I. Iyiegbuniwe. I say, thank you.

Other lecturers in the department/faculty who encouraged me one way or the other include Dr Sulaiman (former head, Business Administration dept), Dr. C.B.N. Uche, Dr S.A. Adebisi, Dr. Vincent, Dr. Olusoji George, Dr O.J. Oluwafemi, Dr J.S. Okonji, Dr O.O. Olayemi, Dr O.O. Dakare, Dr. O. Akintunde and Dr. Francis C. Anyim. I am grateful for all your support.

Let me also extend this litany of thanks to my mates with whom I started this journey together: Mrs Gloria Alaneme (my close ally), A.G. Adekoya (my class governor), Mrs A.B. Ofuani, T.O. Olufayo, I. I. Iwuji, R.D. Bakare, C.I. Omoera, E.D. Ighodalo, K.O. Ikenwa, Dr S.A. Aduloju and Dr I.K. Muo. Certainly, guys, our interactions sharpened and widened my intellect.

Also, I must acknowledge such friends as Dr Rahim Ganiyu, Mrs. Salome Ighomereho, Dr Dawodu, Dr Abass A. Shiro, Dr. Dumebi A. Ideh, Mr. O.O. Sode, Dr. Emeka Mbah, Dr E. Badejo, Mr. Adeleke and Mr. Otayemi Oluwaseun Olutayo (who was fervent in his prayers for me). My interactions with all of you helped in shaping me into a rounded scholar.

Not to be forgotten in this litany of thanks are the administrative staff of Department of Business Administration, who were of assistance throughout the duration of this programme in the persons of Mrs. Eunice Adeola (Dept. Secretary), Mr Nwazue Princewill Okpala, Mrs Obi, Miss Jacenta O, and Mr. Raji (now with Student Affairs). I appreciate you all.

I owe a lot of love to my mum, Madam Matilda Nwagwu, and my younger siblings, Ndidi, Chikodi, Chinemerem, Chilaka and his wife- Chinyereugo, Mary and Victor. You are the best family any one could ask for. May God keep us all to reap the fruits of our labour, Amen.

To my cousins, Nathaniel, Friday, Godson, (and the entire Uzowuru family); Michael and his wife, Precious; and my bosom friends, Dr. Edwin Eke, Barrister Timothy Nwosu, Mr. Pius O. Uwagbai, Mr. & Mrs. Emeka Ogbie, Mr. & Mrs. Deinde Ogundipe, Mr. & Mrs. Kofo Olayinka, Mr. Zubby Osuchukwu, Mr. & Mrs. Chinweuba Izima, Mr. Albert Ukachi, Mr. Biodu Bakare, Mr. Alex Chukwu, and Pastor Banji. I say thank you for your moral and financial support while this programme lasted.

Equally deserving of my accolades are my in-laws, Dr (Mrs.) Anyalewa A. Ajonye, Mr. Oche Eka, Mrs. Chii Eka, Mrs. Christy Oklobia, Mrs. Comfort Okubama, Mr. Innocent Ikegwuruka, Mr. Ethel Mgbike, Pastor Chinedu O. Ofili and Pastor (Mrs.) Grace Ofili. I appreciate all your prayers including emotional and material contributions.

I am grateful to my pastors at the RCCG Zion Assembly parish Ire-Akari Estate, Isolo, who were fervent in their prayers. I must particularly mention Pastor Agarah, Pastor Sam Adekoya, Pastor (Mrs) Dammy Adekoya, Pastor (Mrs) Lola Onaadepo, Pastor Lekan Oyewole, Pastor Jonathan Timothy and Elder Chukwuemeka. It is only God that will reward you for your sacrifices and unceasing prayers.

Not to be forgotten also is the support I got from my team in the church- Redeemers' men's fellowship (Zion Assembly Chapter). To bro Peter Nweke, bro Kola Ogunlade, bro Dotun,

bro Duntoye and the rest of men's executives, I am grateful as your support made it possible for me to function effectively as your president even while embarking on this Ph.D. journey.

Equally deserving of my thanks are Professor Don Baridam (former Vice chancellor University of Port Harcourt) who was my lecturer and undergraduate supervisor; Professor I.C. Achumba and Late Professor Nnamdi Asika, both of whom opened my eyes to how marketing and research method/tools can be deployed to solve societies' problems.

This acknowledgement will not be complete without doffing my hat in honour of the love of my life, a jewel of inestimable value and a virtuous woman. Tessy, my wife, you have always done me good and will never do me evil all the days of your life. You have been both my life and prayer partner. God bless you. This quest would have been a total failure without your support. You always prop me up at those moments my courage faltered and doubts seemed to overwhelm me. God has used you to cover my shame. I am immensely grateful, my love.

To all those who reviewed this thesis both at the department and APC levels, I sincerely appreciate your unbiased comments that have rubbed off positively on the quality of this work. Lastly, to the many authors whose works I consulted, I am indeed grateful; a comprehensive list of these works is shown as references and bibliography.

*Kennedy Ogbonna NWAGWU*

**October, 2016**

## TABLE OF CONTENTS

	<b>Page</b>
Title page	i
Certification	ii
Declaration	iii
Dedication	iv
Acknowledgements	v
Table of Contents	viii
List of Tables	xi
List of Figures	xiii
List of Appendices	xiv
Abstract	xv
<b>Chapter One: Introduction</b>	
1.1 Background to the Study	1
1.2 Statement of the Problem	7
1.3 Purpose of the Study	8
1.4 Research Questions	10
1.5 Research Hypotheses	10
1.6 Significance of the Study	11
1.7 Scope and Delimitations of the Study	12
1.8 Operational Definition of Terms	13
1.9 Summary of the Chapter	14
<b>Chapter Two: Literature Review</b>	
2.1 Preamble	17
2.2 Theoretical Framework	17
2.2.1 Theory of Reasoned Action (TRA)	17
2.2.2 The Theory of Planned Behaviour (TPB)	20
2.2.3 Theory of Diffusion of Innovation	22
2.3 Conceptual Framework	26
2.4 Empirical Literature Review	51
2.5 Summary of the Chapter	63



### **Chapter Three: Methodology**

3.0	Preamble	64
3.1	Research Design	64
3.2	Study Population	65
3.3	Sampling Procedure	66
3.4	Sample Size	70
3.5	Data and Collection Instrument	73
3.6	Measurement and Scale Development	75
3.7	Instrument Validation	84
3.8	Statistical Tools:	86
3.9	Effect Size Estimation Models	86
3.10	Summary of the Chapter	86

### **Chapter Four: Data Presentation and Analyses**

4.0	Preamble	87
4.2	Profile of Respondents based on Type of Programme	88
4.3	Profile of Respondents based on Socio-demographics	89
4.4	Results of Hypotheses Testing	92
4.5	Summary and Discussion of Findings	148
4.6	Summary of the Chapter	157

### **Chapter Five: Summary, conclusions and recommendations**

5.0	Preamble	158
5.1	Summary	158
5.2	Conclusions	160
5.3	Implications	165
5.4	Recommendations	166
5.5	Contributions to Knowledge	168
5.6	Limitations of Research	169
5.7	Suggestions for Further Studies	171
	<b>Appendix A</b>	<b>172</b>
	<b>Appendix B</b>	<b>173</b>

<b>Appendix C</b>	<b>179</b>
<b>Appendix D</b>	<b>182</b>
<b>Appendix E</b>	<b>183</b>
<b>Appendix F</b>	<b>185</b>
<b>Appendix G</b>	<b>187</b>
<b>Appendix H</b>	<b>188</b>
<b>Appendix I</b>	<b>190</b>
<b>Appendix J</b>	<b>191</b>
<b>Appendix K</b>	<b>193</b>
<b>Appendix L</b>	<b>194</b>
<b>Appendix M</b>	<b>198</b>
<b>Appendix N</b>	<b>199</b>
<b>References</b>	<b>200</b>

## LIST OF TABLES

<b>Table</b>	<b>Page</b>
Table 2.1: List of some TAM based researches and their acceptance constructs	50
Table 3.1: Sample frame	71
Table 3.2: Calculated sample size	72
Table 3.3: Bio data of Student Respondents	76
Table 3.4: Bio data of Lecturer Respondents	77
Table 3.5: Students classification of products	77
Table 3.6: Classification of products by Lecturers	78
Table 3.7: Selected products for each product type	79
Table 3.8: Scale Reliability: Descriptive statistics and Cronbach Alpha	84
Table 4.1: Type of institution/programme enrolled in by respondents	88
Table 4.2: Socio-demographic profile of respondents	89
Table 4.3a: Group Statistics	91
Table 4.3b: Independent Samples Test	91
Table 4.4a: Descriptives	93
Table 4.4b: Test of Homogeneity of Variances	93
Table 4.4c: ANOVA	93
Table 4.4d: Robust Tests of Equality of Means	93
Table 4.4e: Multiple Comparisons	94
Table 4.4f: 3way crosstab of age, intention to shop & gender for respondents of 31-35years	94
Table 4.4g: 3way crosstab of age, intention to shop & gender for respondents of 25yrs&below	94
Table 4.5a: Descriptives	95
Table 4.5b: Multiple Comparisons	97
Table 4.5c: ANOVA	97
Table 4.5d: Robust Tests of Equality of Means	97
Table 4.5e: Multiple Comparisons	97
Table 4.6a: Descriptives	99
Table 4.6b: Test of Homogeneity of Variances	99
Table 4.6c: ANOVA	99

Table 4.6d: Multiple Comparisons	100
Table 4.7: Summary of results obtained from testing of hypothesis one	102
Table 4.9 a: Paired Samples Statistics	103
Table 4.9b: Paired Samples Test	104
Table 4.10: Summary of results obtained from testing of hypothesis two	107
Table 4.14a: Perceived risk predicted from perceived usefulness	110
Table 4.14b: Intention predicted from both Perceived usefulness & perceived risk	110
Table 4.14c: Total Effect Model	111
Table 4.14d: Total, Direct and Indirect Effects	111
Table 4.15a: Perceived risk predicted from perceived ease of use	112
Table 4.15b: Intention predicted from both Perceived ease of use & perceived risk	112
Table 4.15c: Total Effect Model	112
Table 4.15d: Total, Direct, and Indirect Effects	113
Table 4.16 Summary of Collinearity Statistics	121
Table 4.16a: Descriptive Statistics	123
Table 4.16b: Correlations Matrix for Variables of the study	123
Table 4.16c: Summary of results of bootstrapped regression analysis for H <sub>05</sub>	124
Table 4.16d: Part and partial correlations	125
Table 4.16e: Calculation of Predictors main effects	125
Table 4.17a: Classification Table <sup>a,b</sup> for Block 0	130
Table 4.17b: Omnibus Tests of Model Coefficients	130
Table 4.17c: Hosmer and Lemeshow Test	130
Table 4.17d: Model Summary	131
Table 4.17e: Classification Table <sup>a</sup> for Block 1	132
Table 4.17f: Variables in the Equation	134
Table 4.17g: Regression analysis of perceived risk with intention to use e-channels	136
Table 4.18a: regression analysis of PU & PE with intention to use e-channels	137
Table 4.18b: regression analysis of PU, PE, innovativeness & PR with intention	138
Table 4.18c: Model Summary when PU&PE are the predictors	138
Table 4.18d: Model Summary for the six predictors	138
Table 4.19: Summary of results of Hypotheses testing	141

## LIST OF FIGURES

<b>Figure</b>	<b>Page</b>
Figure 2.1 Technology Acceptance Model (TAM) with the Attitude construct	15
Figure 2.2: The parsimonious Technology Acceptance Model (TAM)	17
Figure 2.3: Theory of reasoned action (TRA)	18
Figure 2.4: Theory of planned behavior	21
Figure 2.5 Adopter categories of innovation	24
Figure 2.6: The interaction of the four components in the diffusion process leading to innovation adoption	25
Figure 2.7: A modified Technology Acceptance Model for predicting e-shopping Acceptance	26
Figure 4.1: Design of Basic Mediation Model	109
Figure 4.2: Mediation Effect of Perceived Risk on the Relationship Between Perceived Usefulness and E-Shopping Acceptance	113
Figure 4.3: Mediation Effect of Innovativeness on The Relationship Between Perceived Risk and E-Shopping Acceptance	117
Figure 5: Scatterplot of ZRESID against ZPRED	121
Figure 6: Normal P-P Plot of Regression Standardized Residual	122

## LIST OF APPENDICES

<b>Appendix</b>	<b>Page</b>
Appendix A:List of Tertiary Institutions in Lagos	165
Appendix B: Main Questionnaire	166
Appendix C: Stage 1 Questionnaire	171
Appendix D: Cross-tabulation Analysis of Age, Gender and Intention	174
Appendix E: Mediation Analysis for Hypothesis Three	175
Appendix F: Mediation Analysis for Hypothesis Four	177
Appendix G:Residual Analysis for Hypothesis Five	179
Appendix H: SPSS Output for Boothstrapped Regression for H <sub>05</sub>	180
Appendix I: Testing For Linearity of the Logit	182
Appendix J: Residual Analysis for Hypothesis Six	183
Appendix K: Result of Multicollinearity Test for Predictors In Hypothesis H <sub>06</sub>	184
Appendix L: Full Logistic Regression Analysis Result for H <sub>06</sub>	185
Appendix M: SPSS OUTPUT For Regression Analysis of Perceived Risk and Intention to Shop Online (A Post Hoc Test)	186
Appendix N: Full Computation of F-Statistics For R <sup>2</sup> Values of 0.007, 0.028 And 0.053	190

## ABSTRACT

The global resurgence of online shopping and availability of information and communication technology infrastructure are attracting online retail businesses to Nigeria. E-shopping is novel in this clime hence, the necessity for operators to understand the precursors to its acceptance given the cultural differences among global consumers. As part of understanding the Nigerian online shopper, this study investigates tertiary students' acceptance of e-shopping using a modified technology acceptance model. To achieve the objectives of this study, a descriptive research design based on cross-sectional survey was employed while a structured questionnaire served as instrument for data collection. Multi-stage sampling technique was used to select one thousand one hundred students of three tertiary institutions in Lagos State. These students whose responses yielded data for analyses were drawn from both full-time and part-time programmes of these institutions. While percentages and frequency tables were used to analyze and present the study's descriptive statistics, parametric statistical tests such as t-tests, analysis of variance (ANOVA), multiple and logistic regression analyses were used as inferential statistics in testing the study's hypotheses through the instrumentality of Hayes process tool and SPSS version 19. Key findings of this study show that: perceived usefulness, perceived ease-of-use, innovativeness, and perceived risk have a significant combined effect on e-shopping acceptance ( $R^2=19.21\%$ ,  $F=65.09$ ); among Socio-demographic variables only age has significant effect on e-shopping (Welch  $F=2.577$ ,  $p< 0.05$ ); also, the mediatory roles of perceived risk in technology acceptance model (TAM) were detected. Deployment of encryption technology to mitigate risk concerns and recognition of local consumer information in formulation of marketing programmes among others, are recommended.

**Keywords:** E-shopping, E-commerce, Modified-TAM, Product-type, Socio-demographics.

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background to the Study

The evolution of buying and selling in Nigeria as captured by Oguntunde and Oyeyipo (2012) shows that from 1880's trade was mainly conducted through barter. This method of exchange was discarded when the West African Currency Board was established in 1912. With the introduction of currency as legal tender at this period, it became possible for goods and services to be exchanged with currency. Buying and selling at these periods took place at some physical locations (market places) on certain market days, and then later civilization brought such store formats as kiosks, shops, supermarkets, malls, etc. where daily transactions are conducted. However, with the invention of Internet, customers now patronise online vendors in virtual offices or market spaces. This new way of shopping is relatively a new phenomenon (Oguntunde & Oyeyipo, 2012).

The birthing of Internet and the World Wide Web have therefore been revolutionary (Ovia, 2008). The cliché- "global village" has now become a popular lexicon as people can easily interact with one another virtually and remotely. With the aid of these two inventions coupled with other dozens of software/ technologies, people can easily engage in such activities as e-mailing, browsing and online shopping.

As to be expected, commercial business outlets are leveraging the opportunities inherent in these new technologies to reach out to their various publics. The Internet with its worldwide reach, instant 24/7 communications capability, ease of updating, and low cost have all converged to create vast new market opportunities for businesses to capitalize on. Presently, many 'brick and mortar' business organisations have transformed into 'click and mortar'



firms as they target online customers while ‘click only’ companies that exist only in virtual world have been established.

Electronic commerce as defined by Akinola, Akinyede and Agbonifo (2011) consists of buying and selling of products or services over such electronic systems as the Internet and other computer networks. However, the process of e-shopping aspect of e-commerce has been aptly described by Oguntunde and Oyeyipo (2012) as:

an affair of scrolls, clicks, double-clicks, drags and drops into a virtual and possibly, animated cart. Once the delivery day is specified, means of payment indicated, credit card pin supplied, total purchase is calculated including shipment, the deal is then struck. The customers or clients wait patiently for delivery of their goods and services at the other end such as offices, accommodation or even, picnic ground or resort places (p.41)

As reported by Zhou, Dai and Zhang (2007) since the late 1990s, online shopping has become increasingly popular as a good number of consumers buy different types of products from the Internet. Retail sales from US online shopping outlets were estimated to grow from \$172 billion in 2005 to \$329 billion in 2010 (Johnson & Tesch, 2005 cited in Tong, 2010).

In their study cited in Monsuwe, Dellaert and de Ruyter (2004), the GfK Group (2002) reports a rise in online shopping activities in six key European markets from 27.7 percent to 31.4 percent in 2003 which shows that 59 million patrons in Europe use the Internet regularly for shopping. Also, Verdict report, 2000-2006, cited in Vazquez and Xu (2009) shows that in the UK online spending overshoot total retail spending by 1.5 percent. This growth in online retail activities reflects in both the number of e-shoppers and the volume of their purchases.

Though, the record of online shopping expenditure of African countries as a whole, Nigeria inclusive, seems to be scarce, yet popular press continues to report rising online shopping

activities of Nigerians. E-commerce adoption has been, at best, sporadic in the developing world. In 2002, while developed countries contributed towards 95% of e-commerce, Africa and Latin America accounted for less than 1% (UNCTAD, 2002). This could be due to low literacy level and poor supporting infrastructure prevalent in these climes at that time. However, the recent upsurge in investment by both government and private investors in information and communication technology (ICT) infrastructure is making ICT services commonly available to the people of Nigeria.

Plausibly, the popularity of electronic commerce is anchored on the ubiquitous Internet which is now available in many nations of the world and subsequently, accessible to non-technical people. Africa Internet usage statistics for June 2016 shows that there are only six African countries with the Internet penetration rate higher than 50% (Internet World Stats, 2016). Nigeria, with her 51.1% penetration rate, occupies the sixth position among these elite countries led by Kenya which has 69.6% penetration rate. When reflected in numbers, however, Nigeria, which boasts of over 90 million Internet users, topples Kenya, which harbours only about 32 million Internet subscribers, as the continent's number one Internet user (Ajala, 2015; Internet World Stats, 2016). Again, Ubabukoh (2015) reports that Nigeria is the fastest growing market among the top 30 Internet countries, globally.

According to Nigeria communication commission's report for September 2015, Nigeria has over 150 million telephone subscribers and currently, there are about 205 licensed Internet Service Providers (ISPs) as well as a number of data carriers, Internet exchange and gateway operators. All these have made Nigeria become one of the biggest and fastest growing telecom markets in Africa, attracting huge amounts of foreign investments, having overtaken South Africa to become the continent's largest mobile market (Emmanuel, 2012).

As a result of the foregoing, scholars believe that there is an increasing awareness of the benefits and potential opportunities arising from e-commerce and consequently, e-commerce is slowly but surely taking off gradually in Nigeria (Folorunsho, Awe, Sharma & Jeff, 2006). Also, the Central bank of Nigeria cashless policy which was introduced in 2012 has provided a fertile ground for e-commerce activities to thrive by making available such digital payment instruments as credit card, online cheque/electronic fund transfer, debit card, micropayment, digital cash and money orders etc. As to be expected, the improvements in ICT and related infrastructure are attracting reasonable number of online merchants (both 'click and mortar' and 'click only' firms) that are offering diversified number of products in the Internet.

The rise in ownership of personal computers, mobile phones, handheld devices such as personal digital assistants, *PDA*s (e.g. palm tops, Nokia Communicator, etc), tablets and smartphones that can access the Internet, have led to widespread use of the Internet, an indication that there would be a high possibility that these Internet users would shop online (Sefton, 2000). Additionally, Nie and Erbring (2000) observe that 52% of the consumers use the Internet for product information, 42% for travel information, and 24% for buying. By 2004, 62 percent of Internet users had bought products from the Internet at least once over the first six months of 2004 (Aqute Research, 2004 cited in Kamarulzaman, 2007). It is expected that, the figures will increase significantly over time, moving from its infancy to a market with significant potential, with millions of people shopping online as more and more people become Internet savvy (Strauss & Frost, 1999; Shim, Eastlick, Lotz, & Warrington, 2001; Kamarulzaman, 2007). However, despite this reported increase, there is very limited information on how and why certain groups of consumers shop online while others accept e-shopping albeit, reluctantly.

The important position the consumer occupies in determining the success of any venture and particularly in attaining both marketing and corporate goals is incontrovertible. Hence the fulcrum of success of these emerging online retailers (e-tailers) hinges essentially on consumer patronage. As recent report shows, investment in information and communication technology (ICT) and related businesses has continued to rise, for instance, MTN, Rocket Internet and Goldman Sachs have invested about sixty-four billion naira (#64bn) equivalent of three hundred and twenty-seven million US dollars (\$327m) on African Internet Group, the owners of Jumia.com as at February, 2016 (Ubabukoh, 2016). With this leap in investments on online merchandising, the consequences of failure become more acute (Venkatesh, 1999) and the need for success becomes even more critical (Zhou *et al*, 2007).

The current deployment of Internet by a growing number of retailers as an outlet to reach customers have stimulated considerable researches which focus on attracting and retaining consumers by examining consumer acceptance of the Internet as a shopping channel (Jarvenpaa & Todd, 1997; Childers, Carr, Peck, & Carson, 2001; Yoh, Damhorst, Sapp & Laczniak, 2003; Keen, Wetzels, de Ruyter & Feinberg, 2004; Ha & Stoel, 2009; Liu & Forsythe, 2010). Thus, the question of why consumers prefer to engage in online shopping for some goods and not for others has continued to arouse the interest of scholars (Girard, Korgaonkar & Silverblatt, 2003).

Extant literature reveals that e-shopping studies have largely focused on understanding what drives consumers to shop online from either a consumer- or a technology-oriented perspective (Jarvenpaa & Todd 1997). Whilst scholars who adopt consumer- oriented approach are concerned with consumers' salient beliefs about online shopping, those of technology school on the other hand, focus on how the technical specifications of an online

store affect an individual's perceptions and, subsequent use of that technology (Chen, Gillenson & Sherrell, 2002; Tong, 2010). Though, several theories exist, the technology acceptance model (TAM) has been generously employed for understanding of electronic commerce (Tong, 2010) and has been extensively applied in the online shopping context (Bruner & Kumar, 2005; McKechnie, Winklhofer & Ennew, 2006).

Online consumer behaviour is currently an emerging theoretical body of research (Vazquez & Xu, 2009), however, a holistic view of online shopping acceptance from the perspective of the consumers is yet to be undertaken (Zhou *et al.*, 2007). Hence, scholars continue to search for answers to questions posed by this current phenomenon. Literature however shows that technology acceptance model continues to be extended as scholars search for better understanding of the online consumer. Technology acceptance model has been modified with the integration of such constructs as trust and perceived risk (Pavlou, 2003), personal characteristics, trust and perceived risk (Kamarulzaman, 2007), innovativeness and technology anxiety (Kim & Forsythe, 2010), personal characteristics, prior shopping experience, perceived enjoyment and perceived risks (Tong, 2010).

While these scholarly works extending technology acceptance model (TAM) are ongoing, it is imperative to note that there is paucity of studies integrating the constructs of socio-demographics and product type, to technology acceptance model in order to improve its predictive capability. There is equally scarce empirical study on online shopping in Africa generally and Nigeria particularly (Molla & Licker, 2005; Aghaunor & Fotoh, 2006) due mainly to the novelty of the phenomenon of online shopping aspect of electronic commerce in this clime. It is the challenge of this present study to fill these twin gaps by employing Nigerian data in the validation of these constructs.

## **1.2 Statement of the Problem**

Literature shows that online shopping since its early history has had mixed results as news stories carried the early success stories tagged “dot-com boom” between the mid 1990s to year 2000 and the failure stories tagged “dot-com bust” or “dot-bomb” between year 2000 and 2002 (Schneider, 2008). In spite of its current popularity particularly in the developed countries, studies still show that the acceptance of this new way of shopping has not been the same or certain in all markets, whether in the developed or less developed markets such as Nigeria. For example, in the United States of America many online firms such as e-Toys.com, Garden.com, Pets.com, etc, are noted to have collapsed during the ‘dot.com bust’ era.

Presently, Nigeria has become the choice destination of investments in online merchandizing which has resulted in the establishment of many cyber-sellers such as Jumia.com, Konga.com, Cheki.com, Adiba.com, Yudala.com, etc. Given that many of these online firms are worth billions of naira and that electronic shopping is novel in this clime, there are some concerns as to the acceptance of this new way of shopping in Nigeria, thus, calling the successful operations of these online business ventures to question. As noted by Udeji (2016), only about nine percent of Nigerians shop online, leaving majority as traditional shoppers. As a result, it has become imperative to identify the factors that drive acceptance of this new way of shopping or risk wastage of billions of investment money.

Also, e-shopping concept is not only of interest to practitioners but also to scholars as both are confronted with the problem of unraveling the question of why some consumers prefer to engage in online shopping why others do not or why consumers shop certain goods online

and not for others. Though, an emerging area of research, literature however, reveals that a growing number of e-shopping studies have been undertaken in the developed countries of United States of America and United Kingdom while limited studies exists in the less developed countries of Africa in general and Nigeria in particular (Molla & Licker, 2005; Aghaunor & Fotoh, 2006). As a result, while information is available on the profile of western e-shopper, scant information exists about the profile of African and Nigerian e-shopper. The scarce information about the Nigerian online shopper could be hazardous to the survival of these firms.

Given that there are differences among global consumers, many scholars advocate the need for closer examination of online shopping intentions in specific countries, due to cultural differences and the prior imperfection of technology acceptance relationships of varying consumer markets (Bobbitt & Dabholkar, 2001; Goldsmith, 2002). In support of this view, Boateng (2011) argue that there exist a mismatch between the realities of developing countries firms and assumptions of western models of enterprise. Thus, relying on western e-shoppers profile as basis for targeting Nigerians could be costly to the survival of these new online retail firms and as Garcia-Murillo (2004) posits, more research is needed to redefine existing knowledge to be consistent and applicable with the nature of the environment. The foregoing, thus, brings to the fore the problems necessitating this current research.

Finally, while several theories are emerging to guide research in electronic commerce studies, the technology acceptance model (TAM) has been extensively applied in the online shopping context (Bruner and Kumar, 2005; McKechnie *et al.*, 2006). Empirical evidence exist in extant literature of successful linkages of TAM's constructs of perceived ease of use and perceived usefulness with such constructs as trust, perceived risk, personal characteristics, prior shopping experience, innovativeness and perceived enjoyment in predicting e-shopping

behaviour (Pavlou, 2003; Kamarulzaman, 2007; Kim & Forsythe, 2010;Tong, 2010). However, little empirical studies have focused on integrating socio-demographics, innovativeness, product type and perceived risk with TAM's constructs of perceived ease of use and perceived usefulness in order to broaden the robustness of TAM in predicting e-shopping acceptance.

### **1.3 Purpose of the Study**

The main purpose of this study is to determine the factors that influence students of tertiary institutions in Lagos State, Nigeria to shop online and to modify technology acceptance model (TAM) by integrating its constructs with socio-demographics, innovativeness, product type and perceived risk in order to improve its capability in predicting online consumer behaviour. In specific terms, the objectives of the study are to:

- i. determine the effects of socio-demographic variables on consumers' e-shopping acceptance.
- ii. investigate the impact of product type on consumers' Internet shopping acceptance.
- iii. investigate the mediatory role of perceived risk in the relationship between perceived usefulness and e-shopping acceptance.
- iv. examine the mediatory role of perceived risk in the relationship between perceived ease-of-use and e-shopping acceptance.
- v. determine if the combined effect of innovativeness, perceived usefulness, perceived ease-of-use and perceived risk do predict consumers' acceptance of online shopping.
- vi. determine the role of socio-demographics, product type, innovativeness, perceived risk, perceived usefulness and perceived ease-of-use in predicting online shopping intention.



- vii. to modify technology acceptance model (TAM) with infusion of socio-demographics, innovativeness, product type and perceived risk to enhance its capability in predicting online shopping intention.

#### **1.4 Research Questions**

The following research questions are posed to provide the bearing for this study:

- i. What effect do socio-demographic variables have on consumers' e-shopping acceptance?
- ii. What role does product type play in influencing consumers' e-shopping acceptance?
- iii. To what extent can perceived risk mediate the relationship between perceived usefulness and e-shopping acceptance?
- iv. To what extent can perceived risk mediate the relationship between perceived ease-of-use and e-shopping acceptance?
- v. To what extent does the combination of innovativeness, perceived usefulness, perceived ease-of-use and perceived risk affect consumers' acceptance of online shopping?
- vi. To what extent would intention to shop online be predicted from socio-demographics, product type, innovativeness, perceived risk, perceived usefulness and perceived ease-of-use?
- vii. To what extent would the inclusion of socio-demographics, innovativeness, product type and perceived risk in TAM improve its capacity to predict e-shopping acceptance?

## **1.5 Research Hypotheses**

Arising from research questions, the following hypotheses are formulated:

- i. Socio-demographic variables of consumers do not significantly affect their e-shopping acceptance.
- ii. Product types available online do not significantly influence e-shopping acceptance.
- iii. Perceived risk does not significantly mediate the relationship between perceived usefulness and e-shopping acceptance.
- iv. Perceived risk does not significantly mediate the relationship between perceived ease-of-use and e-shopping acceptance.
- v. The combined effect of innovativeness, perceived usefulness, perceived ease-of-use and perceived risk do not significantly predict consumers' acceptance of online shopping.
- vi. Socio-demographics, product type, innovativeness, perceived usefulness, perceived ease-of-use and perceived risk do not significantly contribute in predicting consumers' online shopping intention.
- vii. The infusion of socio-demographics, product type, innovativeness and perceived risk to technology acceptance model (TAM) does not significantly improve its capacity to predict intention to shop online.

## **1.6 Significance of the Study**

It is hoped that the present study will provide helpful information on the Nigerian online shopper. No doubt such information is necessary to guide the marketing strategies of these online firms if they must realize both marketing and organisational goals. Again, as extant literature has shown, e-shopping aspect of electronic commerce is both an emerging and an evolving area of research which is yet to enjoy a common view (Zhou *et al*, 2007). Thus, the

present study enriches this area of research by exposing the online behaviour of consumers in developing countries such as Nigeria.

By understanding the precursors to Internet shopping acceptance in Nigeria, online retailers will be better equipped to provide quality service which will ultimately benefit prospective patrons. With improvement in quality of service, the survival of these firms will be guaranteed by the continuous patronage of satisfied customers. The survival of these firms by extension will eventually translate into more revenue for the government through taxation and employment opportunities for citizens. Again, the exposition of factors that influence online shopping acceptance behaviour and the attenuating effect of perceived risk on such behaviours will help guide government policy decisions particularly in protecting customers from unwholesome practices of some recalcitrant and dubious online vendors.

Additionally, this work will be of interest to the academia as it serves as a reference material for future research and by integrating socio-demographics, innovativeness, product type and perceived risk into the constructs of technology acceptance model, this work adds to the predictive capability of this model in both explaining and understanding of online consumer behaviour. The study is expected to extend the frontier of knowledge in this study area.

### **1.7 Scope and Delimitations of the Study**

The purpose of this study is to examine the factors that influence tertiary students' online shopping acceptance in Lagos state, Nigeria and the modification of technology acceptance model with the integration of socio-demographics, innovativeness, product type and perceived risk in order to enhance the capacity of this model to predict consumers' online behaviour. To achieve the above, samples for this study are drawn from tertiary students, some of whom are part of working class Nigerians who are majorly IT users. Also, Lagos

being home to twenty public and private tertiary institutions the requisite sampling method that ensured that representative sample is drawn in order to have a balanced view was employed. In this case, the study is delimited to cover both full time and part time students of these selected tertiary institutions domiciled in Lagos. Students are no doubt high IT users. Again, Lagos which is the commercial nerve centre of Nigeria where people of all ethnic and tribal groups converge and which enjoys the greatest investment in ICT infrastructure confers on those who school and work in its domain, the greatest advantage and possibility to shop online.

### **1.8 Operational Definition of Terms:**

**E-shopping acceptance:** this is the consumer positive intention to engage in online product information search and product purchase.

**Perceived risk:** this covers the extent of risk the online shopper perceives s/he is exposed to while engaged in online shopping activities. The risks covered here include time risk, psychological risk, privacy risk, financial risk, performance risk, Social risk and Overall risk.

**Innovativeness:** this is the willingness and tendency of the consumer to learn about and adopt innovations related to Internet shopping.

**Perceived ease of use:** this is the perception of the consumer that interacting with both the technologies and processes of online shopping will be effortless.

**Perceived usefulness:** this encompasses the perception of the consumer that engaging in online shopping is useful.

**Socio-demographics:** these are taken to mean respondents' gender, age, income and level of education.

**Product Types:** these are taken to include search, experiential and credence products.

**Brick and mortar firms:** traditional retail firms with physical retail outlets.

**Click and mortar firms:** retail firms with physical retail outlets that have added e-shopping channels to their operations.

**Click only firms:** whole online retail firms without any physical retail outlet.

**Drag and drop:** choosing and/ selecting a product from an e-tailer's web page into a shopping cart for purchase.

**Shopping Cart:** this is an electronic basket where the e-shopper drops/deposits selected goods to facilitate billing before checking out of the e-tailer's web page.

**E-tailer:** Another name for 'click and mortar' and 'click only' firms.

## **1.9 Summary of the Chapter**

In this chapter, the evolution of shopping from market place to 'market space' and the transformatory role of Internet and related technologies in making this new way of shopping possible, were discussed. These technologies which revolutionised business processes and practices have provided the opportunity for the establishment of non-store enterprises that offer different types of products to customers online. As a business concept, online shopping originated from the Western world in mid-1990. Though, currently enjoying a rebirth, e-shopping has had a low period in its history with collapse of many online firms. Being new to Nigeria and Nigerians, the problem that necessitated this study was majorly to ascertain if this new way of shopping is acceptable to Nigerians by searching for insight into those who will shop online and what type of products they are willing to buy. These problems lead to the formation of the main objectives of this study which are to determine the factors that influence consumers to shop online and to modify Technology Acceptance Model (TAM) by integrating it with socio-demographics, innovativeness, product type and perceived risk to make it more predictive in the domain of e-shopping. Also, in this chapter, research questions and hypotheses were stated while the significance of the study was identified. The study's

scope and delimitation were equally highlighted while operational definitions of terms ended the chapter.

# CHAPTER TWO

## LITERATURE REVIEW

### 2.1 Preamble

Several theoretical models have been advanced as researchers continue to focus efforts on identifying factors that influence e-commerce acceptance behaviour. In particular, the technology acceptance model (TAM), introduced by Davis and his colleagues (Davis, 1989; Davis, Bagozzi & Warshaw, 1989), has received considerable interest and mention; and has become established as a parsimonious yet powerful model for explaining and predicting technology usage intentions and acceptance behaviour (Yi & Hwang, 2003; Lucas & Spitler, 1999). Although this model is specifically tailored to understand the adoption of computer-based technologies on the job or in the workplace, it has proven to be suitable as a theoretical foundation for the adoption of e-commerce as well (Lederer, Maupin, Sena & Zhuang, 2000; Moon & Kim, 2001; Chen *et al.*, 2002; Pavlou, 2003; Ha & Stoel, 2009).

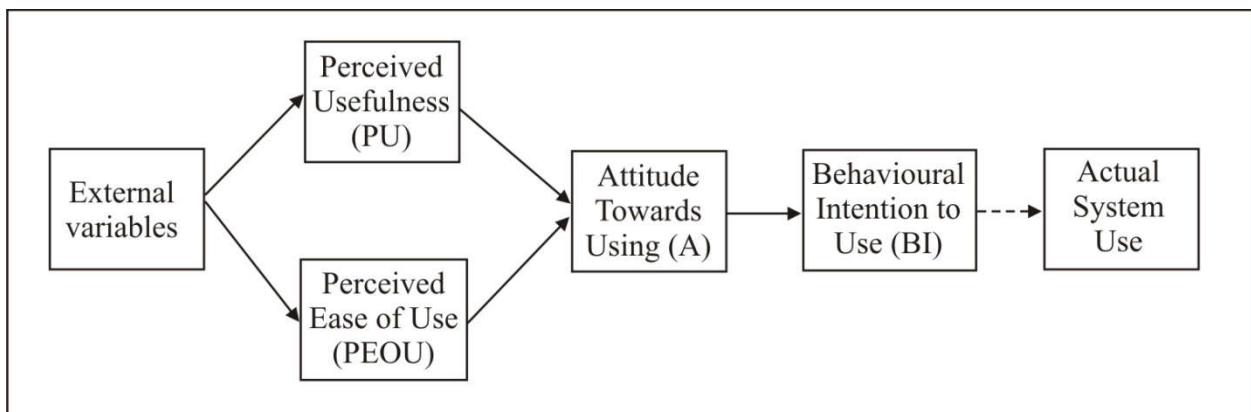


Figure 2.1 Technology Acceptance Model (TAM) with the Attitude-construct

Source: Davis (1989)

As noted by Tong (2010), the Technology Acceptance Model in its original form identified perceived usefulness and attitude as having significant effects on use (see figure 2.1), as a result, attitude as a construct was later removed from the model, thereby giving birth to the

present TAM which is seen as parsimonious. In this parsimonious TAM, the constructs of perceived usefulness and perceived ease-of-use are found to have significant effects on behavioural intention with perceived usefulness showing stronger effect. Davis *et al.*, (1989) propose that attitude should be excluded because it did not fully mediate perceived usefulness and perceived ease of use. Venkatesh (2000) posits that attitude's partial mediation of intention was explained as deriving from people intending to use a technology because it was useful even though they might not have a positive attitude toward using it. The discarding of attitude from the model helps to better illustrate the effect of perceived ease-of-use and perceived usefulness on intention which is the key dependent variable of interest.

Though, Venkatesh, (2000) and Vijayasarathy, (2004) see TAM's parsimony as a key limitation, yet literature shows that a large number of studies continues to ascertain the validity of TAM as a parsimonious model in a variety of technology-related contexts (Davis, 1989; Davis *et al.*, 1989; Rose & Straub, 1998; Porter & Donthu, 2006). The present study adapts and extends this parsimonious technology acceptance model.

The theory of TAM proposes that a person's actual system usage is dependent on his/her behavioural intention, which in turn is jointly determined by perceived usefulness and perceived ease-of-use. Conceptually, perceived usefulness is the degree of a person's belief that using a technology will improve his or her performance in the job, and perceived ease-of-use is the degree to which a person is convinced that using a technology will be effortless (Davis, 1989). Behavioural intention is defined on the other hand, as the extent to which a person intends to actualize a particular behaviour (Davis *et al.*, 1989). TAM posits that the impact of other external variables on behavioural intention is fully mediated by these two beliefs of usefulness and ease-of-use.



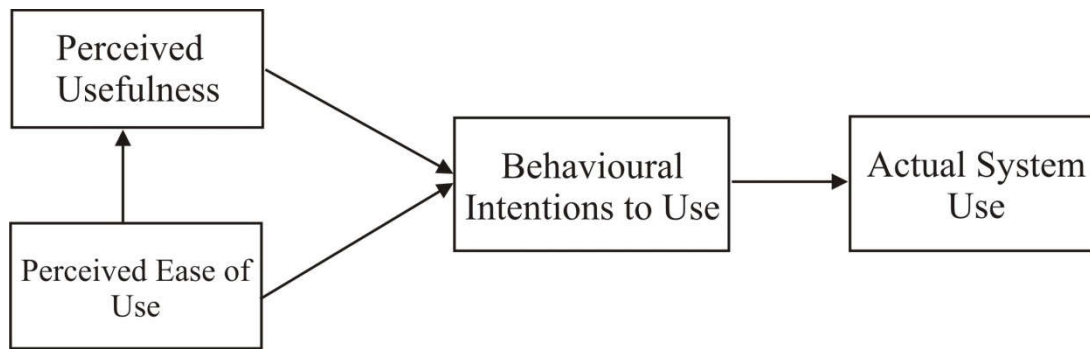


Figure 2.2 the parsimonious Technology Acceptance Model (TAM)  
Sources: Davis *et al* (1989), Vankatesh, Morris, Davis and Davis (2003).

Having provided background information on Davis (1989) Technology Acceptance Model (TAM), in this section, the remaining part of this chapter will focus on the study's theoretical framework, conceptual framework and review of empirical literature.

## 2.2 Theoretical Framework

Three theories provided the anchor upon which the precursors to tertiary students' acceptance of electronic shopping are examined. These theories include: theory of reasoned action (TRA), theory of planned behaviour (TPB) and theory of diffusion of innovation.

### 2.2.1 Theory of Reasoned Action (TRA)

Theory of reasoned action (TRA) is a theory popularly used in social psychology for predicting or explaining cognitive and affective behaviour using the belief-attitude-intention-behaviour relationship (Shih, 2004; Davis, 1989). This theory associates attitudes to the construct of behaviour in such a way that behaviours are seen as dependent on behavioural intentions which, in turn, are determined by attitudes to the behaviour and subjective norms. It is essentially a series of linked concepts which provide social psychologists the platform to create hypotheses that will aid understanding and predict human behaviour (McKemey & Sakyi-Dawson, 2000). Theory of reasoned action is seen as one of the "expectancy-value"

models of human behaviour with terms that are not alien to those of the well-established subjective expected utility model often used by economists (Lynne, 1995).

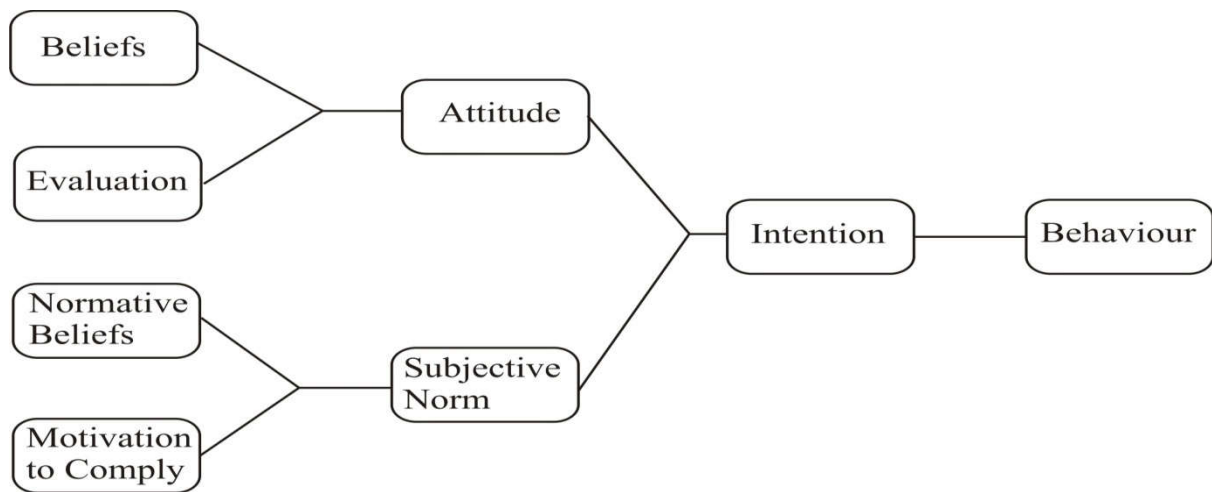


Figure 2.3 Theory of Reasoned Action (TRA)  
 Source: Ajzen and Fishbein, 1969, 1975, 1980

The works of Fishbein and Ajzen (1975) and Ajzen and Fishbein (1977, 1980), the theory of reasoned action (TRA) is anchored on the postulation that the most important cause of a person’s behaviour is his or her behavioural intent. Intentions to perform a behaviour are viewed as being driven by both an individual’s attitudes toward the behaviour and subjective norms, or influences and motivations of the individual to comply with normative beliefs (Bagozzi, Baumgartner & Yi, 1992; Randall, 1989; Shimp & Kavas, 1984). The normative influence on intention is what Fishbein and Ajzen referred to as one’s subjective norm (Hale, Householder & Green, 2002). TRA is generally recognized as being most applicable to completely volitional behaviours where individuals perceive themselves as having complete control over their choices (Hale, Householder & Green, 2002). “According to Ajzen and Fishbein, the theory of reasoned action is based on the assumption that human beings are rational and make systematic use of available information. People consider the implications of their actions before they decide whether or not to perform a given behaviour” (Tlou, 2009, P.26).

The theory of reasoned action, thus, is positioned to explain volitional behaviours, and therefore, excludes such involuntary and unconscious behaviours as those that are spontaneous, impulsive, habitual, mindless, the result of cravings or simply scripted (Langer, 1989; Bentler & Speckart, 1979). Additionally, Liska (1984) notes that behaviours which require special skills, unique opportunities or resources or cooperation of others to be performed should be excluded as one may be hindered from executing a behaviour because of a skill deficiency, lack of opportunity, or lack of cooperation from others and not because of a voluntary decision not to engage in the behaviour.

The theory of reasoned action is relevant to this study given the fact that online shopping is an activity that requires conscious and voluntary effort from rational consumers. As electronic shopping is novel in this part of the world, it is logical to assume that prospective patrons would think through the consequences of engaging in this new way of shopping prior to doing so. As TRA has shown, behaviour is influenced by intent through the routes of attitude, belief and subjective norms. Thus, the author projects that beyond the type of product sold online and consumers' socio-demographics and level of innovativeness, it is reasonable to expect consumers' intention to engage in this new way of shopping to be shaped by their belief about the usefulness, ease of use and risk associated with online shopping.

Again, as portrayed in TRA, these beliefs act jointly with consumers' normative belief to affect intention. Davis (1989) Technology Acceptance Model (which this work seeks to extend) is itself anchored on theory of reasoned action as the two major constructs of TAM- perceived usefulness and perceived ease of use are products of users' beliefs which could also

be influenced by a user's significant others such as colleagues in the office, friends and family.

Since its introduction to behavioural research, TRA has been applied to study a wide variety of situations and is now regarded as one of the most influential theories about volitional human behaviour (Trafimow & Finlay, 2002). Past research has tested the TRA on a variety of behavioural intentions, such as blood donation (Burnkrant & Page, 1982), bone marrow donation (Bagozzi, Lee, & Van Loo, 1996), religious donation (Chuchinprakarn, Greer, & Wagner, 1998), Workplace HIV/AIDS health promotion programme (Tlou, 2009), and online shopping intention (Chuchinprakarn, 2005). Having documented the successful application of theory of reasoned action (TRA) to past studies; it is considered appropriate for the present study for reasons already stated above.

### **2.2.2 The Theory of Planned Behaviour (TPB)**

Theory of reasoned action (TRA) as proposed by Fishbein and Ajzen (1975) and Ajzen and Fishbein (1977, 1980), was related to voluntary behaviour. Practically, however, it was discovered that behaviour is not always voluntary and under control, but could sometimes be deliberative and planned. Consequently, TRA was modified with the addition of perceived behavioural control. With this addition the theory was called the theory of planned behaviour (TPB). The Theory of Planned Behaviour (TPB) is essentially an extension of the Theory of Reasoned Action (TRA) that includes measures of controlled belief and perceived behavioural control aimed at predicting deliberate and planned behaviour (Armitage & Conner, 2001). The theory states that attitude toward behaviour, subjective norms, and perceived behavioural control, together shape an individual's behavioural intentions and behaviours.

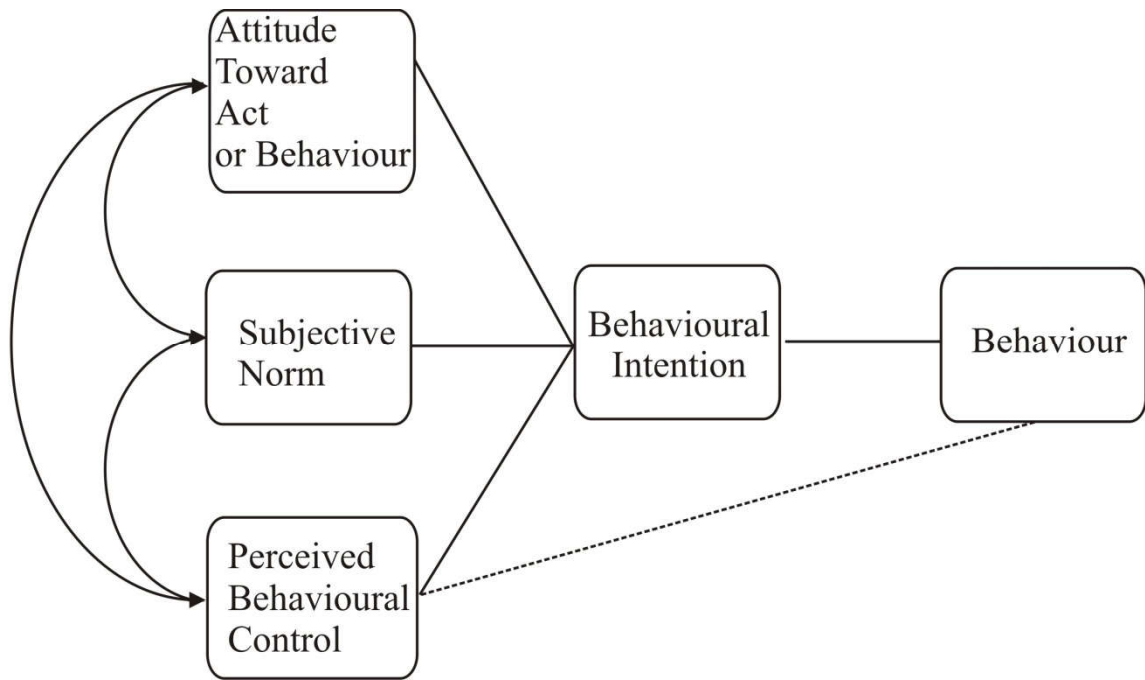


Figure 2.4: Theory of planned behaviour.  
Source: Ajzen, 1991

The theory of planned behaviour (TPB) holds that individual actions are guided by beliefs about the likely outcomes of behaviours, beliefs about the expectations of others, and beliefs about the nature of control that the individual has over conditions that may facilitate or impede performing the behaviours (Ajzen, 1988; 1991; Ajzen & Madden 1986). In relating these areas, the theory suggests, for instance, that individuals' behavioural intentions will be stronger when supported by favourable beliefs about the outcome and other's expectations. Such individuals may then carry out their intentions to perform certain behaviours when appropriate opportunities arise as a result of their beliefs that they have a sufficient actual degree of control over the behaviour.

In line with the foregoing, Perceived behavioural control (PBC) is held to influence both intention and behaviour. The justification behind the addition of PBC was that it would allow prediction of behaviours that were not under complete volitional control. Thus, while the TRA could adequately predict behaviours that were comparatively straightforward (i.e. under

volitional control), under situations where there were constraints on action, the mere formation of an intention was inadequate to predict behaviour. The inclusion of PBC provides information about the potential constraints on action as perceived by the actor, and in turn explains why intentions do not always predict behaviour (Armitage & Conner, 2001).

With consideration to the foregoing, this theory is relevant to this work given the fact that consumers must not only be literate but must also know how to navigate through the e-tailers' web pages to be able to shop through them. This theory therefore, suggests that when consumers consider this lack of ability as a potential constraint on action then their positive intention to shop online will be in jeopardy.

The theory of planned behaviour (TPB) has been extensively applied to studies of the relations among beliefs, attitudes, behavioural intentions and behaviours in various fields such as leisure choice (Ajzen, 1990), media campaign (Stead, Tagg, MacKintosh & Eadie, 2005), workplace HIV/AIDS health promotion programme (Tlou, 2009), binge-drinking (Johnston & White, 2003), blood donation (Giles, McClenahan, Cairns & Mallet, 2004), investment decisions (East, 1993), and electronic commerce adoption (Pavlou & Fygenon, 2006).

### **2.2.3 Theory of Diffusion of Innovation**

The blueprint for exploring consumer acceptance of innovative products/services is drawn from the area of research known as the diffusion of innovations. As a theory that deals with acceptance of innovations, Schiffman and Kanuk (2004) posit that the theory of diffusion of innovation primarily covers two related processes: the diffusion process and the adoption process. While the diffusion process deals with the spread of an innovation from its source to

the consuming public, the adoption process focuses on the stages through which a consumer passes when deciding to accept or reject the innovation.

Cheng, Kao and Lin (2004) observe that the theory of diffusion of innovation has been studied from the viewpoint of diverse disciplines using different types of products, services and ideas. The variants of diffusion of innovation model discernible in literature include Bass' model, Moore's model and Rogers' model, with the latter receiving more attention. Bass (1969) applied mathematical methods in developing a diffusion of innovation model in which five adoption categories were proposed, from the earliest adoption onward: innovators, early adopters, the early majority, the late majority and the laggards. Bass model explains that the number of adopters during a period is almost identical to the number of sales throughout most of the diffusion process. Thus, the number of adoptions in a period serves as a good proxy for sales (Chang, 2010). The Bass model has been revised and implemented in forecasting innovation diffusion in diverse fields (Mahajan, Muller, & Bass, 1990); and has the potential to predict the distribution of the adoption curve (Chang, 2010).

Moore (1995) developed a diffusion of innovation model that is focused on technological innovations with the same adopter categories as mentioned above and with the same terms to represent the five stages of innovation adoption. The major contribution of Moore's model to diffusion of innovation (DOI) school of thought is the assumption of a discontinuous innovation process and the focus solely on organization, with a new technology adoption requirement (Cheng, Kao & Lin, 2004).

Rogers' diffusion of innovation model is the pioneer and most popular of the three traditional diffusion of innovation models. Rogers (1962) developed the first model of diffusion and defined it as, "the process by which an innovation is communicated through certain channels

over time among the members of a social system”. Chang (2010) posits that diffusion of innovation theory explicates the adoption process of an innovation by modeling its entire life cycle according to the aspects of communications and human information interactions. Rogers (2003), sees an innovation to be any “idea, practice, or object that is perceived as new by an individual or other unit of adoption”. Drawing from Rogers’ definition of innovation, online shopping web pages, can be seen as a new idea conceptualized by both ‘click only’ and ‘click and mortar’ firms, as a distribution channel to reach customers. This is certainly an innovation as it is different from the traditional way of shopping, particularly, in this clime.

Cheng *et al*, (2004) note that Roger’s model classified innovation adoption framework into five onward stages: innovators, early adopters, the early majority, the late majority, and the laggards, with 2.5%, 13.5%, 34%, 34% and 16% of the population respectively (see figure 2.5). The diffusion process is affected by four key elements: innovation, the social system which the innovation affects, the communication channels of that social system, and time (Rogers, 2003). As one of the most influential theories of communication in marketing, the focus of diffusion theory is on the means by which information about an innovation is disseminated. As opined by (Chang, 2010) “Rogers’ model serves as a comprehensive framework for understanding diffusion process of an innovation and the underlying factors driving the diffusion”.



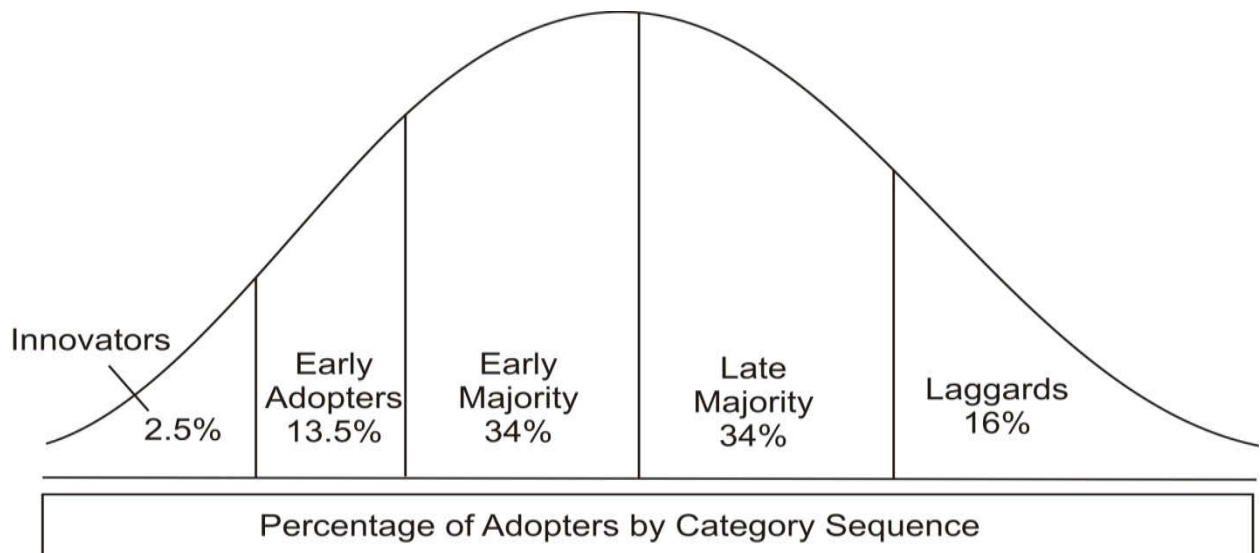


Figure 2.5 Adopter categories of innovation

Source: Schiffman and Kanuk (2007)

All innovations (products, services, ideas etc) do not have equal potential for consumer acceptance. While some innovations enjoy instant acceptance others may take some time to achieve same (Schiffman & Kanuk, 2004). Although there are no precise formulae by which marketers can evaluate an innovation's likely acceptance, Rogers (2003) has identified five innovation characteristics that seem to influence consumer acceptance of innovative products: relative advantage, compatibility, complexity, trialability and observability. These characteristics, Chen and Crowston (n.d.) argue, account for much of the dynamic nature of the rate or speed of adoption. Rogers (2004) further posit that in addition to the aforementioned characteristics of innovation, communication channels and social system are likely to have varying influences at different times during the diffusion process. How these four elements interact in the diffusion process for innovation adoption is succinctly captured by Chen, Kirkley, and Raible (2008) as shown in figure 2.6

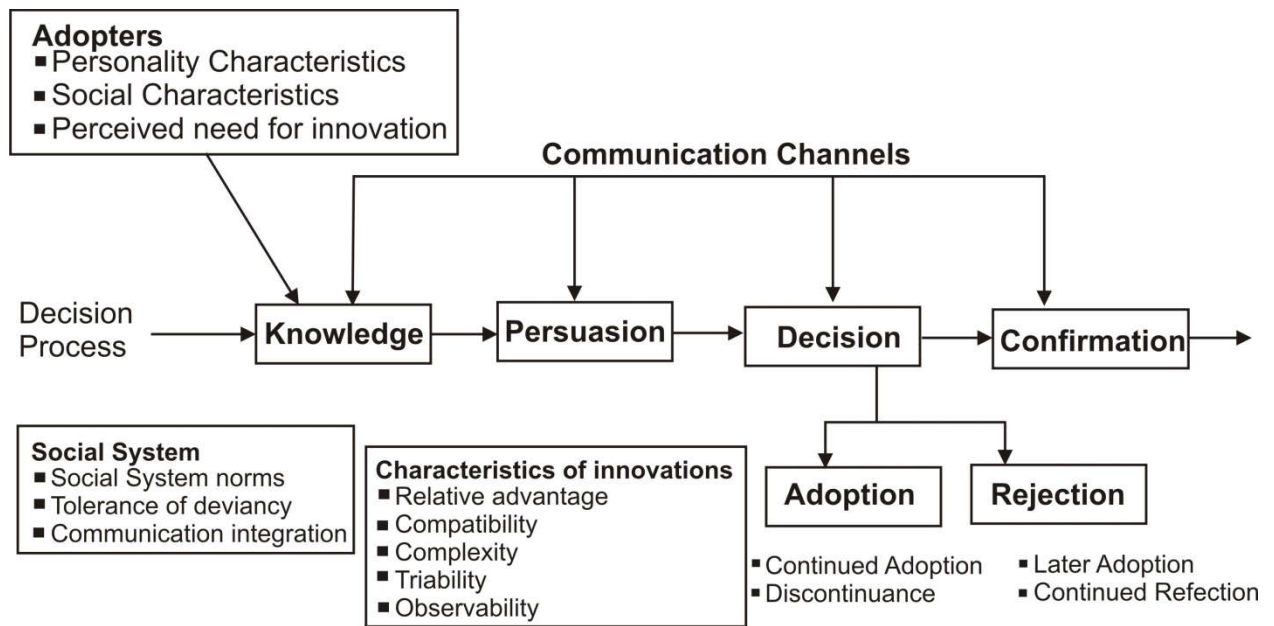


Figure 2.6 the interaction of the four components in the diffusion process leading to innovation adoption.

Source: Chenet *al*, 2008.

Theory of diffusion of innovation has enjoyed large support and extensive application in such academic disciplines as anthropology, communication, geography, sociology, marketing, political science, public health, economics, technology management (Moseley, 2004; Rogers, 2004; Chang, 2010) and therefore, can be eminently employed as a foundational theory for this study.

### 2.3 Conceptual Framework

Based on the foundational theories discussed in the preceding section, this thesis employs a conceptual model (see figure 2.7) which extends the parsimonious technology acceptance model (TAM). This conceptual model further highlights both the predictor and criterion variables and the relationships that exist between them. As a result, this thesis proposes that the constructs of socio-demographics, innovativeness, product type, and perceived risk, acting jointly with TAM's original constructs of perceived usefulness and perceived ease of use, will be more efficient in predicting consumers' acceptance of e-shopping. Consequently,

this conceptual model becomes the research framework upon which these predictor variables are investigated vis-à-vis their impact in determining tertiary students' acceptance of e-shopping in Lagos Nigeria, and therefore, guides the rest of this study.

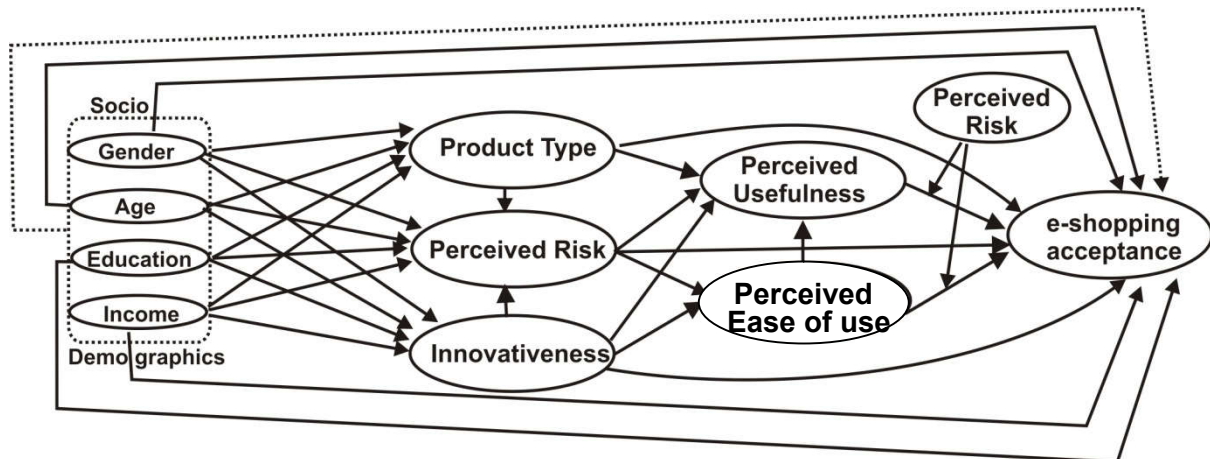


Figure 2.7: A modified Technology Acceptance Model for predicting e-shopping acceptance  
Source: Developed by researcher (2016)

### Socio-Demographics:

Broadly, the concept of socio-demographics has been defined to include such variables as gender, age, education, income, marital status, occupation (Khan, 2006), and culture (Chau, Cole, Montoya-Weiss & O’Keefe, 2002; Zhou, *et al*, 2007). However, among these preceding socio-demographic variables, Burke (2002) found some relationship between gender, age, education and income, and consumers’ attitude toward e-shopping, though, the relationship is significantly moderated by such TAM variables as “ease of use” and “usefulness”. For the present study, the socio-demographic variables investigated include gender, age, education and income.

Socio-demographic variables play vital roles in consumers’ purchase decisions, evaluation of products before purchase and choice of where to shop (Lancaster & Massingham, 2011). Hence, Oghojafor and Nwagwu (2013) argue that outlet for shopping is an integral choice set of today’s modern customer. As emerging retail practice reveals, shopping outlets can take

both store and non-store forms (Jobber, 2009). Internet web pages for shopping have become one of such non-store patronage medium (Brown, Pope & Voges, 2003) whose acceptance as proposed in this conceptual model is influenced directly by such socio-demographic variables of consumers as gender, age, education level and income and indirectly through the types of products sold online, level of consumers' risk perception, innovativeness, perception of ease of use and usefulness of Internet as a medium for shopping.

Zhou *et al*, (2007) observe that socio-demographic variables engaged the attention of scholars at the early stages of their study to unravel determinants of electronic shopping. Though, while some of the studies that examined the relationship between socio-demographics and e-shopping have found that socio-demographics influence customers' attitude towards online shopping (Gupta, Pitkow & Recker, 1995; Haque & Khatibi, 2005; Khatibi, Haque & Karim, 2006; Hashim, Ghani & Said, 2009), yet others have reported mixed results, particularly in studies relating to age and intentions to engage in e-shopping.

### **Gender:**

This is the socio-demographic variable that deals with the sexes of consumers. Of the two genders, women exhibit more positive attitude toward shopping and equally obtain greater satisfaction from shopping than men (Alreck & Settle 2002). In fact, in some countries like Nigeria, wives mainly shop for their families particularly for essential goods (Oghojafor, Ladipo & Nwagwu, 2012).

Aside the differences that exist in the attitudes of consumers due to gender, researchers are curious also, to understand how these differences when juxtaposed with the differences between an online store and their physical counterparts will influence online shopping acceptance. Writing on the differences between an online retail stores and the physical ones,

Lohse and Spiller (1998) aver to the differences that exist between these forms of retailing by noting that in an online store a help button on the home page of an e-tailer's shopping webpage do take over brick-and-mortar store's sales clerk's friendly advice and service; and also, a physical store's familiar layout is replaced by a maze of pull-down menus, product indices and search features. These differences both in gender of consumers and even in store forms, no doubt, will continue to attract interest of scholars.

### **Age:**

This socio-demographic variable refers to the chronological number in years of existence of a consumer. According to Zhou *et al.*, (2007) and Girard, *et al.*, (2003), research findings on the impact of this variable on Internet shopping have remained mixed and inconclusive.

### **Education:**

Education as a socio-demographic variable refers to consumers' level of formal education attainment. According to Monsuwe *et al.*, (2004), education plays a moderating role in the relationship between the basic determinants of consumers' attitude and intention to shop online. Higher educated consumers are more comfortable using non-store channels, such as the Internet to shop (Burke, 2002). Reason for this is that education is often positively correlated with an individual's level of Internet literacy (Liet *al.*, 1999).

### **Income:**

This refers to the income of respondents. Early studies such as Donthu and Garcia (1999), Korgaonkar and Wolin (1999), Li *et al.*, (1999), Bagchi and Mahmood (2004), Mahmood, Bagchi, and Ford (2004) and Susskind (2004) have compared the profile of online shoppers to those of traditional store shoppers and found that online shoppers tend to earn more income than traditional shoppers. Justifying these results, Zhou *et al.*, (2007) posit that most

of the goods bought online such as books, CDs, holiday and leisure travel, PC hardware, and software, are items which shoppers demand as their income increases. Extant literature however shows that current focus is now on the effect of income on e-shopping behaviour of consumers. Analysis of these studies has shown that while some studies have found income as an influencing factor of online shopping behaviour, others have not (Hashim, *et al*, 2009; Chang, Cheung, & Lai, 2005).

As captured in this study, Internet web pages for shopping is proposed in this conceptual model to be influenced directly by such socio-demographic variables of consumers as gender, age, education level and income. Socio-demographic variables equally affects e-shopping acceptance indirectly through the types of products sold online, level of consumers' risk perception, innovativeness, perception of ease of use and usefulness of Internet as a medium for shopping.

**Innovativeness:**

The concept of consumer innovativeness has enjoyed generous contributions from scholars and as a result, has been approached from different perspectives. However, some scholars whose works have continued to expand and enrich the concept and measurement of consumer innovativeness include Venkatraman and Price (1990) whose work distinguishes 'cognitive' from 'sensory' innovativeness. The former refers to individuals who prefer to engage in activities that stimulate the mind while the latter seek sensory stimulation.

Similarly, independent judgment making and novelty-seeking are two facets of consumer innovativeness identified by Manning, Bearden and Madden (1995). While Independent judgment making is the extent to which an individual shopper makes innovation decisions independently of others' communicated experiences (Midgley & Dowling, 1978) novelty-

seeking is the desire of a shopper to seek out information about new product (Hirschman, 1980).

Also, Price and Ridgway (1983) formulated the concept of 'use innovativeness.' They defined this concept as the use of previously adopted products in novel ways (Hirschman, 1980). Finally, Chiu, Fang and Tseng (2010) view innovativeness as relating to a person's tendency to be a technology pioneer and assume thought leadership

As a consequence of these differing perspectives, Roehrich (2004) opines that there seem to be lack of consensus on the concept of innovativeness in literature and quickly observed that the central theme that runs through the different conceptualizations of innovativeness is that the term describes consumer's early purchase of a new product (Cestre, 1996) and the tendency to be attracted by new products (Steenkamp, Hofstede & Wedel, 1999). Roehrich (2004) also referred to the works of Midgley and Dowling (1978), which made a distinction between actualized and innate innovativeness which has influenced many writers to think of innovativeness as a trait.

However, Goldsmith and Foxall (2003) noted that generally, the concept of innovativeness refers to individual differences that are evident in the way people respond to new things. They further distinguish between three approaches to the conceptualization of innovativeness which exist in literature. These recognized approaches include behavioural, global trait, and domain-specific innovativeness

In their own contribution, Citrin, Sprott and Silverman (2000), argue that in spite of the fact that a number of scholars have adopted diverse approaches to define and to measure innovativeness of consumers (see Bass, 1969; Craig & Ginter, 1975; Hirschman, 1980b; Goldsmith & Hofacker, 1991; Joseph & Vyas, 1984; Rogers & Shoemaker, 1971), two main

types of the innovativeness construct have emerged, namely open processing or general innovativeness and domain-specific innovativeness.

The behavioural perspective on innovativeness according to Goldsmith and Foxall (2003) identifies the concept with the act of adoption. Consumers are thus designated as innovators or otherwise depending on whether they adopt a new product or not. Moreover, the degree of innovativeness they possess depends on how quickly they adopt after encountering the innovation. According to Foxall (1990), this behavioural view is conceived within a broader approach to consumer behaviour and, this depicts the behaviour of the earliest adopters of new products (*consumer initiators*) as determined by the high levels of both utilitarian (functional, technical, economic) and symbolic (social, psychological) rewards available to the consumer at this initial phase of the life cycle of the new product.

The Goldsmith and Foxall (2003) global trait view of innovativeness can be equated to Citrin *et al.*, (2000) open processing or general consumer innovativeness, which argues that innovativeness is a type of personality trait. Personality traits are thought to be relatively enduring patterns of behaviour or cognition that differentiate people. Innovativeness describes people's reactions to new and perhaps, uncommon things. These reactions range from a very positive attitude toward change to a very negative attitude. Across the population, these attitudes are hypothesized to follow a bell-shaped normal distribution (Rogers, 1995). Others whose works capture these personality trait theory include Jackson (1976), Hurt, Joseph and Cook (1977), Goldsmith (1991), Costa and McCrae (1992), and Popkins (1998).

In discussing the concept of general/open-processing innovativeness, Citrin *et al.*, (2000) borrowed from the work of Joseph and Vyas, (1984) which focus on a consumer's cognitive style. Cognition incorporates an individual's intellectual, perceptual, and attitudinal



characteristics. Cognitive style affects the ways in which an individual reacts to new products, sensations, experiences, and communications within their environment. This approach contends that a person who scores high on the trait of open-processing innovation cognitive style will be open to new experiences, and will, in fact, seek out these experiences.

While the general consumer innovativeness (global personality traits) is an important concept in the explanation of behaviour, it has proved to be only weakly associated with specific consumer behaviours (see Foxall & Goldsmith, 1988). For this reason, efforts have been made to conceptualize ‘consumer innovativeness’ as the tendency to buy new products soon after they appear in the marketplace (Foxall, Goldsmith & Brown, 1998, pp. 40–45). Thus, consumer innovativeness is a more restricted or less general concept than global innovativeness.

Domain specific innovativeness is seen as an alternative to the global view of innovativeness. It suggests that while it is true that people are different in their acceptance of new ideas, experiences, products, it is useful to think also of innovativeness as a domain-specific characteristic. That is, consumers are seen as being more or less innovative within specific product categories, such as a fashion enthusiast, a wine connoisseur, or a movie buff. Innovativeness does not overlap across product categories unless these are closely related (Goldsmith & Goldsmith, 1996).

Again, Citrin *et al.*, (2000) observe that a limitation associated with a general approach to innovativeness is that consumer innovation may be more domain or product specific, and less of an individual personality characteristic. They opine that domain- or product category-specific innovation reflects the tendency to learn about and adopt innovations within a specific domain of interest and, therefore, taps a deeper construct of innovativeness more

specific to an area of interest. From their perspective therefore, Citrin *et al*, (2000) see innovativeness in the area of adoption of Internet shopping as being domain specific rather than global. This present work aligns with this view and therefore hypothesizes that innovativeness do affect e-shopping acceptance. As a result, in the conceptual model, the level of a consumer's innovativeness is proposed to directly affect his e-shopping acceptance and indirectly also, through his perceptions of risk, usefulness and ease of use of these online shopping channels.

### **Product Type:**

Products can basically be classified into two categories of consumer and industrial goods. However, since the focus of this study is on consumer online shopping rather than industrial online buying, the goods of interest here remain consumer goods. In classifying consumer goods, Copeland (1923) identifies goods in separate categories such as convenience, shopping, and specialty goods. In addition to these three categories, Kotler and Armstrong (2004) identified a fourth category which they termed unsought products.

Throwing more light on how these classifications are conceptualized in conventional marketing research, Aspinwall (1968) and Holton (1958) propose that products classification should reflect shopping effort more appropriately and should be placed along a continuum. While Kotler (2003) employed product characteristics as a basis for classifying products into three categories of durability, tangibility and use goods, other writers have used level of information asymmetry to classify products into three types: search goods, experiential goods and credence goods (Darby & Karni 1973; Nelson, 1970, 1974).

In classifying products as search goods, experiential goods and credence goods, these studies suggest that all goods/services be placed on a continuum ranging from easy to difficult to

evaluate; their location on the continuum, which depends on the level of information asymmetry, determines whether they are regarded as search, experiential, or credence goods/services. Thus, Search products are those that can be evaluated from externally provided information. Experiential products, on the other hand, require not only information, but also need to be personally inspected or tried. Credence products are those that are difficult to assess, even after purchase and use (Laroche, Yang, McDougall, & Bergeron, 2005).

In line with the above conceptualizations, Zeithaml and Bitner (2000) group such goods as clothing and furniture as being high in search attributes because they are easy to evaluate before purchase. Goods/services such as vacations, telecommunication, or restaurants rely on experiential attributes because their intangible nature precludes customers from evaluating their quality until the time of purchase and consumption (Brush & Artz 1999; Klein 1998). Finally, Lovelock (2001) identifies credence goods/services to include, legal services, financial investments, and education. The specialized knowledge needed to provide a credence good/service makes it difficult for the client to evaluate the service quality even after purchase and consumption.

Though a large number of studies have adopted these models (Hsieh, Chiu, & Chiang, 2005), yet, other writers have argued that these models as designed may not be completely fit for online marketing. Alba *et al.*, (1997) in their incisive discussion of whether search, experiential or credence products are more prone to online purchase, argue that quality of information and a consumer's ability to predict post-purchase satisfaction with products will be more accurate predictors of a product's suitability for online purchase. Although they offer a more complex product classification alternative, their proposition is that certain products are more likely to be bought online than others.

Peterson, Balasubramanian, and Bronnenberg (1997) propose that owing to the special characteristics of the Internet, a more relevant classification system is necessary for classifying products online. The lack of physical contact and assistance in shopping on the Internet is one factor that should influence this classification. Another factor is the need to feel, touch, smell or try the product, which is not possible when shopping online (Monuwe *et al.*, 2004).

With regard to the foregoing therefore Peterson, Balasubramanian and Bronnenberg (1997) propose a classification system based on three dimensions: cost and purchase frequency, value proposition and degree of differentiation. The first dimension ranges from inexpensive, frequently purchased goods (e.g. consumable products such as milk) to expensive, infrequently purchased goods (e.g. durable products such as a tv set). They argue that individuals avoid purchasing inexpensive and frequently purchased goods online. The second dimension follows the product value proposition and classifies the products as either tangible and physical products or intangible services. The third dimension refers to the degree of product differentiation. Thus, Peterson *et al.*, (1997) conclude that in general, when purchase fulfillment requires physical delivery, the more frequent the purchase and the smaller the cost (e.g. milk), the less likely there is to be a good "fit" between a product or service and the Internet-based marketing.

Monuwe *et al.*, (2004) contend that some product categories are more suitable for online shopping than other categories. They argue that consumers' decisions whether or not to shop online are influenced by the type of product or service under consideration. Consequently, Monuwe *et al.*, (2004) propose that clearly standardized and familiar products such as books, videotapes, CDs, groceries, and flowers, have a higher potential to be considered when shopping on the Internet, especially since quality uncertainty in such products is

virtually absent, and no physical assistance or pre-trial is needed (Grewal, Iyer & Levy, 2002; Reibstein, 1999). On the other hand, personal-care products like perfume and lotion, or products that require personal knowledge or experience like computers and cars, are less likely to be considered while shopping online (Elliot & Fowell, 2000). Thus, if personal interaction with a salesperson is required for the product under consideration, consumers' intention to shop on the Internet is low. Furthermore, if consumers need to test the product under consideration, or have the necessity to feel, touch or smell the product, then their intention to shop online is low as well. However, in case of standardized and familiar goods, or certain sensitivity products that require a level of privacy and anonymity, consumers' intention to shop on the Internet is high (Grewal *et al.*, 2002).

Expanding on the concept of intangibility of goods in the face of online marketing, Laroche, Yang, McDougall, and Bergeron (2005) observe that though intangibility is a key differentiating factor between goods and services as the term refers to “what cannot be seen, tasted, felt, heard, or smelled” (see Kotler & Bloom, 1984). In this sense, intangibility refers to the total inability of human senses to access the product or service's attribute.

Selling of tangible/physical goods in the Internet has continued to extend the conceptualization of intangibility which has continued to evolve, first from a two dimensional construct (Dub'e-Rioux, Regan&Schmitt 1990; Breivik, Troye, & Olsson 1998) and most recently to a three dimensional one (Laroche, Bergeron, & Goutaland 2001). This classification of goods and services has become particularly useful with the increased physical intangibility of both goods and services that is mainly the result of technological advances. Digital information is becoming commonplace with the introduction of software products and music technology which are now found in varying degrees in CD, DVD, MP3 and MP4 formats. Although these items are goods, they are physically intangible, being

audible only through a CD or MP3 player or visible through a computer terminal (Freiden, Goldsmith, Takacs, & Hofacker 1998). Intangibility has strong impact on consumer decision making (Laroche *et al.*, 2001). A good/service's intangibility is a dominant feature of the ease or difficulty that an individual has when making a pre-purchase evaluation of an item; as a result, Internet use necessitates a more complete understanding of intangibility (Laroche *et al.*, 2005).

The present study aligns with the point of view that online product type has an impact on online shopping. Given the increased physical intangibility of both goods and services on the Internet, this study borrows from the classification of online products based on information asymmetry and therefore proposes that whether or not a product is bought online is dependent on whether the product is a search, experiential or credence good and the level of risk a consumer perceives about the product and medium and, also whether s/he perceives online stores as both easy and a useful channel to purchase such products.

### **Perceived Usefulness (PU):**

It is germane to discuss the conceptualization and role of perceived usefulness in the technology adoption process for online shopping from the point of view of consumers shopping motivation. Without doubt, consumers harbour multiple shopping motivations (Westbrook & Black 1985), however, extant literature reveals that most of these motivations are grouped into utilitarian and hedonic motivations. These facets of shopping motivations primarily help in the study of consumer shopping behaviour (Childers *et al.*, 2001). This is because these two motivations maintain a basic underlying presence across consumption phenomena (Babin, Darden & Griffin 1994). Childers *et al.*, (2001) further argue that this

dual classification of motivations is in tandem with the acceptance of interactive shopping behaviour as a new form of shopping mediated by technology.

The hedonic motivation for shopping covers the enjoyment part of the shopping process while utilitarian motivation is concerned with the functional aspect. The utilitarian motivation is goal-directed and views the consumer as a rational entity who carefully considers and evaluates information about products before purchase. Thus, from the functional perspective; consumers are concerned with purchasing products in a timely and an efficient manner to achieve their goals with a minimum of discomfort or irritation (Childers *et al.*, 2001). While some consumers may be shopping only for utilitarian purposes, others may be primarily enjoying these interactive media, and thus both factors can ultimately affect their attitude toward using interactive forms of shopping. The seeming positive disposition that the consumer holds in the capability of the technology to lead to the achievement of his shopping motivation is reflected within the TAM framework as *Perceived usefulness*; and as Davis *et al.*, (1989) posit perceived usefulness (PU) is a major influence of attitude on the use of technology.

PU is conceptualized by Davis (1989) as the degree to which a user believes that the technology will improve the performance of an activity. In e-commerce, it refers to how effectively Internet shopping helps consumers to accomplish their task (Tong, 2010) and therefore refers to the *outcome* of the shopping experience (Childers *et al.*, 2001). In e-shopping an activity involves the ability to improve shopping performance, shopping productivity, and most importantly, accomplishing shopping goals. These as noted by McCloskey (2004), were the indices of a successful shopping activity. The findings of Barkhi, Belanger, and Hicks (2008) are in agreement with this as their study suggests that consumers will build positive attitudes toward products and services that are sufficiently

beneficial in terms of providing a solution and negative attitudes toward those that are not beneficial.

Perceived usefulness is a comparable theoretical concept to the construct of relative advantage in the Diffusion of Innovation theory (Chen *et al.*, 2002). Scholars conceptualize relative advantage to be the degree to which an innovation is seen as offering a clear advantage. This advantage may include economic profit, a social prestige or other benefits (Rogers, 1995). Zarrad and Debabi (2012) therefore assert that perceived usefulness refers to the advantages a person receives from the use of Internet as a medium for shopping such as saving time and money and having access to information.

But what other factors influence the behaviour and workings of this construct? Davis (1989) theory of technology acceptance is anchored on such beliefs about the task-value and user-friendliness of new information systems. Although this work has been extremely valuable in explaining first-order effects, Venkatesh and Davis (1994) and Karahanna and Straub (1999) however seek answers on how and why the beliefs of usefulness and ease of use start to form in the first place. What, for example, explains how a user comes to believe that a system is useful in his or her job? What would be the presumably different psych-sociological antecedents for a belief that a system is simple or difficult to use?

Literature reveals that social contexts can act as precedence to PU by creating perceptions of usefulness and ease-of-use (Karahanna & Straub, 1999). According to Yi, Jackson, Park, and Probst (2006) subjective norms and image are additional factors identified in literature to have positive impact on perceived usefulness. In the area of electronic commerce, perceived ease of use, as a predictor of perceived usefulness, has been suggested as affecting consumers' perception of usefulness. However, both are construed to be closely linked as



Ramayah and Ignatius (2005) argue that consumers who see online shopping as effortless would in turn develop a tendency to perceive it as useful. The reason behind such a phenomenon is due to the fact that a consumer would naturally try to mould his or her view of online shopping based on past experiences in engaging in online shopping activities and the ease in which the shopping activity is executed (Lim & Ting, 2012). Consistent with this line of argument this thesis proposes that ease of use of online shopping platforms will lead to its perception as useful for achieving shopping motivations which will subsequently result in its acceptance.

### **Perceived Ease of Use (PE):**

The second crucial determinant of technology adoption as identified by Davis *et al.*, (1989) is “perceived ease of use”, referring to the degree to which a person believes that using the new technology will be effortless. While “perceived usefulness” refers to consumers’ views regarding the outcome of the experience, “perceived ease of use” conceptualizes consumers’ perceptions regarding the process leading to the final outcome. Hence, Lim and Ting (2012) define perceived ease of use as the concentration of physical and mental efforts that a user hopes to expend when using the technology. Other theoretical perspectives studying user acceptance have equally used similar constructs-Thompson, Higgins and Howell (1994) employed a construct called "complexity," and Moore and Benbasat (1991) also tagged the construct, "ease of use."

In spite of the prominent role that perceived ease of use is adjudged to play in TAM research in particular and user technology acceptance research generally, Vankatesh and Davis (1996) recognize the importance of understanding the antecedents of key TAM constructs of perceived usefulness and perceived ease of use in order to appreciate TAM’s explanation of acceptance and use of technology. The role of the construct of perceived ease of use is better

understood by scrutinizing the two paths through which it impacts intention. On the one hand, a user's perceived ease of use affects his intentions directly and also indirectly through perceived usefulness, and on the other hand, it is a prime obstacle that is in the way a user would need to surmount in order to aid his acceptance and subsequent use of the technology (Vankatesh, 2000). This line of thought is equally highlighted in literature as immense collection of research in behavioural decision making (e.g., Payne, Bettman, & Johnson 1993) and Information System (e.g., Todd & Benbasat 1991, 1992,1993,1994) show that users attempt to minimize effort in their behaviours, thus supporting a relationship between perceived ease of use and usage behaviour.

In his work titled "Determinants of perceived ease of use: Integrating control, intrinsic motivation, and emotion into the technology acceptance model" Vankatesh (2000) argues that understanding the determinant structure of this key driver of user acceptance and usage is critical as it will engender favourable perceptions which will lead to technology acceptance and usage.

In the area of e-commerce, Buton-Jones and Hubona (2005), note that the ease of learning and user skillfulness at using prevalent systems such as web technologies and interfaces on online shopping sites, are valid determinants of users' opinion to a technology being easy to use. Also, Selamat, Jaffar, and Ong (2009) argue that a technology which is rated to be easier to use than another is more likely to be accepted by users whereas the more complicated a technology is seen to be, the slower the adoption rate will be. This aligns with the proposition of Teo (2001) that a technology which is easy to use usually involve less user effort and thereby increases the likelihood of adoption and usage of such technology.

Other studies like Bisdee, (2007) and Yulihasri and Daud, (2011) have also found that perceived ease of use had a positive influence on consumers' attitude in using the Internet to shop online. This is consistent with the work of Childers *et al.*, (2001) which argued that online merchants who are able to provide online shopping sites which are clear and understandable, with less mental effort requirement, and allow consumers to shop without encumbrances results in ease of use perceptions in users' minds with favourable attitudinal association to online retailers who can do so.

It is note-worthy however, that while results of several studies have been consistent that users' perceived ease of use is mediated by perceived usefulness in its impact on users' acceptance and use of technology, studies on the direct effect of perceived ease of use on adoption of technology have continued to produce mixed results. Thus, prompting Gefen and Straub (2000) to look at the role of perceived ease of use (PE) in TAM as contentious while Keil, Beranek and Konsynski (1995) have questioned the overall essence of PE in IT adoption.

In a study titled "The relative importance of perceived ease of use in IS adoption: a study of e-commerce adoption" Gefen and Straub (2000) provided a theoretical elucidation of the mixed effects of perceived ease of use (PE) on IT adoption by distinguishing between *tasks* that are intrinsic from those that are extrinsic to the IT. They explain that tasks that are intrinsic to the IT are the ones where the IT itself is primarily the "ends," for which the IT is ultimately being adopted. On the other hand, tasks that are extrinsic to the IT, are those in which the IT is merely a "means" to attaining the primary objective in which case the IT not only acts as the central component of the process, but also serves as the interface through which a goal is achieved.

Applying the above proposition to e-commerce, Gefen and Straub (2000) posit that when a Web site is used as a medium to *purchase* products, perceived ease of use would not influence IT adoption because in this case, IT ease-of-use is not an inherent quality of the purchased product. On the other hand, when the Web site is used only to make product *inquiry*, perceived ease of use affects IT adoption because the information sought is attached to the IT and thus its quality directly relates to IT ease-of-use. This study aligns with the trend of thought that perceived ease of use will affect e-shopping acceptance whether the purpose of the consumer is product information search or for outright online product purchase. Consequently, this study proposes that consumers' perception of online channels as easy to use has a direct effect on their e-shopping acceptance and indirect effect through perception of usefulness of such medium for shopping activities.

#### **Perceived Risk (PR):**

Every day, consumers make decisions regarding what products or services to buy and where to buy them. Because the outcomes and consequences of such decisions are often uncertain, the consumer perceives some degree of risk in making a purchase decision. The way consumers perceive risk differs. According to Schiffman and Kanuk (2007), consumer's perception of risk depends on his personality, the product, the situation, and the culture while Koller (1988), opines that the degree of importance of the purchase situation determines the potential effect of the perceived risk.

It is difficult to express or capture Risk as an objective reality; hence literature has largely addressed the notion of perceived risk (Yousafzai, Pallister, & Foxall, 2003). In the stream of consumer research, perceived risk has been conceptualized as the perceived uncertainty in a purchase situation. Schiffman and Kanuk (2007) for example, have defined perceived risk as

the uncertainty that consumers are confronted with when they cannot predict the consequences of their purchase decisions. Featherman and Pavlou, (2003) see perceived risk as a user's felt uncertainty about possible negative results of using a product or service. This follows Bauer's (1967) conceptualization of perceived risk as "a combination of uncertainty plus the seriousness of the outcome involved" and that of Peter and Ryan, (1976) that perceived risk is the expectation of losses associated with purchase and which acts as an inhibitor to purchase behaviour.

In the context of Internet shopping, Lee and Turban (2001) visualize risk as a relevant situational parameter in that: (i) there is uncertainty about the outcome of an Internet shopping transaction, (ii) the outcome depends on the behaviour of the Internet merchant, which is not within the consumer's purview and control, and (iii) the harm of an undesirable outcome may be greater than the benefits of a successful outcome. Additionally, Kim, Ferrin and Rao (2008) conceptualize perceived risk as a consumer's belief about the potential uncertain negative outcomes from the online transaction. For Forsythe and Shi (2003) it is the subjectively determined expectation of loss by an Internet shopper in contemplating a particular online purchase.

As literature shows, uncertainty is a feeling which emanates because when a consumer makes a purchase the actual consequences of this purchase decision can only be known in the future. This idea is consistent in the conceptualizations of consumer risk (Havlena & DeSarbo, 1991; Dowling & Staelin, 1994). Apart from uncertainty though, other factors, which can be extracted from the research stream of consumer risk include: discomfort and/or anxiety (Dowling & Staelin, 1994), conflict aroused in the consumer (Bettman, 1973), concern (Featherman & Pavlou, 2003), psychological discomfort (Zaltman & Wallendorf, 1983),

making the consumer feel uncertain (Engel et al., 1986), pain due to anxiety (Taylor, 1974), and cognitive dissonance (Festinger, 1957; Germunden, 1985).

Earlier studies have identified various types of risk (Jacoby & Kaplan, 1972; Zikmund & Scott, 1973; Peter, & Ryan, 1976). Jacoby and Kaplan (1972) identified seven types of risks: financial, performance, physical, psychological, social, time and opportunity cost risk. On the other hand, Cunningham (1967) identified two major categories of perceived risk (a) psychosocial and (b) performance. He broke performance into three types: temporal, effort and economic; and broke psychosocial into two types; social and psychological. Cunningham (1967) further identified six dimensions of perceived risk which are performance, financial, social, opportunity/time, safety and psychological loss. He also posited that all types of risk emanate from performance risk. A rich stream of consumer behaviour literature supports the adoption of these risk facets to study consumer product and service evaluations and purchases (Featherman & Pavlou, 2003).

In literature the different facets of perceived risk have been explained by writers. For example, financial risk is defined as “the potential monetary outlay associated with the initial purchase price as well as the subsequent maintenance cost of the product” (Grewal *et al.*, 1994). It is expanded to include the recurring potential for financial loss due to fraud (Featherman & Pavlou, 2003). Performance or functional risk is “the possibility of the product malfunctioning and not performing as it was designed and advertised and therefore failing to deliver the desired benefits.” (Grewal *et al.*, 1994). Physical risk refers to risk to self and others that a product may pose, for instance, a consumer may be worried about the safety of a mobile phone with regard to emissions of harmful radiation. Psychological risk is the risk that the performance of chosen product will have a negative effect on the consumer’s peace of mind or self-perception (Mitchell, 1992). The frustration of not achieving a desired

goal for engaging in a purchase is known as loss of self esteem or ego loss (Featherman & Pavlou, 2003). The possibility of being socially embarrassed for choosing a poor product is known as Social risk. A consumer suffers from time risk when he/she spends time in searching for a product that may underperform (Schiffman & Kanuk, 2007) or as Featherman and Pavlou (2003) put it a consumer may consider the time he/she expends in searching, purchasing and learning the use of a bad product/service a waste as the product/service fails to perform to expectations. Finally, opportunity cost risk is the risk of present purchase falling short of both expectation and performing below a foregone alternative.

In the field of online shopping, Bhatnagar, Misra and Rao (2000) have identified three predominant types of risk which are: product risk, financial risk, and information risk (this covers the risks associated with security and privacy). The intangibility of e-commerce may cause e-shoppers to worry about the prospects of goods ordered online to fit their needs and perform up to their expectations (Weathers, Sharma, & Wood, 2007). Thus, Product risk which is a functional/performance risk is associated with the product itself, the risk of the product being defective. On the other hand, Financial risk, as explicated by Kim *et al.*,(2008) involves opportunity cost and time, which are rather related to the marketing channel, in this case the Internet, than to the product itself; for instance, the online purchase may be duplicated as result of technological error or unintentional double-clicking of the purchase button. Information risk is concerned with the security and privacy of the information of the consumer; for example, the necessity for a consumer to submit credit card information through the Internet can stir up apprehension in the mind of the consumer as this could expose him/her to credit card fraud (Fram & Grady, 1997).

As would be expected, risk factors have enjoyed extensive investigation in the stream of e-commerce research. Chang, Cheung and Lai (2005) note that, while some studies have investigated general perception of risk, others explored specific aspects of it. According to them, the general risks were measured by asking respondents to assess whether buying goods online was risky; whereas, specific risks were concerned with such issues as privacy infringement, system security, fraudulent merchant behaviour, credit card fault, and product risk (in not getting what was expected). Results from these studies have largely pointed to the influencing role of perceived risk on the acceptance of online shopping. In the generally perceived risk such studies as Kimery and McCord (2002), Heijden, Verhagen and Creemers (2003), Antony, Lin and Xu (2006), Crespo, Bosque and Sanchez (2009) found a significantly negative impact on intention and actual online purchasing behaviour. In an isolated case though, Ahn, Lee and Park (2001) in a comparative study of the role of perceived risk on online shopping acceptance of US and Korea consumers the authors found that both Perceived transactional risk and perceived product risk, have strong direct effects on the adoption of e-commerce in US while the result from the Korean dataset showed no significant effects of both constructs on the adoption.

On the perception of specific risk, Bhatnagar *et al.*, (2000) concluded that risks related to failed expectations and credit card could negatively affect consumers' online shopping intention. Contrary to this however, Miyazaki and Fernandez (2001) found that privacy infringement, system security, and fraudulent behaviour of online retailers did not have an influence on intention. Some writers such as Fram and Grady (1997) and Jarvenpaa, Tractinsky and Vitale (2000) attributed these inconsistent results to a narrow definition of risk and, therefore, called for specific measures.



A salient issue about the construct of perceived risk is its role when infused in the technology acceptance model. Literature shows that perceived risk has majorly been modelled as an antecedent of perceived usefulness, perceived ease of use and intention (see Jarvenpaa, Tractinsky, Saarinen, & Vitale, 1999; Featherman, 2001; Lee, Park, & Ahn, 2001; Gefen, Karahanna, & Straub, 2003; Wu & Wang, 2005). However, in a recent study Im, Kim and Han (2008) have begun to question this role. In their study titled “The effects of perceived risk and technology type on users’ acceptance of technologies” the authors argue that when PR is modelled as an antecedent of PU, it is assumed that PU and PR are related. They posit that these constructs are independent of one another and therefore, propose that PR would modify the effects of PU and PEU on BI.

While researchers strive to unearth the true role (either as antecedent or moderating/mediating variable) of perceived risk in technology acceptance, this study aligns with the opinion of Featherman and Pavlou (2003) that the combination of uncertainty (probability of loss) and danger (cost of loss) that make up perceived risk would hinder product evaluation (e.g. perceived usefulness) and e-shopping adoption. Given these diverse opinions by writers and in consideration of the context this study is carried out, an attempt is therefore made to reconcile the two divergent perspectives put forward by Im *et al.*, (2008) and other scholars. Again, as all these views contemplate perceived risk as an e-shopping impediment, in this study therefore, it is considered an inhibitor to consumers’ e-shopping acceptance either directly or indirectly through the mitigation of consumers’ consideration of online channels as both useful and ease to use.

### **Technology Acceptance:**

As a construct, 'technology acceptance' refers to the willingness of consumers to use the technology. In the domain of B2C e-commerce, it is defined as the consumer's intent to engage in an online exchange relationship with a virtual store which includes sharing of business information, maintaining business relationships and conducting business transactions (Zwass, 1998; Pavlou, 2003).

This willingness has been conceptualized and measured in technology acceptance research literature from the perspectives of consumers' attitude, behavioural intentions; overt behaviour or combination of these. For example, while such studies as Yoruk, Dundar, Moga and Neculila (2011) employed attitude and actual usage in their study of technology acceptance, such other studies as Hashim *et al.*, (2009) and Bakshi and Gupta (2012) focused on attitude. Also, while Kamarulzaman (2007) and Wu and Wang (2005) studied technology acceptance from the point of view of actual usage, other studies of such scholars as Kim and Forsythe (2009), Tong (2010), Gultekin (2011), and, Harrad and Debabi (2012), looked at technology acceptance from the perspective of adoption intention. For a listing of some of these researches see table 2.1

In the studies that employed behavioural/adoption intention perspective of technology acceptance, intention has been conceptualized as a person's subjective probability to perform a specified behaviour. As canvassed by Ajzen and Fishbein (1980), adoption intention has a major impact on behaviour in moderating the effect of other determinants on behaviour. And in the domain of online shopping, Chen *et al.*, (2002) and Yi *et al.*, (2006) posit that consumer acceptance and use of virtual stores can be predicted reasonably well from their intention, which is determined by their attitude towards using virtual stores. In agreement with this perspective, Pavlou (2003) argue that the construct of "intention to transact" aims to cover intentions regarding the entire process. Even when information exchange and product

purchase may be theoretically distinct intentions, they are posited without loss of generality, as practically indistinguishable in online transactions. The present study aligns with this perspective and therefore employs adoption intention as a measure of tertiary students' acceptance of online shopping. As depicted in the conceptual model, this study proposes that this intention to engage in online shopping can be predicted from consumers' socio-demographic variables, product type, innovativeness, perceived usefulness, perceived ease of use and perceived risk. Some of the TAM based studies and their acceptance constructs are listed in Table 2.1

**Table 2.1 List of some TAM based researches and their acceptance constructs**

S/N	Study	Acceptance Construct
1	Teo, T and Zhou, M (2014)	Intention
2	Zarrad, H and Debabi, M (2012)	
3	Gültekin, K (2011)	
4	Chiu, Y.-T. H., Fang, S.-C and Tseng, C.-C (2010)	
5	Kim, J and Forsythe, S (2010)	
6	Tong, X (2010)	
7	Vazquez, D and Xu, X (2009)	
8	Im, I.I., Kim, Y and Han, H.-J (2008)	
9	Yi, M.Y., Jackson, J.D., Park, J.S and Probst, J.C (2006)	
10	Saade, R and Bahli, B (2005)	
11	Gefen, D and Straub, D (2000)	
12	Kamarulzaman, Y (2007)	Use
13	Wu, J.H and Wang, S.C (2005)	
14	Hsu, C.-L and Lu, H.-P (2004)	
15	Klopping, I.M and Mckinney, E (2004)	
16	Yi, M.Y and Hwang, Y (2003)	
17	Karahanna, E and Straub, D,W (1999)	
18	Hashim, A., Ghani, E. K and Said, J (2009)	Attitude
19	Barkhi, R., Belanger, F., & Hicks, J. (2008)	
20	Lian, J.-W and Lin, T.-M (2008)	
21	Childers, T.L., Carr, C.L., Peck, J and Carson, S (2001)	
22	Yörükl, D., Dündar, S., Moga, L.M and Neculita, M (2011)	Attitude and use

Source: compiled by researcher

## 2.4 Empirical Literature Review

Review of empirical literature shows that socio-demographic variables engaged the attention of scholars at the early stages of their study to unravel determinants of electronic shopping. Though, while some of the studies that examined the relationship between socio-demographics and e-shopping have found that socio-demographic variables influence customers' attitude towards online shopping (Gupta, Pitkow & Recker, 1995; Haque & Khatibi, 2005; Khatibi, Haque & Karim, 2006; Hashim *et al.*, 2009), yet others have reported mixed results, particularly in studies relating to age and intentions to engage in e-shopping.

According to Zhou *et al.*, (2007) and Girard *et al.*, (2003), research findings on the impact of age on Internet shopping have remained mixed and inconclusive. Internet users in the 1990's were found to be primarily middle-aged and younger who had less purchasing power than the older ones (Zhou *et al.*, 2007). Consequently, early research showed either no significant age difference among online shoppers (Bellman *et al.*, 1999; Li, *et al.*, 1999) or that online shoppers were older than traditional store shoppers (Bhatnagar, Misra & Rao, 2000; Donthu & Garcia, 1999; Korgaonkar & Wolin, 1999).

Stafford *et al.*, (2004) in their work found a positive relationship between age and online shopping behaviour and Wood (2002) attributed this to the fact that relative to older consumers, younger adults, especially those under age 25, are more interested in using new technologies such as the Internet to find out about new products, search for product information, and compare and evaluate alternatives. Ratchford, Talukdar and Lee (2001) equally argue that older consumers may perceive the benefits of Internet shopping to be less than the cost of investing in the skill needed to do it effectively and therefore avoid shopping on the Internet. Also, Mosuwe *et al.*, (2004) note that consumers younger than age 25 are the group most interested in having fun while shopping and therefore respond more favorably than older shoppers to features that make online shopping entertaining.

On the other hand, Joines, Scherer and Scheufele (2003) found a negative relationship between consumers' age and intention to purchase online. Same with Sorce, Peroni and Widrick (2005) who found that while age was negatively correlated with online pre-purchase search, it was positively correlated with online purchasing when pre-purchase search behaviour was taken into account. Their study equally shows that while older online shoppers search for significantly fewer products than their younger counterparts, they purchase as much as younger consumers.

In contrast to the findings above, Hashimet *et al.*, (2009), Rohm and Swaminathan (2004), Vellido, Lisboa, and Meehan (2000) and Li *et al.*, (1999), found no effect of age on e-shopping behavior of consumers. These mixed results and discrepancies in research findings, Zhou *et al.*, (2007) argued, might be caused by the different criteria for defining age groups in different studies. As a result, they posit that a standard age classification should be used in future studies to make cross-study comparisons feasible.

It can be deduced from the works of Bellman *et al.*, (1999), Li and Zhang (2002) and Zhou *et al.*, (2007) that e-shopping is populated by relatively younger, wealthier and more educated consumers in climes where the Internet is new, but as the technology matures and becomes more prevalent, the gap in age of consumers gradually narrows in its effect on consumers' purchase decision and online shopping behaviour. In Nigeria, e-shopping is relatively a novelty. Hence, this thesis, based on the preceding argument, conceptualizes a significant relationship between consumers' age and their online shopping acceptance.

As literature reveals, results of studies on the effect of gender on online shopping behavior of consumers have been somewhat mixed and inconsistent. Findings of some studies show that

men have more positive attitude towards e-shopping and therefore prefers to shop online than women. Consequently, men are found to make more online purchases, spend more money online and are likely to shop online in the future than women who are found to be more apprehensive and therefore more skeptical of online shopping (Hasim *et al*, 2009; Zhou *et al*, 2007; Stafford, Turan & Raisinghani, 2004; Brown *et al.*, 2003; Rodgers & Harris 2003; Alreck & Settle 2002; Van Slyke , Comunale & Belanger, 2002; Donthu & Garcia 1999; Korgaonkar & Wolin 1999; Levy 1999; Li *et al.*,1999).

Interestingly, and in contrast to the foregoing, Pastore (2001) posit that based on the study conducted by Jupiter Media Metrix, women surpassed men numerically as online users in USA in 2001. Again, both Burke (2002) and Li *et al.*, (1999) reported that the female consumers that prefer e-shopping, shop more frequently online than their male counterparts. It is important to note however, that most of these studies have been limited by the context of non-African markets. Hence, this present study recognizes this gap and also, given the novelty of e-shopping, proposes that gender as a socio-demographic variable will impact on the online shopping behaviour of consumers in Nigeria.

Several studies on the effect of education on electronic shopping have produced mixed results. In their study, Teo (2006) found that a greater proportion of adopters of online shoppers in Singapore are highly educated when compared to non-adopters. In a related study conducted in the USA, Li *et al.*, (1999) found education and five other variables to be robust predictors of the online buying behaviour. Also, in an online survey of 425 US undergraduate and MBA students, Case, Burns, and Dick (2001) found education level and such variables as Internet knowledge and income to be powerful predictors of Internet purchases among university students.

Contrary to the above, Haque, Sadeghzadeh and Khatibi (2006) found no conclusive evidence that education level is an important determinant of online shopping behaviour. However, the present study aligns with earlier studies that found education as a predictor of online shopping behaviour and thus, conceptualizes that educational level will influence the online shopping acceptance of Nigerian tertiary students.

Unlike other socio-demography variables, empirical studies on the effect of income on e-shopping behaviour have been consistently positive (see Monsuwe *et al.*, 2004; Haque *et al.*, 2006; Hasim *et al.*, 2009). In their study, Hashim *et al.*, (2009), found a significant relationship between income and attitude towards online shopping behaviour of Malaysians. This is consistent with the findings of Monsuwe *et al.*, (2004) that consumers with higher household incomes tend to shop more online when compared to lower income consumers; and that of Haque *et al.*, (2006) which found that families with high monthly income tend to have more positive attitude towards online shopping relative to low-income households. The reason for this, according to Lohse, Bellman and Johnson (2000) is because higher household incomes are often positively correlated with possession of computers, Internet access and higher education levels of consumers. Other studies that agree with the positive relationship that exists between income and online shopping behaviour include Haque and Khatibi (2005), Harn, Khatibi and Ismail, (2006) and Sulaiman *et al.*, (2008).

However, given that cheaper smartphones and other mobile devices with Internet access are now in the hands of Nigerian consumers of varying income levels; which means that infrastructure for e-shopping is readily available to a lot more people, would there still be income effect on e-shopping acceptance? The onus is on the present study to unravel the effect of income on online shopping behaviour of consumers.

Having reviewed past studies on the effects of socio-demographics on consumers' e-shopping acceptance, it is important to note, however, that most of these studies have been limited by the context of non-African markets. Hence, this present study recognizes this gap and also, given the novelty of e-shopping, proposes that socio-demographic variables will impact on the online shopping behaviour of consumers in Nigeria.

On innovativeness, the empirical literature shows that the application of domain-specific innovativeness as a measure of consumer innovativeness in the study of online shopping tends to be popular with scholars (see Agarwal & Prasad, 1998; O'Cass & Fenech, 2003; Kamarulzaman, 2007 and Lian & Lin 2008). As Lian and Lin (2008) noted, previous studies found that consumer characteristics such as innovativeness are important when considering online shopping acceptance-related issues, this is so as innovativeness influences the way new technologies are perceived (Meuter *et al.*, 2003).

Writing on factors affecting adoption of product virtualization technology for online consumer electronics shopping, Kim and Forsythe (2010) found that innovativeness showed significant positive influences on such beliefs as perceived usefulness, ease-of-use, and entertainment value of online shopping. This result is in tandem with the works of Kamarulzaman(2007), which found positive direct relationship between consumer innovativeness and adoption of new technology in which case innovative shoppers appeared to comprehensively use the e-shopping medium and are more likely to engage in web features when shopping for travel services online. In their study on effects of consumer characteristics on acceptance of online shopping: comparisons among different product types, Lian and Lin (2008) found that increased personal innovativeness of information technology (PIIT) positively affects user attitudes toward purchasing high cost, infrequently purchased, and intangible products or services online. Given the consistency of the results of these studies,



the present study therefore, proposes that consumer innovativeness will impact positively on e-shopping acceptance of tertiary students in Nigeria.

Lian and Lin (2008) observe that though many researchers have insisted on the importance of product differences in online marketing, yet few empirical studies have reported on this issue. Most of previous studies focused on a single product or a group of similar products. For instance, Liang and Lai (2002) focused on book-buying activities. Dahlen and Lange (2002) concentrated on grocery retailing. Shim *et al.*, (2001) focused on search goods, and Ruyter, Wetzels, and Kleijnen (2001) concentrated on travel services. This narrow focus limited the generalisability of their results to a few products at best. Although Eastin (2002) used four common business-to-consumer (B2C) activities (e-shopping, online banking, online investing and electronic payment) to understand the critical influences on user acceptance, the four product types are homogeneous. The product effect is thus eliminated, and additional effort is required to systematically examine the effects of product types (Lian & Lin, 2008).

Other studies that have investigated what products are more likely to sell online include Phau and Poon (2000), whose work found that low cost and frequently purchased products that are intangible or informational and highly differentiable were more likely to be purchased online. However, Vijayasathy (2002) in another study found no effect of product cost on purchase intention. Studies on online product classification have remained largely inconclusive. Online product classification bases thrown up in literature include shopping effort, product characteristics such as durability, tangibility etc, level of information asymmetry (search, experiential, credence), cost and purchase frequency, value proposition and degree of differentiation; level of standardization and familiarity of product. This proliferation of classification bases makes generalization of results largely impossible. However, as has been shown in literature, researchers generally agree that product and service type do play a role in

online shopping (Peterson *et al.*, 1997; Liang & Huang, 1998; Phau & Poon, 2000). The present study goes along with the postulation that product type will influence consumers' e-shopping intention.

Empirical researches on perceived usefulness have taken several directions since its role in the technology acceptance model was validated through such early studies as Davis (1989) and Davis *et al.*, (1989). In e-shopping literature, PU has been operationalised to confer on e-shopping advantages over traditional mode of shopping, Barkhi and Wallace (2007), and Bisdee (2007) in related studies found that online shopping sites which can provide helpful services to consumers; services which are distinguishable and are lacking in the traditional shopping outlets such as low costs of information search and comparing of products of interest at a glance, will be seen as useful by consumers and this, in turn, will influence consumers to develop favourable attitudes toward online shopping.

In consonance with the outcomes of the studies cited above, the findings of Childers *et al.* (2001) suggest that consumers who had positive attitudes toward online shopping also see online retailers as being useful since this medium enhances their productivity, effectiveness and ability to shop. Another study in this stream of research is the work of Barkhi, Belanger, and Hicks (2008) on PU which found that consumers build positive attitudes toward products and services that are sufficiently beneficial in terms of providing a solution and negative attitudes toward those that are not beneficial.

Other studies have taken a different route by investigating the antecedent role of social contexts in the functioning of PU in technology acceptance model. By combining such socio-psychological theories as social influence theory, social presence theory and Triandis' modifications with the theory of reasoned action and the technology acceptance theory,

Karahanna and Straub (1999) in their work on the psychological origins of the constructs of usefulness and ease-of-use, explained how social contexts create perceptions of usefulness and ease-of-use. They found that system use is impacted by consumers' views about the usefulness of the medium and this, in turn, is affected by perceptions of the ease-of-use of the medium, the amount of social influence wielded by supervisors, and the associated social presence of the medium.

Consistent with this stream of research, subjective norms and image are additional factors identified in the literature to have a positive impact on perceived usefulness. Yi, Jackson, Park, and Probst (2006) in a study aimed at understanding information technology acceptance by individual professionals, found that the opinions of important referents could be the basis for a person's feelings about the utility of a technology. That is if a superior or peer says that a particular innovation might be useful; the suggestion could affect the individual's perception of the usefulness of the innovation. Additionally, they also posit that an individual may believe that a system is useful because the system enhances his/her image and social status.

These results are similar to the findings of Schmitz and Fulk (1991) that co-worker use of E-mail and supervisors' perceptions of the usefulness of the medium had a significant effect on PU, which in turn influences usage of Email. And as Bruner and Kumar (2005) suggest, users are likely to consider a technology useful when they perceive it as easy to use. However, Aladwani (2002) argue that the relationship is contradictory. And as observed by Lim and Ting (2012) the works of Gefen and Straub (1997); Jantan, Ramayah, and Chin (2001) and Shyu and Huang, (2011) produced mixed results.

While the stream of research on the social context antecedent effects on perceived usefulness and ease of use continue to evolve there is enough empirical support that since the early times of Davis' TAM and its two constructs of perceived usefulness and ease of use, and the assertion that perceived ease of use can explain the variance in perceived usefulness, numerous researchers have discovered that technology acceptance theory yields consistently high explained variance for why users choose to utilize systems (Pavri, 1988; Thompson, Higgins, & Howell, 1994; Mathieson, 1991; Adams, Nelson, & Todd, 1992).

Review of the empirical literature reveals that results of studies on the role of perceived ease of use in technology acceptance model (TAM) have been mixed. Such studies as Moore and Benbassat (1991), Thompson *et al.*, (1991), Venkatesh and Davis (1994), Chin and Gopal (1995), Gefen (1999), Rose and Straub (1999) and Venkatesh (1999) have reported that perceived ease of use does directly affect self-reported use or intention to use. In a recent study, Saade and Bahli (2004) employing a sample population that comprised 102 undergraduate students of Concordia University in Montreal, Canada and using a partial-least-squares structural modelling approach to evaluate the adoption factors of Internet-based learning systems found among others that PEU significantly affected students' intentions to use the technology (path=0.16,  $P < 0.05$ ) while accounting for 26% variance in intentions.

However, contrary to the above, other studies such as Davis (1989), Mathieson (1991) Adams, Nelson and Todd (1992), Subramanian (1994), Prekumar and Potter (1995), Keil, Beranek and Konsynski (1995), Gefen and Straub (1997) and Karahanna and Straub (1999) did not find such direct effects. In line with this, Lin and Chou, (2009) in their study investigated ways in which end-users perceived citation database interfaces, especially citation database interfaces' usability. This study employed TAM's constructs of perceived usefulness and perceived ease of use to assess University graduate students' acceptance of

citation database interfaces using structural equation modelling. The result of this study shows that perceived usefulness, and not ease of use of citation database interface, is a key determinant of their acceptance and usage.

In a more recent study, Teo and Zhou (2014) employing structural equation modelling to analyse data generated from 314 university students examined the factors that influence higher education students' intention to use technology. This study reported that perceived usefulness and attitude toward computer use were significant determinants of the intention to use technology, while perceived ease of use influenced intention to use technology through attitude towards computer use.

In an effort to explain these contradictory roles of PE in TAM, Gefen and Straub (2000) in an earlier study argued that the changing role of perceived ease of use depends on the nature of the task. They posited that PE assesses the intrinsic characteristics of IT such as ease of use, ease of learning, flexibility and clarity of the IT's interface, while PU assesses IT's extrinsic task-oriented outcomes such as task efficiency and task effectiveness. As such, they argued that PE directly affects IT adoption when the primary task involved is intrinsic and indirect if the primary task is extrinsic. To empirically verify and validate this proposition, the authors using a free simulation experimental method generated data from 217 MBA students in an e-shopping context where a typical online shopper can apply the Internet to either *inquire* about products and services (intrinsic task) or to *purchase* them (extrinsic task). Data analysis was done through linear regression and results show that both PE and PU significantly affected intended use for inquiry while only PU affected intended use for purchase. Also, while PEOU significantly affects PU there was no significant effect of PE on intended use for purchase.

These mixed results reported on the role of perceived ease of use in technology acceptance literature is characteristics of an evolving stream of research which evidently requires more elaboration to properly understand and situate the true role of PE in TAM. This present study is intended to fill this gap.

Results from past studies have largely pointed to the influencing role of perceived risk on the acceptance of online shopping. Generally, perceived risk studies such as Kimery and McCord (2002), Heijden, Verhagen and Creemers (2003), Antony, Lin and Xu (2006), Crespo, Bosque and Sanchez (2009) found a significantly negative impact on intention and actual online purchasing behaviour. In an isolated case though, Ahn, Lee and Park (2001) in a comparative study of the role of perceived risk on online shopping acceptance of US and Korea consumers the authors found that both Perceived transactional risk and perceived product risk, have strong direct effects on the adoption of e-commerce in the US while the result from the Korean dataset showed no significant effects of both constructs on the adoption.

Empirical literature shows that perceived risk has majorly been modelled as an antecedent of perceived usefulness, perceived ease of use and intention (see Jarvenpaa *et al.*, 1999; Lee, Park, & Ahn, 2001; Wu & Wang, 2005). Recently, however, Im, Kim and Han (2008) have begun to investigate other roles of perceived risk in the technology acceptance model. In their study titled “The effects of perceived risk and technology type on users’ acceptance of technologies” the authors argue that when PR is modelled as an antecedent of PU, it is assumed that PU and PR are related. They posit that these constructs are independent of one another and therefore, proposed that PR would modify the effects of PU and PE on BI.

To validate the above proposition, the authors, in an experimental study that involved 161 university students and using structural equation modeling (SEM) investigated whether perceived risk moderated the effects of PU and PE on intention to use communication technologies. This study found that: (a). PR moderates the effects of PU on intention; for users with a higher perception of risk in using the technology, PU had smaller effects on BI than those with lower perception of risk. (b). PR moderated the relationship between PE and intention, but unlike in the PU result, PE was found to have a bigger effect on BI for the high perceived risk group than for the low perceived risk group; and (c). Users' intention to use technology was better explained when PR was modelled as a moderating variable.

The study by Im *et al*, (2008) was carried out in the domain of communication technology; however, this thesis purposes to extend their postulation to the domain of e-shopping but this time perceived risk will be modelled as a mediator. The justification for this new approach stem from the fact that past empirical studies in e-commerce have always reported PU and PE as having both positive and significant relationships with users' intention to engage in online purchases (see Gefen & Straub, 2000). Since perceived risk has an inverse relationship with intention, this researcher argues that the size of the relationship between PU and PE and intention will be reduced by the introduction of PR to the relationship. If this is the case then PR should be a mediator since mediation occurs when the strength of the relationship between a predictor variable and criterion variable is depreciated as a result of inclusion of another predictor variable (Baron & Kenny, 1986; Field, 2013). On the other hand, moderatorvariables are typically introduced when there is an unexpectedly weak or inconsistent relation between a predictor and a criterion variable (Baron & Kenny, 1986). Given this scenario therefore, the present study tests perceived risk as a mediator of the relationship between PU and PE and Intention to engage in online shopping.

## **2.5 Summary of the Chapter**

This chapter kicked off with a treatise on Davis (1989) Technology Acceptance Model (TAM) after which the theoretical framework was presented. Under theoretical framework, the three theories that underpinned this work, which are- theory of reasoned action, theory of planned behaviour and theory of diffusion of innovation and their relevance to the study, were discussed. Next to be discussed, is the conceptual framework, which is an extension of the parsimonious technology acceptance model (TAM) and which also, guided review of literature as it shows both the predictor and the criterion variables and the direction of the relationships that exist between them. Subsequently, review of previous empirical studies was done with exposition of gaps in these studies and the place of current study in the literature. The identified gaps in empirical literature manifested both in the inconsistent results of past studies and the fact that majority of these studies are non-African in context. Thus, highlighting the contextual necessity and the imperativeness of the present study.



## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.0 Preamble**

The objective of this chapter is to provide insight into the process and methods employed in gathering data for the purpose of answering the research questions, testing stated hypotheses and achieving the research objectives earlier outlined. In this chapter, the blueprint used in carrying out this study including the method of analysis and presentation are discussed.

#### **3.1 Research Design**

A research design is a structured plan, designed with the intention of empirically gathering information for the purpose of achieving research objectives, answering research questions and testing hypotheses. It clearly identifies the type of study, its peculiarities, and requirements, and structures a means for valid data collection, collation, and analysis. Hence, Asika (2004) describes research design as a blueprint for information gathering.

In conducting this study, a descriptive research design based on cross-sectional survey was adopted as the variables under investigation are purely descriptive. Other advantages associated with survey research design in literature, which necessitated its adoption in this study include, its ability to deal more directly with the nature of respondents' thoughts, opinions and feelings (Shaughnessy & Zechmeister, 1997) and collection of information on belief, attitudes and motives (Burns, 2000). Yin (1994) posits that survey method is an effective tool to use when the researcher has little control over behaviour of study subjects. This design also provides accurate means of assessing information about the sample and enables the investigator to draw conclusions about generalizing the findings of the study (Chisnall, 1992; Creswell, 1994). Ultimately, survey design is quick, inexpensive, efficient,

and can be administered to a large sample (McClland, 1994; Churchill, 1995; Sekaran, 2000; Zikmund, 2003; Hair, Bush & Ortinau, 2003).

### **3.2 Study Population**

In research, a population can be defined as the total set of cases that the researcher wishes to study. These cases as identified by Kent (2007) are the entities whose characteristics are of interest to the researcher and therefore can be “empirical or legal units, theoretical constructs, statistical artefacts or simply the objects, persons, survey respondents, groups of people, organizations, situations or events that are the focus of the researcher’s attention.” By implication, this means that the population of a study involves all the persons who can provide information relevant to that study.

Taking this into consideration, the population for this study is comprised of tertiary students in Lagos state. The justification for using tertiary students in Lagos state for such a study is hinged on the fact that tertiary students in Lagos are likely to be representative of all tribes and ethnic groupings of Nigeria because as observed by Oghojafor and Nwagwu (2013), Lagos is the former capital city of Nigeria and a converging point for all the tribes and ethnic groups that make up the six geopolitical zones of the country.

The choice of tertiary institutions in Lagos for this study is further justified by the huge attraction these institutions enjoy from people of all walks of life who are in need of tertiary education from the six geopolitical zones of Nigeria; for example, University of Lagos, is known to enjoy the highest number of Unified Tertiary Matriculation Examination (UTME) applications from candidates seeking entrance into Nigerian universities. Again, these institutions’ location in Lagos, a commercial hub of the country, which is eminently wired up with the requisite ICT infrastructure necessary for e-commerce in general and e-shopping in

particular, makes them ideal for a study of this nature as the lack of enabling infrastructure would not constitute a hindrance to potential online shoppers.

Also, in consideration of the fact that e-shopping is not a favourable past time of illiterates and to ensure full inclusion of subjects with relevant characteristics, the study subjects are drawn from both full-time and part-time students engaged in either undergraduate and post graduate studies in Universities; national diploma (ND) and higher national diploma (HND) in Polytechnics; technical teachers' certificate (TTC) and national certificate in education (NCE) programmes in Colleges of Education. The representative institutions used in this study which was drawn from the three categories of tertiary institutions in Lagos include University of Lagos, Lagos State Polytechnic and Federal College of Education (Technical).

It is equally important to note that past studies in e-commerce such as Klopffing and McKinney (2004) employed student samples. Undoubtedly, also, the biographic characteristics of both the part-time and full-time students of these tertiary institutions are similar to many of Lagos residents particularly in the area of age distribution, educational attainment, gender and income distribution and therefore justifies their adoption as subjects for a study in the area of e-commerce in Nigeria.

### **3.3 Sampling Procedure**

In conducting research, it is often impossible to collect or to analyse all the data available for a study owing to restrictions of time, money and access, hence, the need for sampling. Sampling techniques offer a choice of methods that enable the reduction of the amount of data needed to be collected from the elements of the population frame (Saunders, Lewis & Thornhill, 2007) and are determined before to data collection (Kothari & Garg, 2014).

As literature shows, there are two broad methods of determining the constituents of a research sample: probability and non-probability methods. The choice of which of these two methods to use depends on the need for representativeness and element selection technique (Cooper & Schindler, 2008). Other influences on sampling design decisions for a study include: the objectives of the study, the research questions to be addressed, nature of data, the kind of study being conducted and the need for generalisability (Saunders *et al.*, 2007; Kothari & Garg, 2014).

For example, in Internet studies, Cooper and Schindler (2011) observe that early Internet samples had all the drawbacks of non-probability samples as most subjects who were used for such studies were not representative of most targets because then far younger, technically savvy men frequented the Internet than did any other socio-demographic group. Recently, and as Internet use spreads and gender discrepancies shrink many such samples now closely approximate non-Internet samples.

In recognition of the foregoing, multi-stage sampling technique involving stratified, simple and systematic random sampling designs, is adopted for the present study. The choice of this basket of probability designs is justified by the heterogeneous nature of the tertiary institutions/population of interest which manifests diverse socio-demographic configuration and the need to ensure representativeness of the sample. Though, normally applied to remedy problems associated with geographically dispersed population especially when face-to-face contact is required, Saunders *et al.*, (2007) posit that multi-stage sampling can equally be adopted for any discrete groups that are not geographically dispersed. For this study five phase sampling procedure is involved.

The first stage in the application of this sampling design involves stratification of the twenty tertiary institutions in Lagos as obtained from JAMB 2015/2016 e-brochure (see Appendix A) into three categories using the type of tertiary institution as a grouping/stratifying variable. On this basis, these institutions of higher learning were grouped into Universities, Polytechnics and Colleges of Education. There are five institutions categorised as University, seven as Polytechnic and eight as College of Education. Stratification of these institutions in this manner implies that participants are polled first by the type of tertiary institution prior to consideration of the type of study.

Balloting, a variant of a simple random sampling technique is used to select one institution from each category to participate in the study. Thus, three tertiary institutions namely, University of Lagos, Akoka; Lagos state Polytechnic, Ikorodu and Federal College of Education (Technical), Akoka, are selected to represent these categories; this is done at the second stage.

In the third stage, faculty of business administration of University of Lagos, Lagos State Polytechnic's school of engineering and Federal College of Education's schools of science and vocational education are selected from the different faculties and schools of the three selected tertiary institutions through a simple random technique to generate the sampling frame for full-time students. Also, while schools of environmental and business studies of Lagos state Polytechnic and schools of technology and business education of Federal College of Education were randomly selected to generate part-time students for the study, students of Distance Learning Institute (DLI) of University of Lagos are included in the study being the only part-time undergraduate institute of the university.

At the fourth stage of sampling, stratified random sampling design is again employed in selecting programmes from the selected schools and faculty of the participating tertiary institutions with type of study as a stratifying variable. Type of study here goes beyond whether a student is engaged in full-time or part-time study to include in the case of University whether the programme is postgraduate or undergraduate; for Polytechnic whether the programme is higher national diploma (HND) or national diploma (ND) and for Federal College of Education whether the programme is national certificate of education (NCE) or technical teachers' certificate (TTC).

The justification for the adoption of stratified random sampling design at this stage is because it enables the splitting of populations into several strata that are individually more homogeneous than the total population (Kothari & Garg, 2014). This process in turn results in more reliable and detailed information. Other advantages ascribed to stratified random sampling by Cooper and Schindler (2011) are: increment in a sample's statistical efficiency, provision of adequate data for analysing the various strata and to permit different research methods to be used in the different strata.

The fifth and final stage involves the drawing of individual participants using systematic sampling technique. According to Saunders *et al.*, (2007), this sampling design draws individual samples at regular intervals from the sampling frame. The regularity of this interval is obtained through the calculation of skip interval. The skip interval is obtained by dividing the sample size into the population size (Cooper & Schindler, 2011). As shown in Table 3.2, the sample size for this study is 1577 while the population size is 7646, thus, the skip interval is given by 7646 divided by 1577. The outcome of this division is 4.85 which is approximated to 5. The biases of periodicity and monotonic trend usually associated with systematic sampling design are remedied by random sitting of respondents and the several

random starts observed at the points of administration of the instrument (Saunders *et al.*, 2007; Cooper & Schindler, 2008).

### **3.4 Sample Size**

Sampling ensures that respondents selected for a study are as representative of the population as possible to produce a miniature cross-section. This need for representativeness further creates a challenge of sample size adequacy and as Kothari and Gary (2014) note, deciding the number of elements to be included in a sample of a study presents a big problem for the researcher. To overcome the challenge of sample size, they suggest that sample sizes should neither be excessively large nor too small, but optimum, so as to fulfill the requirements of efficiency, representativeness, reliability and flexibility.

In addition to the above, Cooper and Schindler (2011) observe that sample size selection is guided by such factors as the dispersion or variance within the population of study, the desired precision of the estimate, the error range, the confidence level of the estimate and the number of subgroups of interest in the population. Finally, Saunders *et al.*, (2007) note that given the competing influences in sample size selection, the final sample size employed for a study is almost always a matter of the researcher's judgment as well as calculation.

These issues raised above provide the fulcrum upon which the sample size of this study is determined. As mentioned in the sampling procedure section, a multi-stage sampling design with a conglomeration of probability sampling techniques (such as stratified, simple and systematic designs) at different stages/phases of sampling is adopted. The application of this sampling method on the list of tertiary institutions retrieved from JAMB's e-brochure and lists of student enrolments supplied by the sampled institutions yields the sampling frame for this study as presented in Table 3.1:

**Table 3.1: Sample frame**

No	Institution	Programme	No of students enrolled
1.	University of Lagos	2014/2015 full-time postgraduate students drawn from MSc, MBA and Ph.D. students of faculty of business administration	400
		2014/2015 part-time postgraduate students populated by MSc and MBA students of faculty of business administration	1477
		<b>Total postgraduate</b>	<b>1877</b>
		2014/2015 full-time undergraduate drawn from fourth- year students of faculty of business administration including carryover students	1000
		2014/2015 part-time undergraduate populated by fourth- year degree students of distance learning institute (DLI) of all specializations.	2143
		<b>Total undergraduate</b>	<b>3143</b>
2.	Lagos State Polytechnic	2014/2015 full- time HND students drawn from final- year students of engineering	216
		2014/2015 part- time HND students drawn from second- year students of environmental sciences	51
		<b>Total HND students</b>	<b>267</b>
		2014/2015 full- time ND students populated by final-year students of engineering	376
		Part- time ND students populated by final- year students of management and business studies(2014/2015 session)	1109
		<b>Total ND students</b>	<b>1485</b>
3.	Federal College of Education (Technical)	2014/2015 full- time NCE students populated by final-year students of science education	266
		2014/2015 part- time NCE students represented by second- year students of technical education	121
		<b>Total NCE students</b>	<b>387</b>
		2014/2015 full- time technical teachers' certificate students drawn from first- year vocational education	79
		2014/2015 part- time technical teachers' certificate students drawn from first- year business education	408
		<b>Total TTC students</b>	<b>487</b>

Source: Unilag, Laspotec, FedTech



### Selection of Sample Size

The sample size of this study is generated by applying the random sampling method proposed by Yamane (1967) on each stratum of the sampling frame shown above. The Yamane (1967) sample size determination approach is a quantitative method which is expressed as:

$$n = \frac{N}{1+N(e)^2}$$

Where **n** is the sample size, **N** is the number of the target population (generated from the sampling frame) and **e** is the maximum acceptable error margin. The maximum error margin for this study is five per cent. The result of the calculated sample size is presented below:

**Table 3.2: Calculated sample size**

Institution/Level	No of students per institution/programme	Calculated sample size per institution
University of Lagos undergraduate	3143	355
University of Lagos postgraduate	1877	330
Lagos state polytechnic HND	267	160
Lagos state polytechnic ND	1485	315
Federal college of education (technical) NCE	387	197
Federal college of education (technical) TTC	487	220
Total	<b>7646</b>	<b>1577</b>

Source: Unilag, Laspotec, FedTech

As shown in Table 3.2, the calculated sample size is 1577. This sample is about twenty-one percent of the population captured in the sample frame and is considered adequate given the recommendation of Dillman (2000) which asserts that a sample size of one hundred and above is representative enough and adequate to achieve acceptable research findings.

### 3.5 Data and Collection Instrument

In research, there are two types of data. They are secondary and primary data. According to Kothari and Garg (2014), while secondary data are those that have previously been collected and which have already gone through a statistical process, its primary counterpart are data which are original as they are collected afresh and for the first time. Primary data can be

gathered in a variety of ways and from different sources such as personal interviews, telephone interview, self-administered questionnaires, etc (Shammout, 2007). Primary data is used for this study.

A questionnaire, according to Asika (2004), is a set of specific questions which are constructed and used to elicit information from respondents. On the self-administered type, Hair *et al.*, (2003), describes it as “a data collection technique in which the respondent reads the survey questions and records his or her own responses without the presence of a trained interviewer.” Though the questionnaire enjoys wide usage as a data collection technique within the survey research strategy (Saunders *et al.*, 2007), however, the self-administered variant has been noted to present a challenge to which they rely on the clarity of the written word more than on the skill of interviewers (Zikmund, 2003). Added to this, is the chance of supplying a contaminated data as some respondents may decide to discuss their answers with others. When this happens, the response is biased. To overcome these sorts of problems the questions in the instrument are worded in a simplified way with less technical jargons. Also, moral suasion is used to implore respondents to give their independent opinions.

In spite of the shortcomings highlighted above, the self-administered questionnaire has lent itself to popular usage due to the numerous advantages ascribed to it and for which it is adopted for this present study. Some of the advantages credited to this type of questionnaire include: 1). Minimal interviewer bias as answers to the questions are in respondents' words; 2). Respondents are relatively unlikely to answer to please the researcher; 3). Respondents can give well-thought answers to questions as they have adequate time; 4). Low cost especially when sample is large and widely spread geographically, and 5). When a large population is involved, as in the case of the present, a self-administered questionnaire can relatively be administered quickly and economically.

The questionnaire employed for this study (see Appendix B) has three sections. In the first section, questions to cover the constructs of interest such as innovativeness, perceived risk, perceived usefulness, perceived ease of use and intention to use, are presented. The second section covered questions bothering on product type and lastly, in section three, questions on respondents' biographic details are asked.

### **3.6 Measurement and Scale Development**

The key constructs for this study are socio-demographics, product type, perceived risk, innovativeness, perceived usefulness, perceived ease of use, and intention to shop

**Socio-demographics:** Socio-demographics as a construct is measured through gender, age, level of education attainment and annual income of respondents. In fact, annual income of respondents (outside those earned from employment) is taken to include pocket money and cash gifts for respondents who are not working.

**Product Type:** As discussed in chapter two, the present study borrows from the school of thought that classifies products for online shopping based on information asymmetry. This school of thought has classified products into search, experiential and credence products.

In order to select products for each category, a product classification study is conducted whereby a list of 52 products (see Appendix C) is presented to two groups of respondents. The list also contains the description of each of the product categories. Respondents are required to group the products using the description as a guide. The first group comprises twenty-two students who have similar characteristics with those who participated in the main study, while the second group is made up of eight lecturers in the department of business administration of the University of Lagos, who acted as experts and whose product grouping forms the benchmark for the classification of products by the student respondents.

The description of each product type which is derived from literature of Girard, Silverblatt and Korgaonkar (2006), and Ladipo, (2007) is presented below:

The first description is for search products: “For this product, I can always get relevant and adequate information about it before I buy or use it. With the obtained information I can evaluate the product before purchase. Hence, I am confident, I can buy this product even when I have not used or tried it before.”

The next description as contained in the list is for experiential goods: “For this product, I can only evaluate it properly after use. Therefore, I will not have the confidence to buy this product unless I have used or tried it before.”

The third and final product category described in the list is credence products: “It is not easy for me to evaluate this product even after use. When I buy it, I am not always confident of my purchase, because I need help to know whether the product is good or not.”

## Descriptive Statistics of Participants for the Stage one (product Classification) Study

Table 3.3 Bio data of Student Respondents

Response Variables		code	Frequency	Percentage
Gender	Male	1	9	40.9
	Female	2	13	59.1
	Total		22	100.0
Annual Income No earnings yet	#500,000 and below	1	6	27.3
	#500,001-#1,000,000	2	10	45.5
	#1,000,001 and above	3	1	4.5
		4	5	22.7
	Total		22	100.0
Type of Programme	Full-time undergraduate	1	4	18.2
	Part-time Undergraduate	2	14	63.6
	Full-time Postgraduate	3	1	4.6
	Part-time Postgraduate	4	3	13.6
	Total		22	100.0
Age	25yrs & below	1	1	4.6
	26 – 40 yrs	2	18	81.8
	41 - 55 yrs	3	3	13.6
	Total		22	100.0
Occupation	Civil servant	1	3	13.6
	Self- employed	2	9	40.9
	Not employed	3	1	4.5
	Private company employee	4	9	40.9
	Total		22	100.0

Source: field study, 2016

The bio-data of students who participated in this stage one (product classification) study (see Table 3.3) shows that twenty-two of them are drawn from the four programme types offered by University of Lagos. Also, about sixty percent of these participants are females and as the income distribution shows about half of the participants earns income ranging from five hundred and one thousand to over a million naira per annum while the rest half either earn nothing or earn between five hundred thousand and below in a year.

**Table 3.4: Bio data of Lecturer Respondents**

Response Variables		Code	Frequency	Percentage
Gender	Male	1	5	62.5
	Female	2	3	37.5
	Total		8	100.0
Employment Cadre	Senior Lecturer	3	1	12.5
	Lecturer 1	4	1	12.5
	Lecturer 2	5	3	37.5
	Assistant Lecturer	6	3	37.5
	Total		8	100.0

Source: Field study, 2016

As shown in Table 3.4, a total of eight lecturers participated in this study. Close to two-third of them are female lecturers and the employment description of these lecturers shows that twenty-five percent of them are either lecturer one or senior lecturer while the remaining seventy-five percent occupies the position of assistant lecturer and lecturer two respectively.

## RESULTS

Table 3.5: Students classification of products

Product Type	No	Percentage
Search	42	80.8
Experiential	6	11.5
Credence	1	1.9
Search/Experiential	3	5.8
Total	52	100

Source: Field study, 2016

As depicted in Table 3.5, students who are used for this study classified forty-two products which accounts for over eighty percent of the listed products as search; six products are classified as experiential, one as credence while three which represents about six percent of the listed products overlapped as both search/experiential products.

**Table 3.6: Classification of products by lecturers**

<b>Product Type</b>	<b>No</b>	<b>Percentage</b>
Search	23	44.2
Experiential	22	42.3
Credence	2	3.9
Search/Experiential	1	1.9
Search/Credence	1	1.9
Experiential/Credence	1	1.9
Search/Experiential/Credence	2	3.9
Total	52	100.0

Source: Field study, 2016

The bulk of the listed products are grouped by the lecturers as either search or experiential products. As shown in table 3.6, while twenty-three products representing about forty-four percent are classified as search, twenty-two products accounting for about forty-two percent are grouped as experiential products. Two of the products representing about four percent of the entire list are grouped as credence products. Finally, close to the remaining ten percent of the products overlapped as shown in the table.

### **Selection Criteria**

In selecting the two products that represented each product category, the criteria adopted is to select the products that has agreement on classification and the highest joint score on both the students and the lecturers rating. Where this is not possible, the products that are grouped as the same are now brought together and compared, and the ones with the highest rating are selected.

## Selected Products

Table 3.7: Selected products for each product type

PRODUCT CLASS/TYPE	SELECTED PRODUCTS	STUDENTS' RATING (%)	LECTURERS' RATING (%)	AGREEMENT ON CLASSIFICATION	JOINT RATING SCORE (%)
SEARCH	BOOKS	68.2	62.5	YES	65.35
	WRISTWATCHES	63.6	87.5	YES	75.55
EXPERIENTIAL	BEER	40.9	62.5	YES	51.7
	PERFUMES	36.4	37.5	YES	36.95
CREDENCE	CLOTHES	NA	37.5	NO	NA
	COMPUTER SOFTWARE	27.3	NA	NO	NA

Source: Field study, 2016

Following the selection criteria and as shown in Table 3.7 above, books and wrist watches are selected as search products. These two products are so selected because there is agreement between students and lecturers that these products possess search properties. Also, these two products enjoy the highest joint scores of sixty-five point three five percent (65.35%) and seventy-five point five-five percent (75.55%) respectively. Using similar criteria also, beer and perfumes are jointly agreed by respondents as possessing experiential properties. Under experiential products, beer and perfumes garners the highest joint scores of fifty-one point seven percent (51.7%) and thirty-six point nine-five percent (36.95%) respectively. On credence products, there is no agreement between the lecturers and the students on products that possess this property. While lecturers chose clothes and bed-sheets as possessing credence properties, students chose only computer software. Using the decision criterion when there is no agreement between the two groups of respondents, these three products are compared and the two that have the individual highest scores are clothes with score of thirty-



seven point five percent (37.5%) and computer software with score of twenty-seven point three percent (27.3%). These two products are subsequently selected as credence products.

Finally, after selecting the six products that represent the three product classes/types, they are included in the study instrument. Using a seven-point Likert scale with end points of “will certainly buy” and “will not buy”, the respondents are asked to indicate their willingness to purchase these products from an online retailer. To measure the overall intention of respondents to purchase a product type online, Girard *et al.*, (2006) approach is adopted whereby the average score of the preference responses of participants to the two products in each of the three categories is used as the score for each of the product categories. For example, a respondent’s preference scores on books and wrist watches are added and divided by two to arrive at the respondent’s preference score for search good.

### **Perceived Risk**

To measure the construct of perceived risk for this study, a twelve-item scale covering all the dimensions of perceived risk identified in e-commerce literature is used. This scale is an adaptation of the perceived risk scale developed by Featherman and Pavlou (2003). The dimensions covered by this scale include time risk, psychological risk, privacy risk, financial risk, performance risk, social risk and overall risk. A mean of the responses to the twelve items provides the perceived risk score and based on a seven-point Likert scale, a high mean score indicates high perception of risk.

### **Innovativeness**

The innovativeness construct scale for this study is adapted from Citrin *et al.*, (2000). It is a six item domain specific scale measuring innovativeness in the area of Internet shopping. The original scale has a reported reliability of 0.85. Using a seven-point Likert scale, the questions are coded so that a high score reflects higher levels of innovativeness. A mean of

the responses to the six items provides a domain-specific innovativeness score. As is done in the original scale, some of the items in this adapted scale are reverse scored. Given the high rate of reliability reported for Citrin *et al.*, (2000) scale, it is found worthy to be adapted for the present study.

### **Perceived Usefulness**

A six item construct, the perceived usefulness scale is an adaptation from Klopping and McKinney (2004) and Lim and Ting (2012). The reported reliabilities for these studies are 0.88 and 0.959 respectively. Three items each are adapted from these two studies to form this present scale. The six items measure the construct of perceived usefulness by requesting respondents to agree or disagree with statements using a seven-point Likert scale with two end points of “strongly agree” and “strongly disagree.” As with the other scales of this study, a high mean score on this scale is indicative of a high perceived usefulness.

### **Perceived Ease of Use**

The perceived ease of use construct scale is also adapted from Klopping and McKinney (2004) and Lim and Ting (2012). It is an eight item scale. Three items are adapted from Klopping and McKinney (2004) while the remaining five items are taken from Lim and Ting (2012). Each of the adapted scales reports high reliability scores of 0.85 and 0.960 respectively. Three of the eight items are reverse scored. Using a seven-point Likert scale, the questions are coded so that a high score shows higher levels of perceived ease of use. Thus, a mean of the responses to the eight items provides a perceived ease of use score.

### **E-Shopping Acceptance**

Finally, as stated in chapter two, this thesis employed adoption intention as a measure of acceptance of online shopping. To measure the construct of e-shopping acceptance for this

study, therefore, an eight-item scale covering the two dimensions of adoption intention identified in e-shopping literature is used. The two dimensions covered are product information search and product purchase.

This scale is adapted from Kloppong and McKinney (2004) and Lim and Ting (2012). Three items are taken from Kloppong and McKinney (2004) and five items from Lim and Ting (2012). Each of these scales has a reported reliability score of 0.90 and 0.954 respectively. All the eight questions for this scale are based on a seven-point Likert scale and like the other scales for this study; a high mean score indicates high e-shopping acceptance.

### **Scaling of Responses**

As stated in data and collection instrument section, the questionnaire employed for this study is divided into three sections with the last section eliciting respondents' biographic information and thus is constructed with categorical scales. On the other hand, the preceding sections which elicit information bothering on the other constructs of the study are built with interval scales.

In designing rating scales, Streiner, Norman and Cainery (2015), posit that the issue of the number of steps to be included in the scaling of responses is one of the issues to be considered in order to minimize bias and to boost precision. In agreement with this point of view, Knauper and Turner (2003) found among others, that when respondents attend to questionnaire items they are equally influenced by the format of the scale itself, hence, Streiner *et al.*, (2015) aver that "the choice of the number of steps or boxes on a scale is not primarily an aesthetic issue", as this could lead to information loss particularly, when the number of levels (points) is lower than the respondent's ability to differentiate.

Consequently, Streiner *et al.*, (2015) conclude that for continuous (interval and ratio) scales, the issue of the number of steps (points) on the scale affects its reliability. They argue that while a two-point and a five-point scale reduces reliability by about 35 percent and 12 percent respectively, the loss in reliability for a seven-point and a ten-point scale is quite small, thus, suggesting that a seven-point scale, which was adopted for this study, is more reliable than a five-point scale.

### **3.7 Instrument Validation**

To assess the fitness of the questionnaire for data collection, it is subjected to reliability and validity test through the use of pilot study. However, two critical issues of concern in carrying out a pilot study according to Hunt, Sparkman and Wilcox (1982) bother on “who should be the subjects in the pre-test?” and “how large a sample is needed for the pre-test?”

On the issue of the subjects to be selected for pre-testing, this study was guided by the recommendations of Tull and Hawkins (1990) and Churchill (1995) that participants for a pilot study should be similar to those to be used in the actual study. Hence, both undergraduate and postgraduate students who enrolled in the full time and part-time programmes of University of Lagos are used as respondents for this pilot study.

In the choice of the number of respondents for a pilot study, Zatalman and Burger (1975) are not specific but recommend a ‘small’ sample. Other writers like Boyed, Westfall and Stasch (1977) suggest that a sample of 20 is adequate. Luckas, Hair and Ortinau (2004) point out a size of 50 respondents allows the running of proper statistical testing procedures, while Cooper and Schneider (2011) suggest sample size of between twenty-five (25) and one hundred (100) respondents. This clearly shows lack of consensus by writers (Hunt *et al.*, 1982). However, this present study aligns with the suggestion of Luckas *et al.*, (2004). As a

result, fifty copies of the questionnaire are distributed across respondents who bear similar characteristics with respondents that participated in the study.

Prior to the reliability test however, the instrument is first subjected to a validity test to ascertain its capability to correctly measure the constructs. Content validity test is adopted to validate the instrument. To carryout content validity, Cooper and Schneider (2011) suggest that existing scales in literature be identified and expert opinion sought. These suggestions are adhered to in generating the scales employed for this study as most of the scales are adaptations of other scales from literature. The items in these scales are further scrutinized by lecturers in the Department of Business Administration of the University of Lagos who are experts in this area of study. After improving on the lucidity and precision of the questionnaire items based on the suggestions made by these experts, the research instrument is found adequate to capture the study's constructs.

In addition to the above, the instrument is tested for its consistency in measuring the various scales. Thus, the resulting data from the pilot study are analysed using Cronbach's alpha coefficient reliability test. The resulting outputs are shown in Table 3.8:

**Table 3.8: Scale Reliability: Descriptive statistics and Cronbach Alpha**

Scale	No of items	Mean	Standard Deviation(SD)	Mean Inter-item correlation	Coefficient Alpha ( $\alpha$ )
Innovativeness	6	4.053	1.322	0.309	0.733
Perceived Risk	12	3.920	1.080	0.320	0.848
Perceived Usefulness	6	5.337	0.994	0.363	0.771
Perceived ease of use	8	5.068	1.179	0.342	0.801
Intention to use	8	5.440	1.017	0.589	0.919

Source: Field study, 2016.

As shown in Table 3.8, the scales of this study with less than ten items include innovativeness, perceived usefulness, perceived ease of use and intention to use. All these short scales achieved optimal levels of mean inter-item correlations of 0.2 to 0.4 as suggested

by Briggs and Cheek (1986). In fact the mean inter-item correlation returned by Intention-to-use scale (0.589) is higher than this recommended range. These results suggest that there is strong relationship between these items which is a good measure of internal consistency of the scales. Also, all constructs returned an acceptable Cronbach's coefficient alpha well over the bench mark of 0.7 as suggested by Nunally (1978) and DeVellis (2012). These results strongly reflect the ability of the items to robustly capture the underlying constructs of these various scales and without redundancy (Kent, 2007). On the strength of these parameters the validity and reliability of the questionnaire are established.

### **3.8 Statistical Tools:**

Several parametric statistical tools are used to analyse the hypotheses tested in this study. These statistical tools include independent sample t-test, paired sample t-test, one-way analysis of variance (ANOVA), multiple regression, Logistic regression and mediation which is a regression based model.

### **3.9 Effect Size Estimation Models**

An effect size is an objective and standardized measure of the magnitude of an observed effect. Field (2013) posits that with effect sizes the results of different studies can be compared. For this study, four effect size estimate models are employed. They are Cohen's d, Omega squared, correlation coefficient and Kappa-squared.

### **3.10 Summary of the Chapter**

In this chapter, the research methods adopted in order to achieve the objectives of this study were presented and discussed. The study employed a descriptive research design based on cross-sectional survey. Tertiary students in Lagos state who are engaged in either full-time or part-time programmes of their various institutions were used as the population for this study.

Five-phase multi-stage sampling strategy was adopted as the technique for sampling. Also, as presented in the chapter, sample size for the study was determined through a quantitative approach using Yamane (1967) method, while a structured questionnaire which was validated by the means of validity & reliability tests was used in gathering data. Other areas covered include issues bothering on scale and measurement development, statistical tools and effect size estimation models.

## CHAPTER FOUR

### DATA PRESENTATION AND ANALYSES

#### 4.0 Preamble

The focus of this chapter is the presentation, analyses of data and the interpretation of the results of the analyses. These data are analysed with the statistical tools and methods explained in chapter three. In order to achieve the stated objectives of this study, the data presentation is guided by the study's research questions and hypotheses. As a result, this presentation is structured in a way that conclusions can be drawn from the tested hypotheses.

The data for this study were generated from one thousand, five hundred and seventy-seven (1577) copies of the research instrument distributed to target respondents. From this number one thousand, one hundred and fifty (1150) copies were successfully retrieved, out of which one thousand one hundred (1100) were found usable after data cleaning and sorting and were subsequently subjected to data analyses, thus, giving a response rate of sixty-nine point seven-five percent (69.75%). Though, response rates for studies using primary data can vary considerably (Saunders *et al.*, 2011), this response rate of close to seventy percent can be considered successful given that Willimack, Nichols and Sudman (2002) had reported the success rate of university-based questionnaire surveys of business to range from 50 to 65 percent.



## 4.2 Profile of Respondents based on Type of Programme

Table 4.1: Type of institution/programme enrolled in by respondents

<b>Response Variables</b>	<b>Full time</b>	<b>Part time</b>	<b>Total respondent/programme</b>	<b>Percent</b>
<b>University of Lagos undergraduate</b>	58	218	276	25.09
<b>University of Lagos postgraduate</b>	80	170	250	22.73
<b>Lagos state polytechnic HND</b>	65	16	81	7.36
<b>Lagos state polytechnic ND</b>	50	185	235	21.36
<b>Federal college of education (technical) NCE</b>	81	37	118	10.73
<b>Federal college of education (technical) TTC</b>	50	90	140	12.73
<b>Total</b>	<b>384(35%)</b>	<b>716(65%)</b>	<b>1100</b>	<b>100%</b>

Source: Field survey, 2016

Table 4.1 presents the profiling of sampled students according to type of tertiary institution and academic programme. Respondents who are pursuing university undergraduate studies make up a quarter of the entire survey while those engaged in postgraduate studies account for about twenty-three percent (23%) of those polled. Also, Table 4.1 shows that respondents studying for higher national diploma (HND) are about seven percent (7%) of respondents while national diploma (ND) students who are polled make up a little over one-fifth of all respondents. Those who are studying for national certificate in education (NCE) constitute about eleven percent (11%) of all the study respondents while close to thirteen percent (13%) of students who participated are studying for technical teachers' certificate (TTC). Table 4.1 also discloses that respondents who are engaged in part-time programmes of the three tertiary institutions make up sixty-five percent (65%) of the entire study while the remaining thirty-five percent (35%) are in full time studies. Given that the sampling frame for this study is constructed using a probability design that confers on all programmes and students equal

chance of being selected as discussed in chapter three, it can thus, be seen that the study enjoys a good spread of participants from the various institutions and programmes.

### 4.3 Profile of Respondents based on Socio-demographics

Table 4.2: socio-demographic profile of respondents

Variables	Age Group						Frequency	Percent (%)
	25 YEARS & BELOW	26 - 30 YEARS	31 - 35 YEARS	36 - 40 YEARS	41-50 YEARS	51 YEARS & ABOVE		
<b>Gender</b>								
Male	159	187	115	76	32	0	569	51.7
Female	223	178	82	29	18	1	531	48.3
<b>TOTAL</b>	<b>382</b>	<b>365</b>	<b>197</b>	<b>105</b>	<b>50</b>	<b>1</b>	<b>1100</b>	<b>100.0</b>
<b>Marital Status</b>								
Single	363	298	95	13	5	0	774	70.4
Married	14	67	100	91	43	1	316	28.7
Separated	3	0	1	1	0	0	5	0.5
Divorced	2	0	1	0	0	0	3	0.3
Widowed	0	0	0	0	2	0	2	0.2
<b>TOTAL</b>	<b>382</b>	<b>365</b>	<b>197</b>	<b>105</b>	<b>50</b>	<b>1</b>	<b>1100</b>	<b>100.0</b>
<b>Educational Qualification</b>								
O'Level	205	83	26	13	6	0	333	30.3
OND/NCE	55	71	29	10	3	0	168	15.3
BSc/Equivalent	103	166	108	56	20	0	453	41.2
PGD/MSC/MBA	11	45	31	24	20	1	132	12.0
Ph.D.	0	0	0	1	0	0	1	0.1
Others	8	0	3	1	1	0	13	1.2
<b>TOTAL</b>	<b>382</b>	<b>365</b>	<b>197</b>	<b>105</b>	<b>50</b>	<b>1</b>	<b>1100</b>	<b>100.0</b>
<b>Annual Income</b>								
#60,000 - #215,999	255	177	60	17	5	0	514	46.7
#216,000 - #500,000	67	73	42	16	4	0	202	18.4
#500,001 - #2,500,000	29	77	57	26	22	0	211	19.2
#2,500,001 - #5,000,000	16	26	21	25	9	1	98	8.9
#5,000,001 - #10,000,000	6	6	15	13	6	0	46	4.2
#10,000,001 & above	9	6	2	8	4	0	29	2.6
<b>TOTAL</b>	<b>382</b>	<b>365</b>	<b>197</b>	<b>105</b>	<b>50</b>	<b>1</b>	<b>1100</b>	<b>100.0</b>
<b>% COLUMN TOTAL FOR AGE</b>	<b>34.7%</b>	<b>33.2%</b>	<b>17.9%</b>	<b>9.5%</b>	<b>4.5%</b>	<b>0.1%</b>		

Source: field study, 2016

Table 4.2 shows the cross-tabulation of respondents' age against such other socio-demographic variables as gender, marital status, educational level and income. As this profiling show, respondents are evenly spread according to gender with male respondents accounting for slightly over fifty-one percent. In their marital standing, respondents who are single accounted for the bulk of all those polled with a little above seventy percent. While married participants come second with a score of about twenty-nine percent. Respondents

who are separated, divorced or widowed altogether accounted for exactly one percent of those surveyed. In terms of their academic standing, Table 4.2 shows that respondents who possess OND/NCE educational qualification or below accounted for about forty-five percent (45%) of those polled. Those who have first degree, postgraduate diploma and masters degree accounted for forty-one point two percent (41.2%) and twelve percent (12%) respectively. Whilst those with Ph.D. certificate accounted for less than one percent, those who possess other qualifications are a little over one percent. In income, participants who earn between #60,000 and #215,999 are about forty-six percent (46%). Respondents whose incomes fall within #216,000 and #500,000, and those within the income bracket of #500,001 and #2,500,000 were eighteen point four percent (18.4%) and nineteen point two percent (19.2%) respectively. Finally, in age grouping, respondents who are twenty-five years and younger, and those within the age of twenty-six and thirty accounted for about one-third of the entire survey respectively. While respondents who fall within the age bracket of thirty-one and thirty-five years are close to eighteen percent, those who are aged between thirty-six and forty years accounted for close to one-tenth of all those polled. Also, while those whose age is above fifty-one accounted for less than one percent, respondents within the age bracket of forty-one and fifty years accounted for the remaining four point five percent (4.5%).

As can be seen from the foregoing, analysis of the socio-demographic characteristics of respondents reflects enough diversity and balance across polled respondents and as such can be said to be suitable to achieve the stated objectives of the study.

#### **4.4 Results of Hypotheses Testing**

**Hypothesis One: Socio-demographic variables of consumers do not significantly affect their e-shopping intention.**

This hypothesis is broken into four sub-hypotheses (H<sub>01a</sub> to H<sub>01d</sub>). **H<sub>01a</sub>** was tested with independent t-test while ANOVA was used for H<sub>01b</sub>, H<sub>01c</sub> and H<sub>01d</sub>. Here are the results:

**H<sub>01a</sub>: Gender does not significantly affect consumers' e-shopping intention.**

Test statistic: H<sub>01a</sub> is tested with independent sample t-test

**Table 4.3a: Group Statistics**

SEX		N	Mean	Std. Deviation	Std. Error Mean
Intention to use	MALE	569	5.6059	.96166	.04031
	FEMALE	531	5.4969	.93728	.04067

Source: Field study, 2016

**Table 4.3b: Independent Samples Test**

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Intention to use	Equal variances assumed	.044	.835	1.901	1098	.058	.10895	.05732	-.00352	.22142
	Equal variances not assumed			1.902	1095.924	.057	.10895	.05727	-.00342	.22132

Source: Field study, 2016

Cohen's d was employed to estimate effect size. Cohen's d is given by:

$\hat{d} = \frac{\bar{X}_m - \bar{X}_f}{S}$  Where  $\hat{d}$  = estimate of effect size,  $\bar{X}_m$  = mean for the male respondents,  $\bar{X}_f$  = mean for the female respondents, and S = standard deviation for male respondents. From Table 4.3a,  $\bar{X}_m = 5.61$ ,  $\bar{X}_f = 5.50$  and  $S = 0.96166$ . When these figures are substituted in the formula, it becomes:

$$\hat{d} = \frac{5.61-5.50}{0.96166} = \frac{0.11}{0.96166} = 0.1143$$

Table 4.3a (group statistics) shows the number of male and female respondents that participated in the study and their mean values, from which it can be seen that the mean score for the male is 5.61 and that of the female is 5.50.

Also, Levene’s test for equality of variances in (Table 4.3b: Independent samples test) returned an insignificant result (F=0.044, p=0.835) which shows that the assumption of equality of variances has not been violated. Thus, the results produced under the row “Equal variances assumed” are selected for making inference for this hypothesis.

Consequently as shown in Tables 4.3a and 4.3b, on average there is not much difference between both male participants (M=5.61, SE=0.04) and female participants (M=5.50, SE=0.04) willingness to engage in online shopping. The difference between their intentions to use e-shopping outlets which is 0.11, 95% CI [-0.003, 0.221], was not significant  $t(1098) = 1.901, p=0.058$ . Using Cohen (1988) benchmark, a  $\hat{d}$  of 0.1143 represents a small-sized effect of gender on e-shopping intention. Hence, hypothesis (H<sub>0</sub>1a) is not rejected and therefore it can be concluded that gender will not significantly affect consumers’ e-shopping acceptance.

**H<sub>0</sub>1b: Age does not significantly affect consumers’ online shopping intention.**

Test statistic: H<sub>0</sub>1b is tested with one-way analysis of variance (ANOVA)

**Table 4.4a: Descriptives**

Intention to use

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
					25 YEARS & BELOW	382		
26 - 30 YEARS	365	5.5637	.87031	.04555	5.4741	5.6533	3.00	7.00
31 -35 YEARS	197	5.7138	.88219	.06285	5.5899	5.8378	1.63	7.00
36 - 40 YEARS	105	5.4738	.91194	.08900	5.2973	5.6503	2.50	7.00
41-50 YEARS	50	5.6575	.90203	.12757	5.4011	5.9139	3.13	7.00
Total	1099	5.5529	.95144	..02870	5.4966	5.6092	1.00	7.00

Source: Field study, 2016

**Table4.4b: Test of Homogeneity of Variances**

Intention to use

Levene Statistic	df1	df2	Sig.
2.667	4	1094	.031

Source: Field study, 2016

**Table4.4c: ANOVA for hypothesis H<sub>0</sub>1b**

Intention to use

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	9.128	4	2.282	2.535	.039
Within Groups	984.814	1094	.900		
Total	993.941	1098			

Source: Field study, 2016

**Table 4.4d: Robust Tests of Equality of Means**

Intention to use

	Statistic <sup>a</sup>	df1	df2	Sig.
Welch	2.577	4	250.255	.038

a. Asymptotically F distributed.

Source: Field study, 2016

**Table 4.4e: Multiple Comparisons**

Dunnett t (2-sided)<sup>a</sup>

(I) AGE GROUP	(J) AGE GROUP	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
26 - 30 YEARS	25 YEARS & BELOW	.09609	.06945	.492	-.0762	.2684
31 -35 YEARS	25 YEARS & BELOW	.24623*	.08322	.012	.0398	.4527
36 - 40 YEARS	25 YEARS & BELOW	.00620	.10455	1.000	-.2531	.2656

41-50 YEARS	25 YEARS & BELOW	.18990	.14269	.529	-.1641	.5439
-------------	------------------	--------	--------	------	--------	-------

a. Dunnett t-tests treat one group as a control, and compare all other groups against it.

\*. The mean difference is significant at the 0.05 level. Dependent variable: Intention to use

Source: Field Study, 2016.

**Table 4.4f: 3way crosstab of age, intention to shop & gender for respondents of 31-35years**

Age Group	Intention to shop	Gender	Observed	
			Count	%
31-35 YEARS	No	Female	9	4.57
		Male	8	4.06
	Yes	Female	73	37.06
		Male	107	54.31
		Total	197	100.0

Source: Field study, 2016

**Table 4.4g: 3way crosstab of age, intention to shop & gender for respondents of 25yrs&below**

Age Group	Intention to shop	Gender	Observed	
			Count	%
25 YEARS & Below	No	Female	33	8.64
		Male	23	6.02
	Yes	Female	190	49.74
		Male	136	35.60
		Total	382	100.0

Source: Field study,2016

To calculate the estimate of the effect size, omega squared ( $\omega^2$ ) is adopted. This is given by:

$$\omega^2 = \frac{SS_m - (df_m)MS_r}{SSt + MS_r}$$

Where,  $\omega^2$  = estimate of effect size,  $SS_m$  = Model sum of squares,  $df_m$  =

Model degree of freedom,  $MS_r$  = Mean squared residual,  $SSt$  = Total sum of squares,  $MS_r$  =

Mean squared residual. From table 4.4c,  $SS_m = 9.128$ ,  $df_m = 4$ ,  $MS_r = 0.9$ ,  $SS_t = 993.941$

When all these are substituted in the formula it becomes:

$$\omega^2 = \frac{9.128 - (4)0.9}{993.941 + 0.9}$$

$$= \frac{5.528}{994.841}$$

$$= 0.0055566668$$

$$\omega = \sqrt{0.0055566668}$$

$$\omega = 0.075 = 0.08$$

While Table 4.4a presents the descriptive statistics (such as means, standard deviation, etc) of the intentions of the different age groups to engage in online shopping, Table 4.4b presents Levene's test of homogeneity of variance which returned a significant result ( $F = 2.667$ ,  $p = 0.031$ ). This result shows that the variances of the various age groups are significantly different which violates ANOVA's assumption of equality of variance.

As a result of this violation, the output in Table 4.4c (ANOVA table) was not used to test the equality of means but rather a more robust test of equality of means was done as shown in Table 4.4d.

From table 4.4d, Welch  $F(4, 250.255) = 2.577$ ,  $p = 0.038$ ,  $\omega = 0.08$ . These results indicate that a significant difference exists in the intentions of at least one pair of these age groups to shop online. Adopting Kirk (1996) benchmark, a  $\omega$  of 0.08 represents an estimate of a moderate effect size of age on intention to engage in online shopping. In a post hoc test, a Dunnett t two-sided multiple comparison test (Table 4.4e) was done to ascertain which group means differ. The result shows that the mean scores of intention to shop online of respondents who are twenty-five years of age and below and those within the age bracket of thirty-one to thirty-five years of age are significantly different.

A further profiling of this pair of respondents was done through a three-way crosstabulation of age, intention to shop online and gender (Tables 4.4f and 4.4g) to truly understand how these groups of respondents differ. Looking at the two tables it can be seen that though women are marginally more likely to say no to online shopping than men in the two age groups, however, those who are 25 years old or younger are more likely to reject online shopping with a score of 14.66% than respondents who are aged 31-35 years who scored



8.66%. Again, among those who have intention to shop online, men are more than women among respondents who are within the age range of 31-35 years with score of 54.31% and 37.06% respectively, on the other hand, females are more than males among those who are aged 25 years or below with scores of 49.74% and 35.60% respectively. Overall however, with a score of 91.37% respondents aged 31-35 years out performed those who are 25 years old or younger who scored 85.34% in their willingness to shop online (See Appendix D for the full cross tabulation analysis involving all the age groupings, gender and intention).

Given the above results, hypothesis H<sub>0</sub>1b is rejected and therefore it can be concluded that age will significantly affect consumers' online shopping acceptance.

**H<sub>0</sub>1c: Level of education does not significantly impact consumers' e-shopping acceptance**

Test statistic: H<sub>0</sub>1c is tested with one-way analysis of variance (ANOVA).

**Table 4.5a: Descriptives**

Intention to use

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
O'LEVEL	333	5.5049	1.01259	.05549	5.3957	5.6140	1.63	7.00
OND /NCE	168	5.4055	1.09508	.08449	5.2387	5.5723	1.00	7.00
HND/BA/BSC	453	5.5869	.85635	.04023	5.5078	5.6660	2.25	7.00
PGD/M.SC/ MBA	132	5.7339	.87007	.07573	5.5841	5.8837	2.50	7.00
OTHERS	13	5.6538	1.04477	.28977	5.0225	6.2852	3.75	7.00
Total	1099	5.5528	.95137	.02870	5.4965	5.6091	1.00	7.00

Source: Field study, 2016

**Table 4.5b: Test of Homogeneity of Variances for H<sub>0</sub>1c**

Intention to use

Levene Statistic	df1	df2	Sig.
2.866	4	1094	.022

Source: Field study, 2016

**Table 4.5c: ANOVA**

Intention to use

	Sum of Squares	df	Mean Square	F	Sig.
--	----------------	----	-------------	---	------

Between Groups	9.399	4	2.350	2.611	.034
Within Groups	984.415	1094	.900		
Total	993.814	1098			

Source: Field study, 2016

**Table 4.5 d: Robust Tests of Equality of Means**

Intention to use

	Statistic <sup>a</sup>	df1	df2	Sig.
Welch	2.467	4	84.705	.051

a. Asymptotically F distributed.

Source: Field study, 2016

**Table 4.5e: Multiple Comparisons**

Intention to use

Dunnett t (2-sided)<sup>a</sup>

(I) HIGHEST EDUCATIONAL QUALIFICATION	(J) HIGHEST EDUCATIONAL QUALIFICATION	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
OND /NCE	O'LEVEL	-.09937	.08977	.685	-.3219	.1232
HND/BA/BSC	O'LEVEL	.08204	.06847	.621	-.0877	.2518
PGD/M.SC/ MBA	O'LEVEL	.22902	.09757	.071	-.0129	.4709
OTHERS	O'LEVEL	.14897	.26818	.962	-.5159	.8138

a. Dunnett t-tests treat one group as a control, and compare all other groups against it.

Source: Field study, 2016

Calculating effect size using omega squared ( $\omega^2$ ). This is given by the formula:

$$\omega^2 = \frac{SS_m - (df_m)MS_r}{SS_t + MS_r}$$

Where,  $\omega^2$  = estimate of effect size,  $SS_m$  = Model sum of squares,  $df_m$  =

Model degree of freedom,  $MS_r$  = Mean squared residual,  $SS_t$  = Total sum of squares. Table 4.5c shows that  $SS_m = 9.399$ ,  $df_m = 4$ ,  $MS_r = 0.9$ ,  $SS_t = 993.841$ . Juxtaposing these figures in the formula it becomes:

$$\omega^2 = \frac{9.399 - (4)0.9}{993.841 + 0.9}$$

$$= \frac{5.799}{994.741}$$

$$= 0.0058290722$$

$$\omega = \sqrt{0.0058290722}$$

$$= 0.0763483608$$

$$\omega = 0.0764 = 0.08$$

Table 4.5a (descriptive statistics) presents the means, standard deviation, etc of the intentions of respondents with different educational qualifications to shop online. On the other hand, Table 4.5b presents Levene's test of homogeneity of variance which returned a significant result ( $F = 2.866$ ,  $p = 0.022$ ). This result shows that the variances of these respondents with different levels of educational qualifications are significantly different. This violates ANOVA's assumption of equality of variance. Consequently, the output in Table 4.5c (ANOVA table) was not used to test the equality of means but rather a more robust test of equality of means was done as shown in Table 4.5d.

From Welch F-ratio ( $4, 84.705$ ) = 2.467,  $p = 0.051$ , and effect size estimation,  $\omega = 0.08$ , there is an indication that even though levels of education show a medium-sized effect on

intentions to shop online ( $\omega = 0.08$ ) its impact still remains statistically insignificant. Also, as shown in a Dunnett t two-sided multiple comparison post hoc tests (Table 4.5e), all the mean score comparisons of respondents intentions to engage in e-shopping returned insignificant results for all pairs of education levels. Thus, hypothesis H<sub>0</sub>1c is not rejected and therefore it can be concluded that level of education will not significantly impact consumers' e-shopping acceptance.

**H<sub>0</sub>1d: Income does not significantly influence consumers' online shopping acceptance**

**Table4.6a: Descriptives**

Intention to use

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
#60,000-#215,999	514	5.5304	.97634	.04306	5.4458	5.6150	1.00	7.00
#216,000-#500,000	202	5.5316	1.01520	.07143	5.3907	5.6724	1.63	7.00
#500,001 - #2,500,000	211	5.6185	.84799	.05838	5.5034	5.7336	1.88	7.00
#2,500,001 -#5,000,000	98	5.5765	.88691	.08959	5.3987	5.7543	3.00	7.00
#5,000,001 - #10,000,000	46	5.6033	.96332	.14203	5.3172	5.8893	2.50	7.00
#10,000,001 AND ABOVE	29	5.4784	.98769	.18341	5.1028	5.8541	3.75	7.00
Total	1100	5.5533	.95110	.02868	5.4970	5.6096	1.00	7.00

Source: Field study, 2016

**Table4.6b: Test of Homogeneity of Variances**

Intention to use

Levene Statistic	df1	df2	Sig.
1.240	5	1094	.288

Source: Field study, 2016

**Table 4.6c: ANOVA**

Intention to use

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.592	5	.318	.351	.882
Within Groups	992.549	1094	.907		
Total	994.141	1099			

Source: Field study, 2016

**Table 4.6d: Multiple Comparisons**

Intention to use  
Dunnnett t (2-sided)<sup>a</sup>

(I) ANNUAL INCOME	(J) ANNUAL INCOME	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
#60,000-#215,999	#10,000,001 AND ABOVE	.05195	.18180	.992	-.3766	.4805
#216,000-#500,000	#10,000,001 AND ABOVE	.05311	.18915	.992	-.3928	.4990
#500,001 - #2,500,000	#10,000,001 AND ABOVE	.14004	.18864	.781	-.3046	.5847
#2,500,001 -#5,000,000	#10,000,001 AND ABOVE	.09808	.20135	.936	-.3766	.5727
#5,000,001 - #10,000,000	#10,000,001 AND ABOVE	.12481	.22585	.903	-.4076	.6572

a. Dunnnett t-tests treat one group as a control, and compare all other groups against it.

Source: Field study, 2016

Omega squared ( $\omega^2$ ) is used in calculating the estimation for the effect size of income on the dependent variable. As has been shown in the preceding sections omega squared formula is expressed as:  $\omega^2 = \frac{SS_m - (df_m)MS_r}{SSt + MS_r}$  Where,  $\omega^2$  = estimate of effect size,  $SS_m$  = Model sum of squares,  $df_m$  = Model degree of freedom,  $MS_r$  = Mean squared residual,  $SSt$  = Total sum of squares,  $MS_r$  = Mean squared residual.

From SPSS ANOVA output (Table 4.6c):  $SS_m = 1.592$ ,  $df_m = 5$ ,  $MS_r = 0.907$ ,  $SSt = 994.141$

Substituting all these in the formula, it becomes:

$$\omega^2 = \frac{1.592 - (5)0.907}{994.141 + 0.907}$$

$$= \frac{-2.943}{995.048}$$

$$= -0.0029576463$$

$$\omega = \sqrt{0.0029576463}$$

$$= -0.0543842468$$

$$\omega = -0.05$$

In Table 4.6a the descriptive statistics such as number of respondents in each income group, their mean, standard deviations etc are presented. Table 4.6b presents the result of Levene's test for equality of variances. This test produced an insignificant result,  $F= 1.240$ ,  $p= 0.288$  which shows that the variances of respondents in terms of their income is not significantly different since  $p>0.05$ . The implication of this result is that the ANOVA assumption of homogeneity of variances has not been broken and therefore the assurance that the F-ratio as produced is robust enough to detect an effect.

The ANOVA result (Table 4.6c) shows that  $F(5, 1094) = 0.351$ ,  $p= 0.882$ , and effect size estimation,  $\omega = -0.05$ . These results are an indication that incomes of respondents have an insignificant effect on their intentions to shop online. This is further corroborated by the small-sized effect detected ( $\omega = -0.05$ ). Also, as shown in a Dunnett t two-sided multiple comparison post hoc tests (Table 4.6e), all the mean score comparisons of respondents' intentions to use online outlets for shopping returned insignificant results for all pairs of income. Consequently, hypothesis  $H_{01d}$  is not rejected and therefore it can be concluded that income will not significantly influence consumers' online shopping acceptance.

## Summary of Hypothesis One Testing

Table 4.7: Summary of results obtained from testing of hypothesis one

Hypothesis	Independent/ Dependent variables	Test statistic	p-value	Effect size estimation model	Effect size detected	Decision
H <sub>0</sub> 1a	Gender/ intention to shop online	Independent sample t- test	0.058	Cohen's d	Small $\hat{d} = 0.11$	H <sub>0</sub> : Not rejected
H <sub>0</sub> 1b	Age/ intention to shop online	One-way ANOVA	0.038	Omega Squared	Medium $\omega = 0.08$	H <sub>0</sub> : Rejected
H <sub>0</sub> 1c	Education/ intention to shop online	One-way ANOVA	0.051	Omega Squared	Medium $\omega = 0.08$	H <sub>0</sub> : Not rejected
H <sub>0</sub> 1d	Income/ intention to shop online	One-way ANOVA	0.882	Omega Squared	Small $\omega = -0.05$	H <sub>0</sub> : Not rejected

Source: Compilation by Researcher

Table 4.7 presents the summary of the outcome of testing of four sub-hypotheses (representing hypothesis one of this study) which tested the effects of socio-demographic variables such as gender, age, education level and income on e-shopping acceptance. As these results show testing of this group of sub-hypotheses produced mixed results with age being significant and having a moderate effect on consumers' willingness to engage in online shopping and hence, the null hypothesis was rejected. On the other hand, the remaining variables of gender, education level and income were all insignificant and their corresponding null hypotheses were not rejected.

**Results of Hypothesis Two:**

**H<sub>0</sub>2: Product types available online do not significantly influence e-shopping intention.**

**This hypothesis is subdivided into:**

**H<sub>0</sub>2a:** Consumers’ intention to shop online for search goods is not significantly different from their intention to shop online for experiential goods.

**H<sub>0</sub>2b:** Consumers’ intention to shop online for credence goods is not significantly different from their intention to shop online for search goods.

**H<sub>0</sub>2c:** Consumers’ intention to shop online for credence goods is not significantly different from their intention to shop online for experiential goods.

**Test Statistic:** paired t- test is used in testing the three sub-hypotheses that make up hypothesis two.

**Table 4.9 a: Paired Samples Statistics**

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	search good made from scores from wrist watch and book	4.8514	1100	1.63446	.04928
	experiential good made from scores of beer and perfume	3.3277	1100	1.36980	.04130
Pair 2	Credence good made from scores of clothe and computer software	5.0664	1100	1.55082	.04676
	search good made from scores from wrist watch and book	4.8514	1100	1.63446	.04928
Pair 3	Credence good made from scores of clothe and computer software	5.0664	1100	1.55082	.04676
	experiential good made from scores of beer and perfume	3.3277	1100	1.36980	.04130

Source: Field study, 2016



**Table 4.9 b : Paired Samples Test**

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair 1	search good made from scores from wrist watch and book - experience good made from scores of beer and perfume	1.52364	1.72082	.05188	1.42183	1.62544	29.366	1099	.000
Pair 2	Credence good made from scores of clothe and computer software - search good made from scores from wrist watch and book	.21500	1.65712	.04996	.11696	.31304	4.303	1099	.000
Pair 3	Credence good made from scores of clothe and computer software - experience good made from scores of beer and perfume	1.73864	1.61082	.04857	1.64334	1.83393	35.798	1099	.000

Source: Field study (2016)

**Effect Size:** the estimate of the effect size for each sub hypothesis is calculated through

Cohen’s d which is given by the formula:

$\hat{d} = \frac{\bar{X}_1 - \bar{X}_2}{S}$  Where  $\hat{d}$ = estimate of effect size,  $\bar{X}_1$  and  $\bar{X}_2$  represent the mean scores of the product types being compared, and S represents standard deviation of the first product type in each pair being compared.

For **H<sub>02a</sub>**,  $\bar{X}_1$  represents group mean for search goods,  $\bar{X}_2$  represents group mean for experiential goods, S represents standard deviation for search goods and from table 4.9a,  $\bar{X}_1$ = 4.8514,  $\bar{X}_2$ = 3.3277 and S= 1.63446. When these figures are substituted in the formula, it becomes:

$$\hat{d} = \frac{4.8514 - 3.3277}{1.63446}$$

$$= \frac{1.5237}{1.63446}$$

$$\hat{d} = 0.93$$

For **H<sub>02b</sub>**,  $\bar{X}_1$  represents group mean for credence goods,  $\bar{X}_2$  represents group mean for search goods, S stands for standard deviation for credence goods and from table 4.9a,  $\bar{X}_1= 5.0664$ ,  $\bar{X}_2= 4.8514$  and  $S= 1.55082$ . Substituting these figures in the formula, it becomes:

$$\hat{d} = \frac{5.0664 - 4.8514}{1.55082}$$

$$= \frac{0.215}{1.55082}$$

$$\hat{d} = \mathbf{0.14}$$

For **H<sub>02c</sub>**,  $\bar{X}_1$  represents group mean for credence goods,  $\bar{X}_2$  represents group mean for experiential goods, S stands for standard deviation for credence goods and from table 4.9a,  $\bar{X}_1= 5.0664$ ,  $\bar{X}_2= 3.3277$  and  $S= 1.55082$ . Substituting these figures in the formula, it becomes:

$$\hat{d} = \frac{5.0664 - 3.3277}{1.55082}$$

$$= \frac{1.7387}{1.55082}$$

$$\hat{d} = \mathbf{1.12}$$

As mentioned in the methods chapter, to measure the overall intention of respondents to purchase a product type online, Girard *et al.*, (2006) approach was adopted whereby the average score of the preference responses of participants to the two products in each of the three categories was used as the score for each of the product categories. Thus, a respondent's preference scores on books and wrist watches were added and divided by two to arrive at the respondent's preference score for search good. For credence good's score, the mean

preference scores of clothes and computer software were taken. Same was done for experiential good's score which was derived from the mean score of beer and perfumes.

In Table 4.9a the descriptive statistics such as number of respondents, mean, standard deviation and standard error of each product type are presented. Table 4.9b presents the results of the paired sample t-test for the three hypotheses.

Results for  $H_{02a}$  show that on average respondents are willing to shop more for search goods online ( $M= 4.8514$ ,  $SE= 0.04928$ ) than for experiential goods ( $M= 3.3277$ ,  $SE= 0.04130$ ). This difference, 1.5237 is significant  $t(1099) = 29.366$ ,  $p = 0.0000$  and represents a large-sized effect,  $\hat{d}= 0.93$ . With these results  $H_{02a}$  is rejected and therefore it can be concluded that consumers' intention to shop online for search goods is significantly different from their intention to shop online for experiential goods.

For  $H_{02b}$ , results on tables 4.9a and 4.9b show that respondents are willing to shop more for credence goods ( $M= 5.0664$ ,  $SE= 0.04676$ ) than for search goods online ( $M= 4.8514$ ,  $SE= 0.04928$ ). This difference, 0.215 is significant  $t(1099) = 4.303$ ,  $p = 0.0000$  and represents a small-sized effect,  $\hat{d}= 0.14$ . With these results  $H_{02b}$  is rejected and therefore it can be concluded that consumers' intention to shop online for credence goods is significantly different from their intention to shop online for search goods.

For  $H_{02c}$ , results on Tables 4.9a and 4.9b show that participants are willing to engage in e-shopping for more credence goods ( $M= 5.0664$ ,  $SE= 0.04676$ ) than for experiential goods ( $M= 3.3277$ ,  $SE= 0.04130$ ). This difference, 1.7387 is significant  $t(1099) = 35.798$ ,  $p = 0.0000$  and represents a large-sized effect,  $\hat{d}= 1.12$ . With these results  $H_{02c}$  is rejected and therefore it can be concluded that consumers' intention to shop online for credence goods is significantly different from their intention to shop online for experiential goods.

## Summary of Hypothesis Two Testing

Table 4.10: Summary of results obtained from testing of hypothesis two

Hypothesis	Paired product types	Test statistic	Mean difference	p-value	Effect size estimation model	Effect size detected	Decision
H <sub>0</sub> 2a	Search goods V. Experiential goods	Paired sample t-test	1.5237	0.000	Cohen's d	Large $\hat{d} = 0.93$	H <sub>0</sub> : Rejected
H <sub>0</sub> 2b	Credence goods V. Search goods	Paired sample t-test	0.215	0.000	Cohen's d	Small $\hat{d} = 0.14$	H <sub>0</sub> : Rejected
H <sub>0</sub> 2c	Credence goods V. experiential goods	Paired sample t-test	1.7387	0.000	Cohen's d	large $\hat{d} = 1.12$	H <sub>0</sub> : Rejected

Source: Compilation by Researcher

Table 4.10 presents the summary of the results of testing of three sub-hypotheses (representing hypothesis two) which tested whether product types available online do influence e-shopping intention significantly differently.

As shown in Table 4.10, testing of this group of hypotheses produced consistent results with product type having from small to large sized effects on e-shopping intentions. Relatively, credence goods attracted the highest acceptance with a mean score of 5.0664, search goods take the second position with a mean score of 4.8514 and the least of the three product types is experiential goods which has a mean score of 3.3277. Consequently, all the three null hypotheses were rejected and conclusion reached that product types available online do influence e-shopping intentions significantly and differentially.

### **Result of Hypothesis Three**

**H<sub>0</sub>3: Perceived risk does not significantly mediate the relationship between perceived usefulness and e-shopping intention.**

**Test Statistic:** Mediation is a regression-based model. Conceptually, it occurs when the strength of the relationship between a predictor variable and criterion variable is depreciated as a result of the inclusion of another predictor variable (Baron & Kenny, 1986; Field, 2013). It refers to a situation when the relationship between a predictor and a criterion variable can be explained by their relationship to a third variable which is the mediator (Field, 2013).

**Statistical Model:** As averred by Field (2013), the statistical model for mediation is the same as its conceptual model which is tested by a series of regression analyses anchored on the four conditions enunciated by Baron and Kenny (1986) and Judd and Kenny (1981). These conditions include firstly; the predictor must significantly predict the criterion variable in the first equation. Secondly, the predictor must also significantly affect the mediator in the second equation; thirdly, the mediator must affect the criterion variable in the third equation; and fourthly, the predictor must be shown to affect the criterion variable in the third equation less strongly. If these conditions all hold in the predicted direction, then the effect of the predictor on the criterion variable must be less in the third equation than in the first. Perfect mediation would have been established if the predictor has no effect on the criterion variable when the mediator is introduced.

Field (2013) notes that even though Baron and Kenny (1986) advocated using the sizes of regressions as parameter to determine mediation, in practice researchers tend to use change in significance as determinant of mediation, thus, mediation exists if prior to introducing the

mediator, the relationship between the predictor and criterion variable is significant but turns insignificant when the mediator is introduced into the equation. Field (2013) further argues that “given the all-or-nothing thinking that p-value encourage” this approach could mislead such researchers into reaching absurd conclusions.

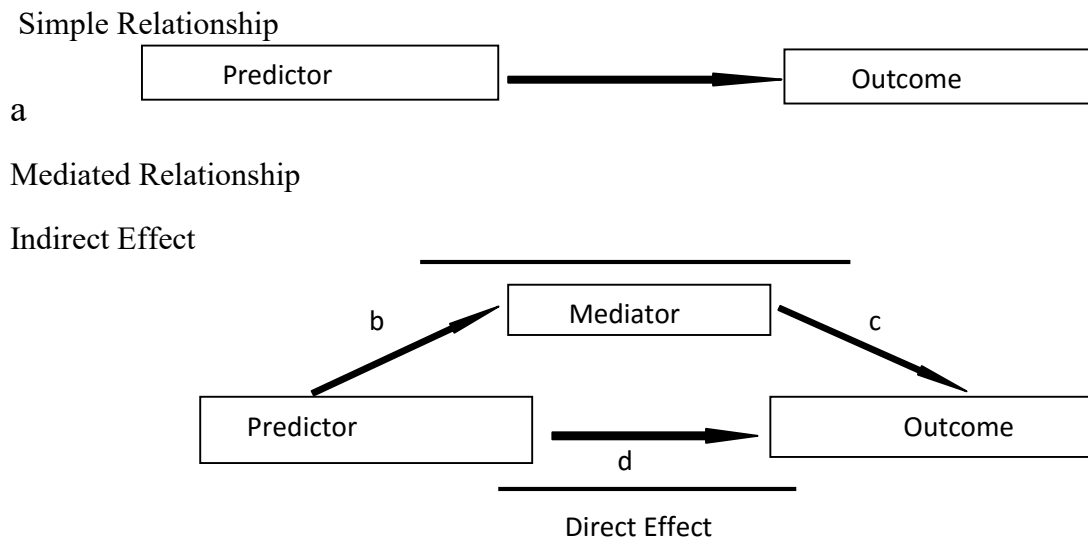


Figure 4.1: Design of basic mediation model

Source: Field, 2013

Alternative approach to determining mediation is to estimate indirect effect and its significance which is a method proposed by Lambert, O’Rourke, Smith and DeLongis (2012). This approach posits that mediation effect is given by the combined effects of paths b and c in figure 4.1. Indirect effect size is subjected to significance tests such as Sobel’s test to ascertain the significance of this effect. If it is significant then there is mediation (Sobel, 1982). Field (2013), further, notes that the importance of effect may be determined through effect size measures such as standardised and unstandardised indirect effect measure, and Kappa-squared ( $K^2$ ) accompanied by their confidence intervals which are unaffected by sample sizes (Field, 2013). In using Kappa-squared effect size measure, Preacher and Kelley (2011), gave a benchmark of 0.01 for small effect size, 0.09, for medium effect size and 0.25 for large effect size.



## Running Mediation Analysis

In testing H<sub>03</sub>, Lambert et al, (2012) model which estimates mediation through indirect effect as against Baron and Kenny (1986) model of mediation analysis, is adopted. To facilitate computation, Hayes (2012) process tool which is based on Lambert et al., (2012) mediation model is used. The results are shown in Tables 4.14a to 4.14d.

**Table 4.14a: Perceived risk predicted from perceived usefulness**

```
*****
Model = 4
  Y = Intention
  X = PU
  M = PR

Sample size
  1100
*****
Outcome: PR

Model Summary
      R      R-sq      MSE      F      df1      df2      p
    .2689    .0723    1.2314   85.5616    1.0000  1098.0000  .0000

Model
      coeff      se      t      p
constant  5.1504   .1764   29.1933  .0000
PU        -.2913   .0315   -9.2499  .0000
*****
Source: Field study, 2016
```

**Table 4.14b: Intention predicted from both Perceived usefulness & perceived risk**

```
*****
Outcome: Intention

Model Summary
      R      R-sq      MSE      F      df1      df2      p
    .5976    .3571    .5826   304.6580    2.0000  1097.0000  .0000

Model
      coeff      se      t      p
constant  3.1112   .1617   19.2372  .0000
PR        -.0883   .0208   -4.2558  .0000
PU         .5009   .0225   22.2751  .0000
*****
Source: Field study, 2016
```



Table 4.14c: Total Effect Model

\*\*\*\*\*

Outcome: Intention

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	.5886	.3465	.5917	582.1320	1.0000	1098.0000	.0000

Model

	coeff	se	t	p
constant	2.6562	.1223	21.7201	.0000
PU	.5267	.0218	24.1274	.0000

\*\*\*\*\*

Source: Field, 2016

Table 4.14d: TOTAL, DIRECT AND INDIRECT EFFECTS

\*\*\*\*\*

Total effect of X on Y

Effect	SE	t	p
.5267	.0218	24.1274	.0000

Direct effect of X on Y

Effect	SE	t	p
.5009	.0225	22.2751	.0000

Indirect effect of X on Y

Effect	Boot SE	BootLLCI	BootULCI
PR .0257	.0071	.0129	.0407

\*\*\*\*\*

Source: Field study, 2016

Preacher and Kelley (2011) Kappa-squared

Effect	Boot SE	BootLLCI	BootULCI
PR .0367	.0095	.0196	.0552

Normal theory tests for indirect effect

Effect	se	Z	p
.0257	.0067	3.8477	.0001

The results of the mediation analyses for hypothesis three are presented in tables 4.14a to 4.14d (see SPSS output in Appendix E). In Table 4.14a, it can be seen that perceived usefulness significantly predicts perceived risk,  $b = -0.2913$ ,  $t = -9.2499$ ,  $p = 0.000$  and  $R^2 = 0.0723$ . The negative coefficient shows an inverse relationship where an increment in perceived risk results in a reduction in perceived usefulness. The  $R^2$  of 0.0723 shows that seven point two percent (7.2%) of the variance in perceived risk can be explained by perceived usefulness.

Table 4.14b presents the regression of intention to shop online predicted from perceived usefulness and perceived risk. The result here shows that perceived usefulness still predicted e-shopping intention even when perceived risk (the mediator) is introduced into the equation,  $b = 0.5009$ ,  $t = 22.2751$ ,  $p = 0.0000$ . Perceived risk equally predicted e-shopping acceptance significantly,  $b = -0.0883$ ,  $t = -4.2558$ ,  $p = 0.0000$ . This regression model also produced an  $R^2$  of 0.3571 which means that the 35.7 % of the variance in e-shopping intention is jointly accounted for by both perceived usefulness and perceived risk.

Table 4.14c presents the regression of e-shopping intention predicted from perceived usefulness when perceived risk is controlled,  $b = 0.5267$ ,  $t = 24.1274$ ,  $p = 0.0000$ ,  $R^2 = 0.3465$ . This result shows that perceived usefulness significantly predicts e-shopping intention when perceived risk is left out of the equation. With  $R^2$  of 0.3465, perceived usefulness alone accounts for 34.7% of the variance in e-shopping intention.

Table 4.14d presents the results for the total, direct and indirect effects of both the predictor and the mediator on the criterion variable. The total effect tells us the effect of perceived usefulness acting alone on e-shopping intention,  $b = 0.5267$ ,  $t = 24.1274$ ,  $p = 0.0000$ . The direct effect is the effect of perceived usefulness when perceived risk (the mediator) is introduced into the equation,  $b = 0.5009$ ,  $t = 22.2751$ ,  $p = 0.0000$ . The indirect effect which is the mediation effect of perceived risk on the relationship between perceived usefulness and e-shopping intention is  $b = 0.026$  95% CI [0.013, 0.041].

Presented below Table 4.14d, are Preacher and Kelley's kappa-squared effect size test:  $K^2 = 0.037$  95%Bca CI [0.020, 0.055], and Sobel test of significance:  $b = 0.026$ ,  $z = 3.8477$ ,  $p = 0.0001$

The results above show that the necessary conditions establishing the existence of mediation effect have been met. Consequently, H<sub>03</sub> is rejected. Therefore, it can be concluded that perceived risk significantly mediates the relationship between perceived usefulness and e-shopping intention as there is a significant indirect effect of perceived usefulness on e-shopping through perceived risk,  $b=0.026$  95% CI [0.013, 0.041] as shown in figure 4.2. Using Preacher and Kelley's benchmark, this represents a relatively small effect,  $K^2 = 0.037$  95%Bca CI [0.020, 0.055].

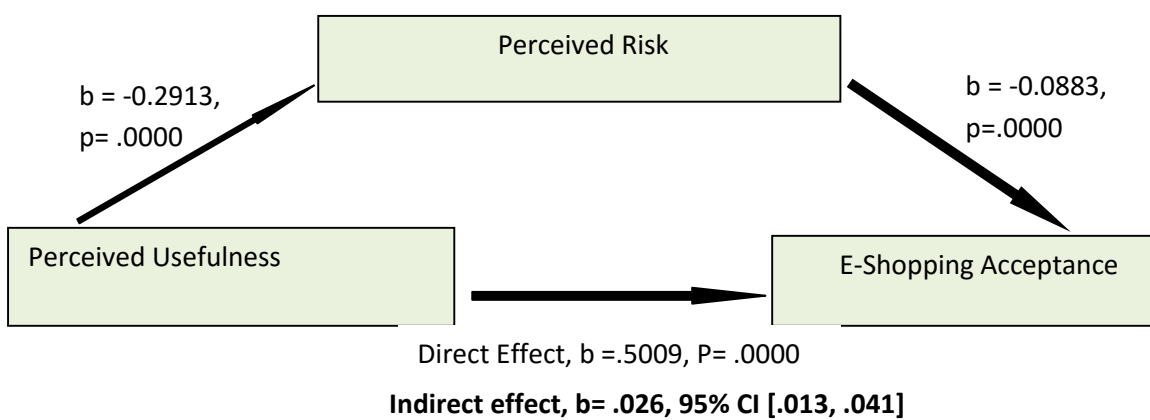


Figure 4.2: mediation effect of perceived risk on the relationship between perceived usefulness and e-shopping acceptance. Source: Field study, 2016

### Result of Hypothesis Four

**H<sub>04</sub>: Perceived risk does not significantly mediate the relationship between perceived ease of use and e-shopping intention.**

**Test Statistic:** A mediation analysis for this hypothesis is carried out using a regression-based model.

### Running Mediation Analysis

In testing H<sub>04</sub>, Lambert *et al.*, (2012) model which estimates mediation through indirect effect as against Baron and Kenny (1986) model of mediation analysis, is adopted. To

facilitate computation, Hayes (2012) process tool which is based on Lambert et al., (2012) mediation model is used. The results are as shown in Tables 4.15a to 4.15d.

**Table 4.15a: Perceived risk predicted from perceived ease of use**

```

*****
Model = 4
  Y = Intention
  X = PE
  M = PR

Sample size
  1100
*****
Outcome: PR

Model Summary
      R      R-sq      MSE      F      df1      df2      p
    .3837    .1472    1.1320   189.5208    1.0000   1098.0000   .0000

Model
      coeff      se      t      p
constant    5.9978    .1808   33.1713   .0000
PE          -.4501    .0327  -13.7667   .0000
*****
Source: Field study, 2016

```

**Table 4.15b: Intention predicted from both Perceived ease of use & perceived risk**

```

*****
Outcome: Intention

Model Summary
      R      R-sq      MSE      F      df1      df2      p
    .4652    .2164    .7101   151.4732    2.0000   1097.0000   .0000

Model
      coeff      se      t      p
constant    3.6239    .2026   17.8837   .0000
PR          -.0797    .0239   -3.3357   .0009
PE          .4065    .0280   14.4956   .0000
*****
Source: Field study, 2016

```

**Table 4.15c: TOTAL EFFECT MODEL**

```

*****
Outcome: Intention

Model Summary
      R      R-sq      MSE      F      df1      df2      p
    .4566    .2085    .7167   289.1524    1.0000   1098.0000   .0000

Model
      coeff      se      t      p
constant    3.1457    .1439   21.8650   .0000
PE          .4424    .0260   17.0045   .0000
*****
Source: Field study, 2016

```

**Table 4.15d: TOTAL, DIRECT, AND INDIRECT EFFECTS**

```

*****
Total effect of X on Y
  Effect      SE      t      p
  .4424      .0260    17.0045  .0000

Direct effect of X on Y
  Effect      SE      t      p
  .4065      .0280    14.4956  .0000

Indirect effect of X on Y
  Effect      Boot SE    BootLLCI    BootULCI
PR      .0359      .0124      .0124      .0600
*****

```

Source: Field study, 2016

**Preacher and Kelley (2011) Kappa-squared**

```

  Effect      Boot SE    BootLLCI    BootULCI
PR      .0393      .0131      .0139      .0646

```

**Normal theory tests for indirect effect**

```

  Effect      se      Z      p
  .0359      .0111    3.2339  .0012

```

The results from testing of hypothesis four are presented in Tables 4.15a, 4.15b, 4.15c and 4.15d (see Appendix F). As shown in Table 4.15a, perceived ease of use significantly predicted perceived risk,  $b = -0.4501$ ,  $t = -13.7667$ ,  $p = 0.000$  and  $R^2 = 0.1472$ . The negative relationship between the two variables suggests that as risk perception rises ease of use perception diminishes. Also, a coefficient of determination of 0.1472 implies that perceived ease of use accounts for 14.7 % of the variance in perceived risk.

Table 4.15b presents the regression of intention predicted from perceived ease of use and perceived risk. As the result shows perceived ease of use still predicted e-shopping intention even when perceived risk (which is the mediating variable) is introduced into the equation,  $b = 0.4065$ ,  $t = 14.4956$ ,  $p = 0.0000$ . Perceived risk also predicted e-shopping intention significantly,  $b = -0.0797$ ,  $t = 3.3357$ ,  $p = 0.0009$ . Note that this regression model also produced an  $R^2$  of 0.2164 which means that the 21.6 % of the variance in e-shopping intention is jointly accounted for by both perceived ease of use and perceived risk.

Table 4.15c presents the regression of e-shopping intention predicted from perceived ease of use when perceived risk is controlled,  $b = 0.4424$ ,  $t = 17.0045$ ,  $p = 0.0000$ ,  $R^2 = 0.2085$ . This result shows that perceived ease of use significantly predicts e-shopping intention when perceived risk is left out of the equation. The  $R^2$  of 0.2085 in the result shows that perceived ease of use alone accounted for 20.9% of the variance in e-shopping intention.

Table 4.15d presents the results for the total, direct and indirect effects of both the predictor variable and the mediator on the criterion variable. The total effect tells us the effect of perceived ease of use acting alone on e-shopping intention,  $b = 0.4424$ ,  $t = 17.0045$ ,  $p = 0.0000$ . The direct effect is the effect of perceived ease of use when perceived risk is introduced in the equation,  $b = 0.4065$ ,  $t = 14.4956$ ,  $p = 0.0000$ . The indirect effect which is the mediation effect of perceived risk on the relationship between perceived ease of use and e-shopping intention is given by:  $b = 0.0359$  95% CI [0.012, 0.060].

The results of effect size estimations and test of significance are shown below table 4.15d. Preacher and Kelley's kappa-squared effect size test results are:  $K^2 = 0.039$  95%Bca CI [0.014, 0.065], and Sobel test of significance result:  $b = 0.036$ ,  $z = 3.2339$ ,  $p = 0.0012$

Given that the results above indicate that all the necessary conditions for the establishment of mediation effect have been met,  $H_04$  is rejected and conclusion is reached that perceived risk significantly mediates the relationship between perceived ease of use and e-shopping intention as there is a significant indirect effect of perceived ease of use on e-shopping intention through perceived risk,  $b = 0.036$  95% CI [0.012, 0.060] as shown in figure 3. Using Preacher and Kelley's benchmark, this represents a relatively small effect,  $K^2 = 0.039$  95%Bca CI [0.014, 0.065].

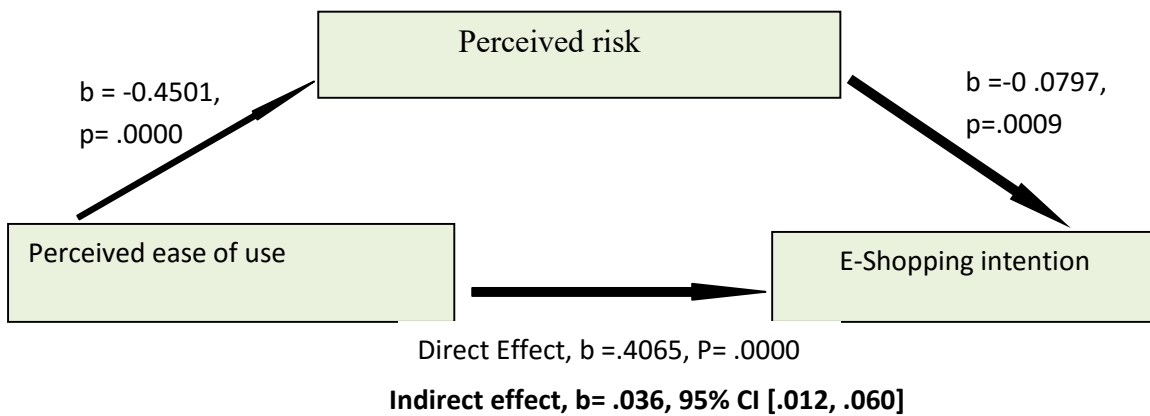


Figure 4.3: mediation effect of innovativeness on the relationship between perceived risk and e-shopping acceptance. Source:Field study, 2016

### Result of Hypothesis Five

**H<sub>05</sub>: The combined effects of innovativeness, perceived usefulness, perceived ease of use and perceived risk do not significantly predict consumers' acceptance of online shopping.**

**Test Statistic:** H<sub>05</sub> was subjected to Multiple Regression analysis. According to de Leeuw (2004) regression analysis is a data analysis technique frequently used in the social, behavioural, educational and health sciences. It is a multifunctional data analysis technique that can be used for description, prediction and inference (Kent, 2007). According to Field (2013), regression analysis is a linear model for summarizing the relationship between one or more predictor variables and a criterion variable. For H<sub>05</sub> the linear model is given by:

$$Y_i = (b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4) + \epsilon_i \text{ where,}$$

$Y_i$  = Consumers' e-shopping intention,  $X_1$  = Innovativeness,  $X_2$  = Perceived usefulness,  $X_3$  = Perceived ease of use,  $X_4$  = Perceived risk,  $b_0$  = intercept,  $b_1$  = Coefficient of Innovativeness,  $b_2$  = Coefficient of perceived usefulness,  $b_3$  = Coefficient of perceived ease of use,  $b_4$  = Coefficient of perceived risk and  $\epsilon_i$  = error.

The parameters ( $bs$ ) for  $H_05$  are estimated using the method of least squares. This method known as ordinary least squares (**OLS**) regression is used to estimate the values of  $b$  that describe the regression model that best fits the data (Field, 2013).

**Diagnostics and Test of Linear Model Assumptions:** When a regression analysis is conducted, the equation that is produced is correct for that particular sample from which the data is generated. However, diagnostic statistics are done to determine how good or bad the generated regression model is in terms of fitting the sampled data. For a model to be fit it must not be biased by unusual cases /outliers (Field, 2013). The existence of error in the data due to the presence and effect of outliers is cross- checked through residual analysis and Cook's distance. While residual analysis reveals the level of extreme cases in the data (Field suggests an acceptable level of about 5%), cook's distance is used to assess the overall effect of an outlier on the regression model. Cook and Weinsberg (1982) suggest that values higher than 1 is an evidence of bias.

As the result of the residual analysis (see Appendix G) for this study shows only 58 out of 1100 cases have their standard residuals above the recommended limit of  $\pm 2$ . This is about 5.3% of all cases which therefore means that there is no need to worry about bias in the data. Also, all the 58 extreme cases have their Cook's distance below 1, which shows that none of the cases with extreme value is exerting influence on the model.

For a regression model to generalise it must not have broken the main assumptions of the linear model and to verify whether the model does generalise, it can be cross-validated (Field, 2013). The cross-validation of a regression model can be done through the computation of an adjusted  $R^2$  which shows the amount of predictive shrinkage or loss of a model when fitted to a different sample. Though, SPSS produces an adjusted  $R^2$ , Field (2013) observes that this  $R^2$  is calculated with Wherry's equation which has been criticized for not showing "how the



regression model would predict scores of a different sample of data from the same population.” As a result of this short coming, the H<sub>05</sub> is cross-validated using Stein’s formula as recommended by Stevens (2002) and Field (2013). Stein’s formula for producing an adjusted R<sup>2</sup> is given by:

Adjusted R<sup>2</sup> = 1- [  $\left(\frac{n-1}{n-k-1}\right) \left(\frac{n-2}{n-k-2}\right) \left(\frac{n+1}{n}\right) ] (1-R^2)$  where, n = number of participants, k= number of predictors, and R<sup>2</sup> = unadjusted value. Applying this formula in calculating the adjusted R<sup>2</sup> for H<sub>05</sub>:

$$\begin{aligned} \text{Adjusted } R^2 &= 1- \left[ \left(\frac{1100-1}{1100-4-1}\right) \left(\frac{1100-2}{1100-4-2}\right) \left(\frac{1100+1}{1100}\right) \right] (1-0.404) \\ &= 1- [(1.0037)(1.0037)(1.0009)](0.596) \\ &= 1- 0.6010 = \mathbf{0.399} \end{aligned}$$

The adjusted R<sup>2</sup> of 0.399 as computed shows the level of predictive loss of (0.404-0.399= 0.005) 0.5 percent, which in real terms mean that if this model were to be fitted into another sample, it will account for less than 0.5 percent of the variance in the criterion variable. This level of shrinkage is very minor which shows that the model has good cross validity and can therefore be generalised.

In addition to cross-validation, for a regression model to be generalised, the underlying linear model assumptions must not be broken and when broken should be remedied through bootstrapping. As posited by Field (2013), not violating these assumptions makes the ordinary least squares (OLS) regression model, the significance tests and confidence intervals to be at their optimum, robust and therefore more reliable. For this study, the following assumptions were tested:

- a) Linearity and heteroscedasticity. These assumptions were tested with a graph (scatterplot) of standardized residuals against standardized predicted values. As the scatterplot (figure 5) shows there is no violation of linearity as the dots on the graph did not exhibit curved pattern, however, the dots seem to form a funnel shape which may indicate heteroscedasticity and thus, requires bootstrapping for remedy.
- b) Independent errors. This is sometimes known as a lack of autocorrelation (Field, 2013). This assumption was tested with Durbin-Watson test. Durbin and Watson (1951) suggest that values less than 1 or greater than 3 is a sign of problems while values close to 2 are acceptable. For  $H_0$ , the result of Durbin-Watson test is 1.849 which is close to 2 and therefore, evidence that the assumption of independence of errors and lack of autocorrelation is tenable.
- c) Normally distributed errors. This assumption is majorly of concern with small samples as it will invalidate confidence intervals and significance tests, in large samples it will not because of the central limit theorem (Field, 2013). Also, errors of normality can be remedied by bootstrapping. To test the normality of residuals, the normal probability plot is used. This plot shows deviation from normality as deviations from diagonal (see figure 6). This deviation from normality was corrected through bootstrapping as recommended by Field (2013).
- d) No perfect multicollinearity. This is to ensure that the predictor variables do not correlate too highly. Pallant (2013) aver that multicollinearity exist when correlation between predictor variables is 0.9 and above. When such happens, it becomes difficult to evaluate the relative contributions of the predictor variables (Kent, 2007). For general guidelines, Bowerman and O'Connell (1990) and Myers (1990), suggest that if the largest VIF is greater than 10 then there is a problem, also, if the average VIF is substantially greater than 1, then the regression may be biased. For tolerance statistics,

result below 0.1 is a sign of serious problem (Field, 2013) and a result below 0.2 is a sign of a potential problem (Menard, 1995). For H<sub>05</sub>, Variance Inflation Factor (VIF) and Tolerance value multicollinearity tests were conducted through SPSS and the result is as shown in table 4.16. These statistics produced results that are within the acceptable benchmarks as all predictors have an associated VIF less 10, with an average VIF of 1.3145 (which is not substantially higher than 1); and associated tolerance statistics greater than 0.2, hence, no problem of bias or of multicollinearity.

Table 4.16 Summary of Collinearity Statistics

Independent Variable	Tolerance Statistics	VIF Statistics
Innovativeness	0.777	1.288
Perceived Usefulness	0.791	1.265
Perceived ease of use	0.708	1.412
Perceived Risk	0.773	1.293
Average	N/A	1.3145

Source: Field study, 2016

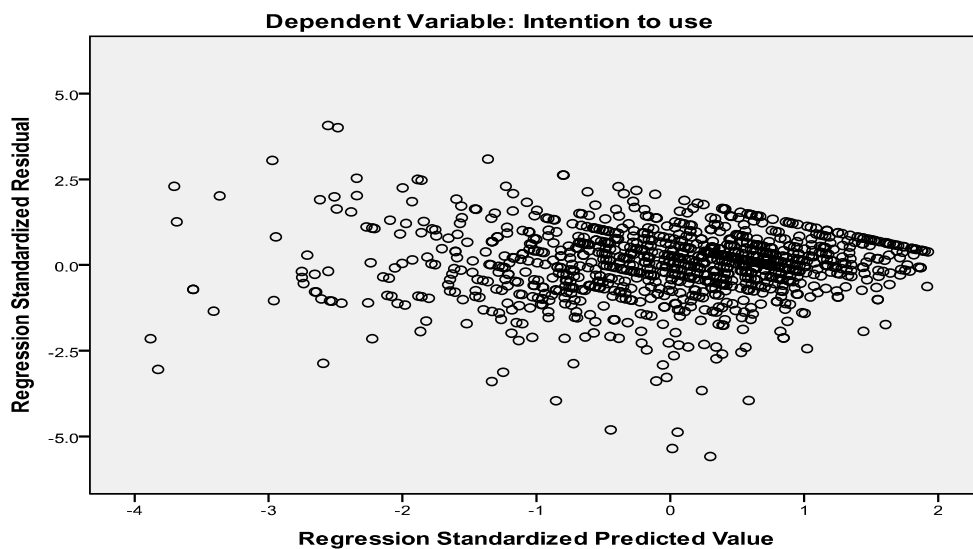


Figure 5: Scatterplot of ZRESID against ZPRED

Source: Field study, 2016.

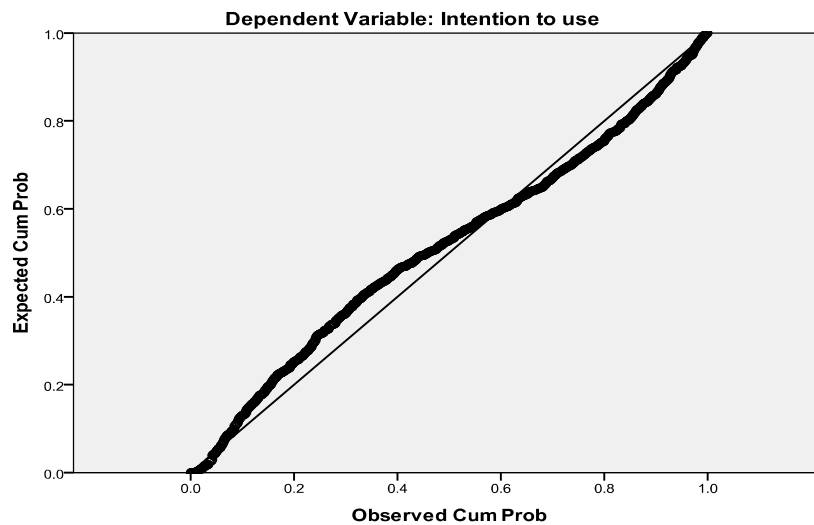


Figure 6: Normal P-P Plot of regression Standardised Residual

Source: Field study, 2015

**Regression Method:** Generally, there are three ways/methods of running multiple regression analysis based on the ways the predictor variables are entered into the model. These methods include: (i) Hierarchical/ Blockwise entry where predictors are entered based on past work and order of importance in predicting the criterion variable, (ii) Forced entry, where the predictors are forced into the model simultaneously. As Field (2013) avers, in this method, predictors are equally entered based on good theoretical reasons only that the researcher does not decide the order of selection into the model; and (iii) Stepwise methods which is made up of series of methods such as forward method, backward method, etc. In stepwise methods, mathematical criterion guides the researchers in entering predictors into the model.

In testing  $H_05$ , forced entry method was used. The selection of this method was premised on the observation of Kent (2007) that this method is the standard method for regression analysis and it is appropriate for theory testing (Studenmund & Cassidy, 1987).



Table 4.16a: Descriptive Statistics

	Mean	Std. Deviation	N
Intention to use	5.5533	0.95110	1100
Innovativeness	4.3741	1.18799	1100
Perceived usefulness	5.5008	1.06299	1100
Perceived ease of use	5.4423	0.98157	1100
Perceived Risk	3.5481	1.15161	1100

Source: Field study, 2016.

Table 4.16a presents the mean and standard deviation of the constructs and the total number of cases used in data analysis. The result shows the descriptive statistics for H<sub>05</sub>.

**Table 4.16b: Correlations Matrix for Variables of the study**

	<b>Intention to use</b>	<b>Innovativeness</b>	<b>Perceived usefulness</b>	<b>Perceived ease of use</b>	<b>Perceived Risk</b>
<b>Intention to use</b>	<b>1.000</b>				
<b>Innovativeness</b>	<b>.304</b>	<b>1.000</b>			
<b>Perceived usefulness</b>	<b>.589</b>	<b>.287</b>	<b>1.000</b>		
<b>Perceived ease of use</b>	<b>.457</b>	<b>.370</b>	<b>.430</b>	<b>1.000</b>	
<b>Perceived Risk</b>	<b>-.257</b>	<b>-.394</b>	<b>-.269</b>	<b>-.384</b>	<b>1.000</b>

Source: Field study, 2016

The correlations among the predictor and criterion variables of this study are shown as correlation matrix in Table 4.16b. This table shows that the predictor variables did not correlate very highly among themselves (the highest being the correlation between perceived usefulness and perceived ease of use which is 0.43), this is an evidence of none existence of collinearity problem.

**Table 4.16c: Summary of results of bootstrapped regression analysis for H<sub>05</sub>**

	Bootstrapped B	Beta (β)	95% CI L - U	t-value	p-value	R	R <sup>2</sup>	F-value	F-sig	Durbin Watson
<b>Model 1</b>										
<b>Constant</b>	1.854		1.36 – 2.35	8.910	0.001	0.636	<b>0.404</b>	185.468	<b>0.000</b>	<b>1.849</b>
<b>Innovativeness</b>	0.066	<b>0.082</b>	<b>0.02 – 0.11</b>	3.116	<b>0.004</b>					
<b>Perceived usefulness</b>	0.417	<b>0.466</b>	<b>0.36 – 0.48</b>	17.778	<b>0.001</b>					
<b>Perceived ease of use</b>	0.213	<b>0.220</b>	<b>0.14 – 0.28</b>	7.926	<b>0.001</b>					
<b>Perceived Risk</b>	-0.013	<b>-0.015</b>	<b>-0.06 – 0.03</b>	-0.574	0.607					

Model 1 predictors: (Constant), Innovativeness, Perceived usefulness, perceived ease of use, perceived risk

Dependent Variable in Model 1: Intention to use. Significant at 0.05 level

Source: Field study, 2016

Table 4.16c presents the result of the bootstrap analysis which was carried out to remedy the violations of the assumptions of homogeneity of variance and normality. When the two assumptions are broken the significance values and confidence intervals may not be as robust as they should be. As a result, bootstrap analysis is done to remedy the situation. Field (2013) posits that the main benefit of bootstrap confidence intervals and significance values lie on the fact that they produce accurate estimate of the true population value of unstandardized coefficient (b) for each predictor without reliance on the assumptions of normality or homoscedasticity. See Appendix H, for SPSS data output for the bootstrapped regression analysis for H<sub>05</sub>.

R<sup>2</sup> of 0.404 in the result shows that the four predictors: innovativeness, perceived usefulness, perceived ease of use and perceived risk and combined effects accounted for 40.4% of the variance in e-shopping intention. The fitness of the regression model to significantly predict e-shopping intention is indicated with F-ratio= 185.468, p<0.001. The b-values specify the individual contribution of each predictor to the model (Field, 2013). Deriving our model from the general regression model of  $Y_i = b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4$ , we have: **Intention = b<sub>1</sub>Inn+b<sub>2</sub>PU+b<sub>3</sub>PE+b<sub>4</sub>PR**. Thus, the model is specified as: **Intention = (0.082 Inn) + (0.466 PU) + (0.220 PE) + (- 0.015 PR)**.

Given the results presented in Table 4.16c and their associated p-values, three of the predictors, namely, perceived usefulness, perceived ease of use and innovativeness make positive and significant contributions to the model while the fourth predictor, perceived risk makes inverse and insignificant contribution to the model.

**Determination of Combined Effects of Predictors:** Field (2013) defines combined effects of predictors as the interaction effects of two or more predictors on a criterion variable. To determine this effect, Field (2013) suggests the subtraction of the summated (main) effects of the predictors from the  $R^2$  of the model in order to get the overlapping effect of the predictors. The unique effect of each predictor is derived from the square of its semi-partial/part correlation. See Tables 4.16d and 4.16e

**Table 4.16d: Part and partial correlations**

Correlations			
Predictors	Zero-order	Partial	Part
Innovativeness	0.304	0.094	0.073
Perceived Risk	-0.257	-0.017	-0.013
Perceived Usefulness	0.589	0.473	0.415
Perceived ease of use	0.457	0.233	0.185

Source: Field study, 2016

**Table 4.16e: Calculation of Predictors main effects**

Predictors	Part correlation	Part correlation squared
Innovativeness	0.073	0.0053
Perceived Risk	-0.013	0.0002
Perceived usefulness	0.415	0.1722
Perceived ease of use	0.185	0.0342
Total main effects		0.2119

Source: Field study, 2016.

Table 4.16d shows the results of zero-order, part and partial correlations as produced from SPSS. Zero-order correlations show Pearson's product moment correlation coefficient (r) of each of the predictors with e-shopping intention. From this result it can be seen that apart from perceived risk that has a negative r, the r associated with the rest of the predictors are positive. The partial correlation shows the relationship between each predictor and e-



shopping intention when the effect of the other three variables are controlled. On the other hand, part correlations are the semi-partial correlations which represent the unique effect or relationship that each of the predictor has with e-shopping intention.

Table 4.16e shows the calculation of the predictors' main effect on the criterion variable. From this result, the four predictors without their interaction (overlapping) effect account for 21.19% variance in e-shopping intentions. Given that the total effect of the model on the criterion variable is 40.4%, then the overlapping (combined) effect alone on the criterion variable is given by  $(40.4\% - 21.19\%) = 19.01$  percent. This result shows that the combined (overlapping) effect of these four predictors alone explains 19.21% variance in shoppers' intention to buy goods online.

To determine the significance of the combined effect of the predictors in predicting e-shopping intention, the F-statistic is used. As suggested by Field (2013) the significance of  $R^2$  can be ascertained with the following equation:

$$F = \frac{(N-k-1)R^2}{k(1-R^2)} \text{ where, } N = \text{Number of respondents, } K = \text{number of predictors, } R^2 = \text{Coefficient}$$

of determination in the model. For  $H_05$ ,  $N = 1100$ ,  $k = 4$ ,  $R^2 = 0.1921$

$$F = \frac{(1100-4-1)0.1921^2}{4(1-0.1921^2)},$$

$$= \frac{210.3495}{3.2316}, = 65.09, \text{ this result when compared to the null hypothesis that } R^2 \text{ is zero, shows}$$

that it is significant.

Based on these results,  $H_05$  is rejected, and a conclusion reached that the combined effect of innovativeness, perceived usefulness, perceived ease of use and perceived risk do significantly predict consumers' online shopping intention.

## Result of Hypothesis Six

**H<sub>06</sub>: Socio-demographics, product type, innovativeness, perceived usefulness, perceived ease of use and perceived risk do not significantly contribute in predicting consumers' online shopping intention.**

**Test Statistic:** H<sub>06</sub> was subjected to Binary Logistic Regression analysis. Pallant (2013) posits that logistic regression analysis is a data analysis technique with a model which allows for a prediction of categorical outcomes with two or more categories. According to Field (2013) logistic regression is “multiple regression but with an outcome variable that is categorical and predictor variables that are continuous or categorical”. When the model predicts membership of two categorical outcomes it is known as binary logistic regression, however, when the model predicts membership of more than two categories it is called multinomial or polychotomous logistic regression (Field, 2013). For H<sub>06</sub>, the dependent variable which is online shopping acceptance has two categories, those who have intention to shop online and those who do not. For H<sub>06</sub>, the logistic regression equation is given by:

$$P(Y) = \frac{1}{1 + e^{-(b_0 + b_1X_1i + b_2X_2i + b_3X_3i + b_4X_4i + b_5X_5i + b_6X_6i + b_7X_7i + b_8X_8i + b_9X_9i + b_{10}X_{10}i + b_{11}X_{11}i)}}$$

where,

P(Y) is the probability of Y occurring, e = the base of natural logarithms, b<sub>0</sub> = Constant, X<sub>1</sub> = Gender, X<sub>2</sub> = Age, X<sub>3</sub> = Education, X<sub>4</sub> = Income, X<sub>5</sub> = Innovativeness, X<sub>6</sub> = perceived risk, X<sub>7</sub> = perceived usefulness, X<sub>8</sub> = perceived ease of use, X<sub>9</sub> = Search product, X<sub>10</sub> = Experiential product, X<sub>11</sub> = Credence product, b<sub>1</sub> = Coefficient of gender, b<sub>2</sub> = Coefficient of age, b<sub>3</sub> = Coefficient of education, b<sub>4</sub> = Coefficient of income, b<sub>5</sub> = Coefficient of innovativeness, b<sub>6</sub> = Coefficient of perceived risk, b<sub>7</sub> = Coefficient of perceived usefulness, b<sub>8</sub> = Coefficient of

perceived ease of use,  $b_9$ = Coefficient of Search product,  $b_{10}$ = Coefficient of experiential product,  $b_{11}$ = Coefficient of credence product.

The parameters ( $bs$ ) for  $H_06$  are estimated using maximum-likelihood estimation. This method selects coefficients that make the observed values most likely to have occurred (Field, 2013).

**Transformation of Data:** Prior to subjecting the data for this study to logistic regression analyses two variables namely, intention, which is the dependent variable and one of the independent variables, product type (measured indirectly through search, experiential and credence goods) whose data were constructed and collected on interval scales were transformed to two-point (dichotomous) categorical scales.

As noted in chapter three these variables which are multi-item constructs were collected on a seven-point Likert scale. The numerical values/points on intention scale were: 7=strongly agree, 6= agree, 5=somewhat agree, 4=neutral, 3= somewhat disagree, 2= disagree, and 1 =strongly disagree. For the product type scale, the points on the scale were: 7=will certainly buy, 6=may prefer buying, 5=might buy, 4= may/may not buy, 3=not sure I will buy, 2=may never buy and 1 =will not buy.

For intention scale, these points were reduced to two namely agree or disagree. As such scores ranging from 4.5 to 7 represent *Agree* (Yes) while scores ranging from 1 to 4.49 represent *Disagree* (No). The same procedure was also adopted for product type scales where scores ranging from 1 to 4.49 represents '*Will not buy*' (No) while scores ranging from 4.5 to 7 stand for '*Will buy*' (Yes).

**Test of Linear Model Assumptions:** Logistic regression is prone to sources of bias just like other linear models. According to Field (2013), there are some important assumptions which

must be tested before logistic regression is used to analyze a dataset. These tests include linearity test, test for independence of errors and collinearity diagnostics.

The assumption of linearity in logistic regression implies that there is a linear relationship between any continuous predictors and the logit of the criterion variable. On the other hand, independence of errors when violated in logistic regression results in over dispersion. According to Field (2013), over-dispersion occurs where the variance is larger than expected from a model which makes the standard errors produced to be too small. Apart from testing for these two assumptions, Field (2013) further buttressed the necessity of the predictor variables not correlating very highly (multicollinearity) as logistic regression is prone to the biasing effect of collinearity. Prior to subjecting the data for this study to logistic regression analysis, these tests were conducted.

To test the assumption of the linearity of the logit, Field (2013) suggests that logistic regression should be run in which the interaction terms of the continuous predictors and their logit are included as predictors. When the test is run, any interaction term that is significant implies that the main effect has failed the assumption of linearity of the logit.

There are four continuous predictors that were included in the logistic regression for testing H<sub>06</sub>. These predictors whose interaction terms were used in testing this assumption include innovativeness, perceived risk, perceived usefulness and perceived ease of use. As the result of the test shows (see Appendix I) this assumption has not been broken because all the interaction terms are insignificant ( $p > .05$ ).

Residual analyses were done to check for both outliers and influential cases that may bias the logistic regression model. The results of these diagnostics show that there are only 35 cases (about 3.2%) with studentised residuals greater than  $\pm 2$  (see Appendix J). This figure is

below the 5 percent cut off mark suggested by Field (2013). Other diagnostic statistics reveal that all of these 35 cases still have their cook's distance and 'DF Beta for constant' less than 1. These results show that the logistic regression model is not biased as none of these 35 cases are exerting influence on the model.

Also, collinearity diagnostics were carried out (see Appendix K). As the results show none of the tolerance values of the predictors was below 0.1. Again, none of the Variance Inflation factors (VIF) associated with the predictors is above 10, while the average VIF for all the predictors is not substantially greater than 1 at 1.247. These results bear evidence that the data for these analyses are free from multicollinearity problems.

**Assessment of Logistic Regression Model:** to assess how good the logistic regression model fits the sample, they are subjected to 'goodness of fit' tests.

**Table 4.17a: Classification Table<sup>a,b</sup> for Block 0**

Observed			Predicted		Percentage Correct
			Intention to shop online		
			No	Yes	
Step 0	Intention to shop online	No	0	130	.0
		Yes	0	970	100.0
Overall Percentage					88.2

a. Constant is included in the model.

b. The cut value is .500

Source: Field study, 2016.

**Table 4.17b: Omnibus Tests of Model Coefficients**

	Chi-square	df	Sig.
Step 1 Step	228.895	23	.000
Block	228.895	23	.000
Model	228.895	23	.000

Source: Field study, 2016.

**Table 4.17c: Hosmer and Lemeshow Test**

Step	Chi-square	df	Sig.
1	12.024	8	.150

Source: Field study, 2016.

Tables 4.17a, 4.17b and 4.17c show the results of the ‘goodness of fit’ tests (see appendix L for the full logistic regression analysis result). Table 4.17a, depicts the result of the initial analysis without any of the predictor variables included. This table shows that the percentage of overall correctly classified respondents with the intention to shop online is 88.2 percent. Table 4.17b is the omnibus tests of model coefficients which is an overall indication of how well the model fits the sample. The result in this table shows that  $\chi^2 = 228.895$ ,  $df = 23$ ,  $p = .000$ . This result is significant and therefore an evidence that the model is fine.

In Table 4.17c the result of Hosmer and Lemeshow test, which is also a goodness of fit test, is presented:  $\chi^2 = 12.024$ ,  $df = 8$ ,  $p = .150$ . The p-value of Hosmer and Lemeshow test is interpreted differently. As noted by Pallant (2013) poor fit shows up with a significance value less than .05. As can be seen from this present result, the significance level,  $p = 0.150$ , is greater than the significance level of .05, thus, providing further support that the model is fit.

**Logistic Regression Model Summary (Providing Pseudo R Squared):**

**Table 4.17d: Model Summary**

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	570.336 <sup>a</sup>	.188	.364

a. Estimation terminated at iteration number 20 because maximum iterations has been reached.

Source: Field study, 2016.

Table 4.17d provides the R-squared for both Cox & Snell, and Nagelkerke. As the results show: Cox & Snell  $R^2 = 0.188$  and Nagelkerke  $R^2 = 0.364$ . These results can be interpreted to mean that the predictor variables (socio-demographics, product type, innovativeness, perceived usefulness, perceived ease of use and perceived risk) are able to explain between 18.8 percent and 36.4 percent of the variability in the criterion variable (E-shopping

acceptance). However, Pallant (2013) warns that these results should be interpreted with caution as the two R-squared are only pseudo R-squared.

PERCENTAGE ACCURACY IN CLASSIFICATION (PAC):

**Table 4.17e: Classification Table<sup>a</sup> for Block 1**

Observed			Predicted		
			Intention to shop online		Percentage Correct
			No	Yes	
Step 1	Intention to shop online	No	39	91	30.0
		Yes	21	949	97.8
Overall Percentage					89.8

a. The cut value is .500

Source: Field study, 2016.

Table 4.17e, which is the classification table for block 1, shows how well the model is able to correctly predict respondents according to their categories (Intention to shop online/ No intention to shop online), this is also known as percentage accuracy in classification (PAC). To gauge this model, the PAC of Table 4.17e is compared to PAC of Table 4.17a (which is the result of the analysis when none of the predictors is added in the model) in order to find out to what extent the inclusion of predictors improved the model. The PAC of Table 4.17a is 88.2 percent while that of Table 4.17e is 89.8. This means the model improved by 1.6 percent.

**SENSITIVITY OF THE MODEL**

The sensitivity of the model for this study is given by the percentage of respondents who have the intention to shop online that have been correctly predicted by the model (Pallant, 2013). From Table 4.17e, the sensitivity of the model is given by the true positive which is 97.8 percent. This is the percentage of respondents with intention to shop online that is correctly predicted.

**Specificity of the Model:**For this study, the specificity of the model is given by the percentage of respondents who have no intention to shop online that are truly predicted by the model. From Table 4.17e, this figure is given by the true negatives, which is 30 percent.

**The Positive Predictive Value:** According to Pallant (2013), the positive predictive value of a model is given by the percentage of cases that possess the characteristic that is truly observed. To calculate this, the number of cases in the predicted (yes), observed (yes) cell is divided by the total number in the predicted (yes) cells and multiplied by 100. From Table 4.17e, predicted (yes), observed (yes) cell = 949, total number in predicted yes cells = (91+949= 1040). This comes to  $949/1040 \times 100 = 91.25$  percent. This value shows that this model correctly picked 91.25 percent out of the respondents predicted to harbour the intention to shop online.

**The Negative Predictive Value:** this is the percentage of respondents predicted by the model that lack the characteristic of interest that is truly observed not to possess the characteristic. From Table 4.17e, this is calculated to be  $39 / (39+21) \times 100 = 65$  percent. Given this result, the negative predictive value for this study shows that the model correctly picked 65 percent out of those predicted not to have e-shopping intention.



## Importance of Each Predictor in Predicting the Criterion Variable

Table 4.17 F: Variables in the equation

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Step 1 <sup>a</sup>								
Sex(1)	-.089	.229	.152	1	.697	.915	.584	1.433
Age			2.606	5	.761			
25 yrs&Below	.172	.278	.380	1	.537	1.187	.688	2.048
26-30 yrs	.575	.380	2.288	1	.130	1.777	.844	3.744
<b>31-35 yrs</b>	.339	.239	2.011	1	<b>.040</b>	<b>1.404</b>	1.006	3.550
36-40 yrs	.520	.657	.626	1	.429	1.682	.464	6.099
41-50 yrs	16.569	40192.970	.000	1	1.000	15692509.023	.000	.
Educ			2.719	5	.743			
O'Level	-.161	.338	.228	1	.633	.851	.439	1.651
OND/NCE	.089	.292	.094	1	.760	1.093	.617	1.938
HND/BA/BSC	.567	.456	1.551	1	.213	1.764	.722	4.309
PGD/MSC/MBA	16.832	40192.970	.000	1	1.000	20418514.886	.000	.
PHD	-.417	.897	.216	1	.642	.659	.114	3.825
Income			7.327	5	.197			
Income (1)	.040	.312	.016	1	.899	1.040	.564	1.919
Income (2)	-.092	.348	.070	1	.791	.912	.461	1.802
Income (3)	-.168	.446	.142	1	.706	.845	.352	2.027
Income (4)	-.407	.615	.438	1	.508	.666	.200	2.220
Income (5)	-1.464	.560	6.831	1	.090	.231	.077	.693
Search2	.088	.237	.139	1	.709	1.092	.687	1.737
Experience2	-.176	.321	.301	1	.583	.839	.447	1.573
<b>Credence2</b>	.499	.237	4.447	1	<b>.035</b>	<b>1.648</b>	1.036	2.620
<b>Innovate</b>	.426	.110	15.087	1	<b>.000</b>	<b>1.531</b>	1.235	1.899
PR	.006	.111	.003	1	.958	1.006	.809	1.250
<b>PU</b>	.832	.104	63.886	1	<b>.000</b>	<b>2.298</b>	1.874	2.818
<b>PE</b>	.499	.120	17.410	1	<b>.000</b>	<b>1.648</b>	1.303	2.084
Constant	-6.913	1.030	45.013	1	.000	.001		

a. Variable(s) entered on step 1: Sex, Age, Educ, Income, Search2, Experience2, Credence2, Innovate, PR, PU, PE.

Income codes: (1) #60,000-#215,999,(2): #216,000-#500,000,(3): #500,001 - #2,500,000,(4): #2,500,001 -#5,000,000,(5) #5,000,001 - #10,000,000,(6) #10,000,001 & above

Source: Field study, 2016.

Table 4.17f which is the variables in the equation shows the coefficients (b), standard error (S.E.), Wald statistic, degree of freedom (df) and the odds ratio of the predictors. These statistics help determine the relative importance of each of the predictor variables in predicting the outcome variable (Field, 2013). From this table, it can be seen that five variables: age (31-35years), product type (credence), innovativeness, perceived usefulness,

and perceived ease of use significantly added to the predictive ability of this model in determining those with intention to shop online.

In conclusion, results presented in Tables 4.17a to 4.17f are the outcomes of the assessment of the impact of socio-demographics, product type, innovativeness, perceived risk, perceived usefulness and perceived ease of use on respondents' likelihood to report intention to engage in online shopping using direct logistic regression. The full model containing all predictors was statistically significant,  $\chi^2 (23, N= 1100) = 228.895, p < .001$ , showing that the model ably differentiated between respondents with intention to shop online and those without such intentions. The model as a whole explained between 18.8 % (Cox and Snell R squared) and 36.4 % (Nagelkerke R squared) of the variance in respondents' online shopping intention, and correctly identified 89.8% of the cases. As Table 4.17f shows, five of the predictor variables significantly contributed to the model: age (31-35years), product type (credence), innovativeness, perceived usefulness, and perceived ease of use. The strongest of these variables in predicting online shopping intention has the highest odds ratio of 2.298. This means that respondents who perceive online shopping as useful are over two times more likely to report intention to shop online than those who do not perceive online shopping as useful, when other factors are controlled in the model. Among these significant predictors, those who are within the age bracket of 31 to 35 years had the least associated odd ratio of 1.404 which implies that respondents within this age bracket are close to about 1.5 times more likely to have intention to shop online than respondents whose age ranges between 25 years and below, if other factors are controlled in the model.

**Post Hoc Test:** A post hoc test was conducted to find out the direct effect of perceived risk on intention to shop online. This test became necessary given the fact that while perceived risk significantly predicted e-shopping intention when in the same equation with either

perceived usefulness or perceived ease of use (see Tables 4.14b and 4.15b), it became insignificant in both multiple and logistic regression models when more predictor variables were introduced to the equations (see Tables 4.16f and 4.17f).

A simple linear regression analysis was carried out as post hoc test, using perceived risk as the predictor variable and e-shopping intention as the criterion variable. This way whether or not perceived risk has an effect on e-shopping intention (when other factors are controlled) was assessed.

**Table 4.17g: regression analysis of perceived risk with intention to use e-channels**

	<b>Beta (<math>\beta</math>)</b>	<b>t-value</b>	<b>p-value</b>	<b>R</b>	<b>R<sup>2</sup></b>	<b>F-value</b>	<b>F-sig</b>
<b>Model 1</b>							
<b>Constant</b>		54.510	0.000	0.394	<b>0.155</b>	202.119	<b>0.000</b>
<b>Perceived Risk</b>	<b>-0.394</b>	-14.217	<b>0.000</b>				

Model 1 predictors: (Constant), perceived risk

Dependent Variable in Model 1: Intention to use. Significant at 0.05 level

Source: Field study, 2016

The result of the regression analysis for the post hoc test is presented in Table 4.17g (see SPSS output in Appendix M). R<sup>2</sup> of 0.155 in the result signifies that the model specified by perceived risk singularly accounted for 15.5% of the variance in e-shopping intention. The F-value = 202.119 is significant at, p<0.001, which indicates that the regression model is fit to significantly predict e-shopping intention. The model parameters for the post hoc test show that the standardized beta value is negative with an associated significant p-value (p<.001), thus, indicating that the effect of perceived risk on e-shopping intention is negative. This result shows that perceived risk has a significant and inverse effect on intention to shop online, as such when a respondent's risk perception rises, his intention to shop online diminishes.

## Result of Hypothesis Seven

**H<sub>0</sub>7: The infusion of socio-demographics, product type, innovativeness and perceived risk to technology acceptance model (TAM) does not significantly improve its capacity to predict intention to shop online.**

**Test Statistic:** to test H<sub>0</sub>7, ‘intention to shop’ was first regressed against the two TAM constructs of perceived usefulness and perceived ease of use alone. Subsequently, innovativeness and perceived risk were introduced into the equation. The resulting coefficients of determination (R<sup>2</sup>) after the two regression analyses are compared to check if the addition of the two predictor variables improved the model in accounting for the variance in the dependent variable. Secondly, binary logistic regression analyses were done for PU and PE alone and later socio-demographics, product type, innovativeness and perceived risk were included in the analysis. Again, the results of (Cox and Snell R squared) and (Nagelkerke R squared) are compared to see if there is improvement in these parameters.

**Table 4.18a:** regression analysis of PU & PE with intention to use e-channels

	Beta (β)	t-value	p-value	R	R <sup>2</sup>	F-value	F-sig	Durbin Watson
<b>Model 1</b>								
<b>Constant</b>		13.033	0.000	0.630	<b>0.397</b>	361.651	<b>0.000</b>	<b>1.853</b>
Perceived Usefulness	<b>0.481</b>	18.543	<b>0.000</b>					
Perceived ease of use	<b>0.250</b>	9.623	<b>0.000</b>					

Model 1 predictors: (Constant), perceived Usefulness, perceived ease of use  
 Dependent Variable in Model 1: Intention to use. Significant at 0.05 level

Source: Field study, 2016

**Table 4.18b: regression analysis of PU, PE, innovativeness & PR with intention**

	Beta ( $\beta$ )	t-value	p-value	R	R <sup>2</sup>	F-value	F-sig	Durbin Watson
<b>Model 1</b>								
<b>Constant</b>		8.910	0.001	0.636	<b>0.404</b>	185.468	<b>0.000</b>	<b>1.849</b>
<b>Innovative-ness</b>	0.082	3.116	<b>0.004</b>					
<b>Perceived usefulness</b>	0.466	17.778	<b>0.001</b>					
<b>Perceived ease of use</b>	0.220	7.926	<b>0.001</b>					
<b>Perceived Risk</b>	-0.015	-0.574	-0.607					

Model 1 predictors: (Constant), Innovativeness, Perceived usefulness, perceived ease of use, perceived risk

Dependent Variable in Model 1: Intention to use. Significant at 0.05 level

Source: Field study (2016)

**Table 4.18c: Model Summary when PU&PE are the predictors**

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	606.914 <sup>a</sup>	.160	.311

Source: Field study, 2016

**Table 4.18d: Model Summary for the six predictors**

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	570.336 <sup>a</sup>	.188	.364

Source: Field study (2016)

As the result of the regression analysis in table 4.18a shows regressing ‘intention to shop’ against PU and PE as predictors (when PR and innovativeness are controlled) generated coefficient of determination (R<sup>2</sup>) of 0.397 which signifies that the model specified by PU and PE accounted for 39.7% of the variance in e-shopping intention. The F-value of 361.651 is significant at p<0.001, which indicates that the regression model is fit to predict e-shopping intention. The model parameters for the two predictors (PU and PE) show that the standardized beta values are positive with an associated significant p-values (p<.001), thus, indicating that the effects of PU and PE on e-shopping intention are both positive.

The result in table 14.18b gives the result of the analysis when perceived risk and innovativeness are introduced into the equation. As this table shows the new coefficient of determination ( $R^2$ ) is 0.404 which shows that the four predictors – PU, PE, PR and innovativeness account for 40.4 % variance in respondents' intention to shop online; with F-value of 185.468 which is significant at  $p < 0.001$ , thus, indicating the fitness of the regression model to predict e-shopping intention. Though the model parameters for the four predictors show that the standardized beta values are mixed, with three predictors having positive and significant p-values ( $p < .001$ ), while one of the predictors, perceived risk, has a negative and insignificant standardized beta value; yet there is improvement in  $R^2$  moving from 39.7% to 40.4% (a tangential improvement of 0.7%) when the additional two predictors were introduced.

Results presented in tables 4.18c and 4.18d are the outcomes of the assessment of the impact of the six predictor variables on respondents' likelihood to report intention to engage in online shopping using direct logistic regression. In table 4.18c, the impact of only PU and PE were assessed. From the table, it can be seen that the model generated by these two predictors explained between 16 % (Cox and Snell R squared) and 31.1 % (Nagelkerke R squared) of the variance in respondents' online shopping intention. Table 4.18d, on the other hand, shows the result of the analysis when the remaining four predictors- socio-demographics, product type, innovativeness and perceived risk, were introduced into the equation. Again, as can be seen from table 4.18d, the model as a whole explained between 18.8 % (Cox and Snell R squared) and 36.4 % (Nagelkerke R squared) of the variance in respondents' intention to shop online. Again, these results show that the introduction of the four predictors improved the model as Cox and Snell  $R^2$  rose by 2.8% and that of Nagelkerke rose by 5.3%.

In summary, when ‘intention to shop’ was regressed against PU and PE, the resulting  $R^2$  is 0.397, however, when innovativeness and perceived risk were added to the equation, this improved the  $R^2$  with 0.007 to 0.404. Also, using logistic regression analyses, PU and PE were found to account for between 0.16(Cox and Snell  $R^2$ ) and 0.311(Nagelkerke  $R^2$ ), variance in ‘intention to shop’ however, when socio-demographics, product type, innovativeness and perceived risk, were introduced into the equation, Cox and Snell  $R^2$  improved with 0.028 to 0.188 while Nagelkerke  $R^2$  improved with 0.053 to 0.364.

But how statistically significant are these improvements (ie, 0.007, 0.028 and 0.053)? To check this F-statistic is used. As suggested by Field (2013) the significance of  $R^2$  can be ascertained with the following equation:  $F = \frac{(N-k-1)R^2}{k(1-R^2)}$  where, N = Number of respondents, K= number of predictors,  $R^2$  = Coefficient of determination in the model.

To check the statistical significance of the improvement in Nagelkerke  $R^2$ , using the F-statistic will be: N= 1100, k=6,  $R^2 = 0.053$ .

$$F = \frac{(1100-6-1)0.053^2}{6(1-0.053^2)},$$

$$= \frac{57.929}{5.682}, = 10.20.$$

F = 10.20.

Also, results show the F-statistic when  $R^2 = 0.028$  to be 5.27; and when  $R^2 = 0.007$ , F = 1.93 (see the full computation of the F-statistics in appendix N). These results when compared to the null hypothesis that  $R^2$  is zero, show that it is significant especially as Field (2013) has argued that a good model should have an F-ratio at least greater than 1.

Based on these results, H<sub>07</sub> is rejected and conclusion reached that the infusion of socio-demographics, product type, innovativeness and perceived risk into technology acceptance model (TAM) does significantly improve its predictive capacity in the domain of online shopping.

### Summary of Results of Hypotheses Testing

Table 4.19: Summary of results of Hypotheses testing

Hypotheses Tested	Outcome
H <sub>01</sub>	Mixed Result
H <sub>02</sub>	Rejected
H <sub>03</sub>	Rejected
H <sub>04</sub>	Rejected
H <sub>05</sub>	Rejected
H <sub>06</sub>	Rejected
H <sub>07</sub>	Rejected

Source: Researcher's compilation

## 4.5 Summary and Discussion of Findings

Following the analyses of generated data, this thesis produced the following findings:

- i. Socio-demographic variables such as gender, age, education level and income hold differential effects on e-shopping acceptance in Nigeria. Whilst gender, education level and income were found to hold insignificant influence on consumers' willingness to engage in online shopping, age, on the other hand, was found to have a significant and moderate effect on consumers' intention to shop online.



The finding of this thesis on gender is at variance with the results reported by Hasim *et al.*, (2009), Zhou *et al.*, (2007), Stafford *et al.*, (2004), Brown *et al.*, (2003), Rodgers and Harris (2003), Alreck and Settle (2002), Van Slyke *et al.*, (2002), Donthu and Garcia (1999), Korgaonkar and Wolin (1999), Levy (1999), and Li *et al.*, (1999) which showed that men exhibit more positive attitude towards online shopping than women. Also, this study differs from those of Pastore (2001), Burke (2002) and Li *et al.*, (1999) which reported that on the contrary, female consumers that engage in online shopping do so more frequently than men.

Two major reasons could be adduced for not finding gender effect on e-shopping in Nigeria. The first being that unlike in the past such technologies as smartphones, tablets etc are now readily available and affordable, and can be easily manipulated by ordinary people who can put them to different uses. This situation tends to provide a level playing ground for both sexes. The second reason could also be attributed to the changing role of both women and men in the present day Nigerian society. Nowadays, Nigerian women are competing with their male counterparts in all spheres of life including in the ownership and use of technology. Many women in Nigeria harbour the mindset that “whatever a man can do, a woman can even do better”. On the other hand, more men now engage in roles (such as shopping for their families) which were hitherto considered feminine.

On education level, while the findings of this thesis is analogous to the results of Haque *et al.*, (2006) which reported no conclusive evidence that education level is an important predictor of online shopping behaviour, it is contradictory to the works of Li *et al.*, (1999), Teo (2006) and Case *et al.*, (2001) which found among others, that

education level is a powerful predictor of Internet purchases among university students.

Again, the insignificant effect of education level on online shopping as found in present study, can be explained by the fact that since Nigerian returned to democratic governance in 1999, successive governments beginning with President Olusegun Obasanjo (who introduced computerize Nigerian programme with the aim of making personal computers available at schools and homes), have embarked on programmes to make Nigeria and Nigerians computer compliant. These efforts have resulted in growing investments in related areas of information and communication technology (ICT) which have made Internet infrastructure and knowledge available and affordable and as a result, Internet knowledge has greatly improved in Nigeria particularly for students and the working class who were used as samples for this study.

On income, the findings of this research differ from the reports of such previous studies as Monsuwe *et al.*, (2004), Haque and Khatibi (2005), Haque *et al.*, (2006), Harn *et al.*, (2006), Sulaiman *et al.*, (2008) and Hasim *et al.*, (2009) which found that income has positive effect on e-shopping intentions. This effect as observed by Lohse *et al.*, (2000) is because higher household incomes are often positively correlated with possession of computers, Internet access and higher education levels of consumers.

While the above argument advanced by Lohse and his colleagues could be tenable in the past, advancements in technology and competition have presently led to production of cheap and affordable personal computers, tablets and mobile phones with Internet capability such that these technologies would no more be seen as the

preserve of those with high income. In fact as noted by Bigne, Ruiz and Sanz (2005), “In less than 15 years, the mobile phone has become an essential part of our daily lives. It is no longer a luxury item and has become one of the most commonly used daily consumer goods throughout the world.” Given this scenario, the researcher believes that the availability of affordable technology in the Nigerian context accounted for the erosion of income effect on e-shopping intentions.

Age was found to wield a moderate and significant effect on e-shopping intention in this study with older respondents aged between 31-35 years having higher intentions to shop online than respondents who are 25 years and below. This result is in agreement with the findings of Stafford *et al.*, (2004) who found a positive relationship between age and intention to shop online. This work on the other hand differs from Joines *et al.*, (2003) who reported negative relationship between age and online shopping intentions with younger people being significantly more likely to shop online than older ones. Also, the present study differs from Rohm and Swaminathan (2004) who found no effect of age on online purchasing.

Zhou *et al.*, (2007) observe that the discrepancy in the outcomes of studies on age and e-shopping could be attributed to the different age spans adopted by researchers and the narrowing gap between online and traditional shoppers. However, the outcome of this study could be explained by the fact that respondents who are below 25 years may be more involved with the hedonic aspect of e-shopping than their older counterparts who may be more interested in the functional aspect.

- ii. The second finding of this study is that product types available online do significantly influence e-shopping intention with credence goods having the highest effect on e-shopping than search goods and experiential goods in that order.

This result is similar to findings in literature that product categories (types) influence online shopping intentions, even though several of these studies such as Peterson *et al.*, (1997), Liang and Huang (1998), and Phau and Poon (2000) used different product categorization bases like product cost and purchase frequency, shopping effort, product characteristics such as durability, tangibility, etc, value proposition and degree of differentiation; level of standardization and familiarity of product which differ from level of information asymmetry employed in this study.

Girard *et al.*, (2006) which adopted the same product categorization (search, experiential and credence) as the present study equally reported effect of product types on consumers' online purchase preferences. However, the direction of effect differs. While Girard *et al.*, (2006) findings show that the search category products are more likely to succeed than the experiential and credence category products the result of the present study indicates that credence products have the greatest effect.

The difference in findings of the two studies could be explained by differences in context and methodology. For example, in Girard *et al.*, (2006), experiential category products were broken and tested in two separate groups, while in the present study one experiential category products was tested. Also, while clothing was classified as credence product in this study, it was used as an experiential good in Girard *et al.*, (2006).

- iii. The next finding of this thesis is that perceived risk significantly mediates the relationship between perceived usefulness and e-shopping intention.

In past studies the role of perceived risk has mainly been presented as an antecedent to PU in technology acceptance model. Studies by Jarvenpaa *et al.*, (1999), Lee *et al.*,

(2001) and Wu and Wang (2005) toed this line. However, modelling PR as being an antecedent to PU has been queried by Im *et al.*, (2008) who avers that doing so amounts to seeing PR and PU as related when they are independent of each other. PR being independent of PU implies that PR can assume different role(s) in the technology acceptance model and therefore this thesis investigated the mediatory role of PR in TAM.

The outcome of this inquiry agrees with the findings of Im *et al.*, (2008) that PR attenuates the relationship between PU and intention. However, both studies differ in direction and methodology. Im *et al.*, (2008) used an experimental study that involved group task, and employed structural equation modeling technique to test PR as a moderator of the relationship between PU and intention to use communication technology, while the present study employed data that were generated through survey and analyzed through Hayes (2012)process tool, and modelled PR as a mediator in the relationship between PU and intention to shop online. Both studies involved tertiary students.

Im *et al.*, (2008) reported that PR moderates the effects of PU on Behavioural Intention (BI) in TAM; for users with higher perception of risk in using the technology, PU had smaller effects on BI than those with lower perception of risk. In the present study, result shows that when PR was modelled as a mediator, it attenuated the effect of PU on respondents' intention to shop online from 0.5267 to 0.5009. These results are evidences that PR may be playing multiple roles in TAM than previously assumed by researchers.

- iv. Another finding of this thesis is that perceived risk significantly mediates the relationship between perceived ease of use and e-shopping intention. As in the case of PU discussed above, PR has also generally been presented as being antecedent to PE in most TAM studies with very few others thinking otherwise.

In their study which was referred to earlier, Im *et al*, (2008) also found that PR moderated the relationship between PE and intention but unlike in the PU result, PE was found to have a bigger effect on BI for the high perceived risk group than for the low perceived risk group. Though, this result is not directly comparable to the result of the present study, however, it is a pointer to the different roles PR could assume in the TAM model. The present study shows that PR mediated the relationship between PE and intention to shop online by attenuating the effect of PE on online shopping intention from 0.4424 to 0.4065.

- v. Another finding of this thesis is that the combined effects of innovativeness, perceived usefulness, perceived ease of use and perceived risk significantly predicted consumers' online shopping intention.

This result is in consonance with previous studies spanning several research domains which have reported that each of the predictors has an effect on intention. Kamarulzaman (2007) and, Kim and Forsythe (2010) have reported that innovativeness showed significant positive influences on such beliefs as perceived usefulness, and ease-of-use of online shopping. For perceived usefulness and perceived ease of use such studies as Childers *et al.*, (2001), Kim *et al.* (2003), McCloskey (2004), Bisdee (2007) and Barkhi *et al.*, (2008), have equally reported positive effect of PU and PE on intention through attitude. On the contrary, studies on

the effect of perceived risk on intention to use technology have reported negative effects (see Pavlou, 2003; Kamarulzaman, 2007).

In spite of the results reported in TAM studies it is clear that this model has not totally explained technology adoption behaviour, and as observed by Legris *et al.*, (2003), TAM is imperfect as there remains a wide variation in the predicted effects in various studies with different types of users and systems. While this seeming drawback of TAM is not unexpected, Taiwo and Downe (2013) aver that in social science disciplines the issue of variety in statistical significance is inherent because of complexity in human behaviour. Also, Lim and Ting (2012) in agreement with this line of thought argued by Taiwo and Downe (2013), credits TAM as a research model which has been consistent in explaining a substantial portion of variances between behavioural intention and actual behaviours in researches focused on purchase of technology related products.

The inability of TAM to completely explain the variances in human technology acceptance has therefore created the overriding need to continue to extend TAM as researchers search for an in-depth knowledge of precursors to technology acceptance. In the domain of e-shopping, TAM has been extended with the integration of such constructs as trust and perceived risk (Pavlou, 2003), personal characteristics, trust and perceived risk (Kamarulzaman, 2007), innovativeness and technology anxiety (Kim & Forsythe, 2010), personal characteristics, prior shopping experience, perceived enjoyment and perceived risks (Tong, 2010).

Though, given that these extended versions of TAM studies have adopted different methodological and analytical approaches which have made direct comparisons difficult, yet outcomes of these studies point to the same direction in the effects of

these factors on intention to engage in online shopping. Essentially also, the findings of this thesis are in the same direction of previous studies which confirm that consumers' personal trait of innovativeness, perception of online stores as useful channels for effective and efficient shopping activities, and perception of web features provided by these online stores as easy to manipulate (in terms of navigability and usability) will enhance their willingness to shop online in the future. Conversely, consumers' belief that shopping online is risky will mitigate their intention to engage in future online shopping activities.

- vi. It is also the finding of this study that, five of the predictors, namely, age, product type, perceived usefulness, perceived ease of use and innovativeness make significant contributions to the model while the fourth predictor, perceived risk makes an insignificant contribution to the model.

This result portrays the importance of consumer innovativeness, age, product type, perceived usefulness and ease of use in the adoption of e-shopping by tertiary students in Lagos State, Nigeria. When the direct effect of perceived risk on e-shopping intention was measured, it was found to be significant (see Tables 4.17g and 4.17i). However, this effect was eroded when age, product type, innovativeness, PU and PE were introduced into the equation (see Tables 4.16f and 4.17f). This result implies that for innovative shoppers between ages 31 to 35 years, perception of risk diminishes when shopping online for credence goods if they consider online sales outlet as both useful and easy to use.

- vii. The student online shopper, either male or female, is not influenced by level of education attainment and income. However, he/she may be influenced by his/her age



as online shoppers who are aged 31-35years intend to engage in more online shopping activities than those who are 25 years old or younger. While male students who aged 31-35years have higher propensity to engage in e-shopping than their female colleagues, female students who are 25 years or younger, on the other hand, intend to shop online more than their male counterparts. In both age groups however, the females are more likely to shun online shopping than males.

The student e-shopper is equally affected by the product type available online as they are more willing to shop mostly for credence goods than they would shop for search goods or experiential goods. These e-shoppers are not found to be dissuaded in their online shopping intentions by the risk associated with online shopping when their perception of risk is attenuated by higher levels of innovativeness, perceptions of usefulness of the e-shopping channels and the ease of manipulation of the e-tailers' web pages.

#### **4.6 Summary of the Chapter**

In this chapter the results of data analyses were presented to cover profile of respondents based on type of programme; profile of respondents based on socio-demographics; and results of hypotheses testing. Finally, in this chapter, summary and discussion of findings was done.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.**

#### **5.0 Preamble**

In this chapter summary of thesis, conclusions drawn from findings, implications for theory and practice, recommendations, contributions to knowledge, limitations of research and suggestions for further studies are presented.

#### **5.1 Summary**

At the introductory chapter of this thesis it was highlighted that since the current democratic dispensation resumed in 1999, successive governments have through policies such as “computerize Nigeria” and CBN’s cashless policy, and massive investments in the ICT infrastructure boosted electronic commerce activities in Nigeria. This situation has attracted investors who have begun to establish whole online retail businesses. Also, conventional retail businesses are not left out in the exploitation of these seeming business opportunities provided by the availability of information and communication technologies.

However, given that e-shopping aspect of electronic commerce has had checkered history in the western world (see Kotler & Armstrong,2004; Schneider, 2008), it will amount to bad business decisions with negative and monumental consequences, to copycat western business

models/typologies to this part of the world without first understanding the precursors to its acceptance by the target market.

As literature revealed, past e-shopping failures resulted from business models that focused solely on technology, while totally neglecting consumers whose adoption/acceptance of these technologies was to drive success. This situation has fuelled the current interest of both researchers and practitioners in unraveling the drivers to acceptance and use of new technology in various domains. While several technology acceptance theories exist Davis (1989) technology acceptance model (TAM) has provided the fulcrum for most studies in this evolving area of research.

Though, TAM's constructs of perceived usefulness and perceived ease of use have been proven to consistently explain good percentage of the variation in acceptance of new technologies in different domains including e-shopping (see Lim and Ting, 2012). None of these studies has reported that the two constructs can/do account for 100 percent variance in new technology acceptance, a development which some authors have ascribed as a shortcoming to this model (see Legris, Ingham & Collerette, 2003). It is also important to note that the results of most of these studies have been limited by their non- African contexts. Hence, the need to extend TAM both contextually, and with additional factors in order to make it more robust and predictive (see Boateng, 2011; Venkatesh, 2000; Pavlou, 2003).

The above gaps provided the motivation for the present study which aims at investigating the drivers of tertiary students' acceptance of online shopping in Lagos State, Nigeria, through the modification of technology acceptance model (TAM) with the integration of socio-demographics, innovativeness, product type and perceived risk. Relevant literature and

methodology were reviewed and discussed in chapters two and three respectively. Data analyses and results presentation were done in chapter four.

As the results of this thesis have shown the four predictors infused to TAM improved its predictive capability in the domain of electronic shopping. While innovativeness, perceived usefulness and perceived ease of use acting singularly and collectively contribute significantly to e-shopping acceptance, perceived risk acting alone is found to inversely and significantly predict e-shopping acceptance, but becomes insignificant when in the same equation with the other predictors. Thus, the adverse effect of perceived risk on e-shopping acceptance is obliterated by the effects of innovativeness, perceived usefulness and perceived ease of use in predicting e-shopping acceptance. Further, findings of this thesis show that perceived risk does attenuate the relationships between perceived usefulness and e-shopping acceptance and that of perceived ease of use and e-shopping acceptance. Also, among the socio demographic variables studied, age was found to significantly affect e-shopping acceptance while the rest do not. Finally, product type was found to hold differential effects on e-shopping acceptance. Products with credence properties are best considered by consumers when shopping online, followed by goods with search properties while products with experiential properties are least considered.

## **5.2 Conclusions**

Given the findings of this study, the following conclusions are drawn:

- i. Age significantly affects intentions of tertiary students in Lagos state, Nigeria to engage in online shopping, while the other socio-demographic variables of gender, education level and income do not.

From the result of analysis on gender, on average, there is not much difference between both male and female participants' willingness to engage in online shopping. The difference between their intentions to use e-shopping outlets which is 0.11, 95% CI [-0.003, 0.221], was not significant  $t(1098) = 1.901, p=0.058$ .

Also, result of analysis on the effect of education level was insignificant. Welch F-ratio (4, 84.705) = 2.467,  $p= 0.051$ , and effect size estimation,  $\omega = 0.08$ , providing evidence that even though levels of education showed a medium-sized effect on intentions to shop online its impact still remains statistically insignificant. This insignificant effect was further buttressed by the post hoc test (see Table 4.5e) where a Dunnett t two-sided multiple comparison post hoc tests show that the mean score comparisons of respondents' intentions to engage in e-shopping returned insignificant results for all pairs of education levels.

On income, result of analysis indicates that income of respondents have an insignificant effect on their intentions to shop online. This is further corroborated by the small-sized effect detected ( $\omega = -0.05$ ). Again, a Dunnett t two-sided multiple comparison post hoc tests (Table 4.6e), revealed that all the mean score comparisons of respondents' intentions to use online outlets for shopping returned insignificant results for all pairs of income.

However, contrary to the outcomes of the analyses on the effects of socio-demographic variables of gender, education level and income on e-shopping acceptance, age was found to have an effect on e-shopping acceptance. Analysis of data on age produced the following results: Welch F (4, 250.255) = 2.577,  $p= 0.038, \omega = 0.08$  which provided evidence that a significant difference exist in the intentions of

at least one pair of these age groups to shop online. Through a Dunnett t two-sided multiple comparison tests (Table 4.4e), it was found that respondents who are twenty-five years of age and below and those within the age bracket of thirty-one to thirty-five years of age differ significantly in their e-shopping intentions. Based on these findings it is concluded that apart from age, the other socio-demography variables do not significantly affect the desire of tertiary students in Lagos state to engage in online shopping.

- ii. The type of products sold online influences the intentions of tertiary students in Lagos state to accept e-shopping. As shown by the findings of this study, respondents preferred to shop online for search goods more than they would shop for experiential goods. Comparatively, also, respondents intend to purchase more credence goods than experiential goods from the Internet. The purchase of credence goods was better favoured by respondents than the purchase of experiential goods online. Among the three product types, credence goods represented by clothes and computer software got the most acceptance for future online purchase by respondents. Next to credence goods in acceptability is search goods (wrist watches and books) while experiential goods represented by beer and perfume was the least product type acceptable to respondents for online purchasing.
- iii. The perception of Internet as useful channel for shopping by tertiary students in Lagos state is attenuated by their risk perception of these online outlets. Consumers' do harbour multiple shopping motivations which can be grouped into utilitarian and hedonic motivations. While the hedonic motivation for shopping covers the enjoyment part of the shopping process, the utilitarian motivation is concerned with the functional aspect such as purchasing products in a timely and an efficient manner.

The seeming positive disposition that a consumer holds in the capability of the technology to lead to the achievement of his shopping motivation is reflected within the TAM framework as Perceived usefulness which Davis, et al., (1989) posit to be a major influence of attitude on the use of technology. However, conclusion can be reached based on the findings of this study that the tendency for consumers to be positively inclined towards online shopping outlets in the fulfillment of these shopping motivations could be jeopardized by their risk perception of these shopping channels.

- iv. The perception of tertiary students in Lagos state that it is easy to engage in e-shopping is mitigated by their risk perception of online shopping channels. In TAM, Davis, *et al.*, (1989) conceptualises 'perceived ease of use' as the degree to which a person believes that using a new technology will be effortless both physically and mentally. Subsequent studies show that users attempt to minimize effort in their behaviours, thus supporting a relationship between perceived ease of use and usage behaviour (see Payne, Bettman, & Johnson 1993; Todd & Benbasat 1991, 1992, 1993, and 1994).

In the area of e-commerce, Buton-Jones and Hubona (2005) similarly identified ease of learning and user skillfulness at using prevalent systems such as web technologies and interfaces on online shopping sites, as valid determinants of users' opinion to a technology being easy to use. This agrees, as well, with Childers *et al.*, (2001) observation that online merchants who are able to provide online shopping sites which are clear and understandable, with less mental effort requirement, which allows consumers to shop without encumbrances results in ease of use perceptions in users'

minds. Based on the findings of the present study however, it is concluded that this perception of ease of use would be mitigated when consumers perceive these e-channels to be risky.

- v. As was shown in chapter four the combined (overlapping) effect of innovativeness, perceived usefulness, perceived ease of use and perceived risk, explains 19.21% variance in shoppers' intention to buy online. The F-statistic which is calculated to be 65.09 suggests that the overlapping effect of these predictor variables on consumers' intention to shop online is significant. Based on these findings, conclusion is reached that the combined effects of innovativeness, perceived usefulness, perceived ease of use and perceived risk do significantly predict consumers' online shopping intention.
- vi. Based on the findings of this study and as shown in Tables 4.17g and 4.18a, when in the same equation, innovativeness, perceived usefulness and perceived ease of use are more important in predicting e-shopping intention than perceived risk. Thus, implying that though perceived risk has a negative and significant effect on e-shopping intentions when acting alone, this effect is weakened when a shopper is innovative and perceives Internet shopping channels as both useful and easy to use. It is therefore concluded that for innovative consumers who find online shopping useful and easy to use, perception of risk will not be strong enough to deter them from engaging in such activity.
- vii. Also, based on the findings of this study, the student e-shopper in Lagos state, Nigeria, either male or female, is neither influenced by the level of education attainment nor by income. However, he/she may be influenced by age as online



shoppers who are aged 31-35years intend to engage in more online shopping activities than those who are 25 years old or below.

- viii. Finally, given the findings of this study, it is concluded therefore, that such factors as age, product type, innovativeness and perceived risk can be used to extend Davis (1989) technology acceptance model. These factors when added to TAM's constructs of perceived usefulness and ease of use, are precursors to online shopping acceptance of tertiary students in Lagos State, Nigeria and do make the technology acceptance model more robust in predicting technology acceptance in the domain of e-shopping.

### **5.3 Implications**

This study and its findings bear implications for both theory and practice. For theory, the conceptual model for this thesis helps extend the predictive capability of Davis' technology acceptance model (TAM) in the area of electronic shopping. The additional factors of socio-demographics, innovativeness, product type and perceived risk which are infused into TAM's model in combination with TAM's original constructs of perceived usefulness and ease of use help elucidate the drivers of consumers' online shopping acceptance. This study has provided evidence that for innovative online shoppers perceived usefulness and ease of use are more important than perceived risk. Also, on the current debate on the role of perceived risk in the technology acceptance model, this study has shown that PR do indeed attenuate the effects of PU and PE on e-shopping intention, thus, extending the frontier of knowledge in this regard.

For practice, the profile of the student online shopper in Lagos, Nigeria, developed in the present study has widened the consumer information available for a successful e-shopping business in Nigeria. As a result, e-tailers desirous of operating in Nigeria need not depend

any more on the socio-demographic information of the Western and Asian online shoppers which have hitherto been used due to the dearth of information on the Nigerian e-shopper. Also, understanding the triggers of online shopping acceptance will assist the promoters of these online businesses in crafting effective marketing strategies to win the patronage of online shoppers and in turn attain both marketing and corporate objectives.

#### **5.4 Recommendations**

Based on the findings and conclusions reached in this study the following recommendations are made:

- a. As this study has shown, perceived risk mitigates the effects of perceived usefulness and perceived ease of use on consumers' willingness to engage in online shopping. Consequently, when shoppers have been convinced of how useful and easy it is to shop online they may still be discouraged by perception of associated risks. Practitioners must therefore come up with several strategies that will reduce or eliminate such fears. This study recommends that managers of these firms must ensure favourable product return policies, provision of both customer and product reviews, and protection of customer information and privacy. Also, the current practice of payment on delivery as adopted by most online merchants in Nigeria should be sustained.
- b. Given the importance of perceived usefulness and perceived ease of use as shown in the study, practitioners must intensively and consistently communicate to the consumers the advantages associated with online shopping and at the same time make their web sites ease to navigate and use.
- c. One of the findings of this study is that the intentions of consumers to shop online differ according to product types. Out of the three product types (search, experiential and

credence) most consumers are willing to shop for credence goods and least for experiential goods. This scenario therefore requires that practitioners stock more of the type of products that shoppers are willing to buy online. Again, there is need for practitioners to engage in market segmentation using product type as a segmentation base so as to enable focal targeting of marketing programmes to relevant markets.

- d. Given the prevalence of personal digital assistants and other mobile devices such as smartphones and tablets in Nigeria, chances are that consumers would engage in online shopping through this means. As current report shows, even though desktops/ laptops are still dominant means of e-commerce transactions, especially during the week days, there is rise in mobile device based transactions accounting for about 18% in Africa;unfortunately, only about 13% of online shoppers rate their experience with smartphones as 'very good' (Nwokpoku, 2016). Therefore, online vendors should invest in contemporary technologies such as optimization technologies and product virtualization technologies (PVT). Optimization technologies enable a web page and its contents to effortlessly and fully open in all platforms such that vital marketing and product information are not lost or distorted when consumers shop via small- sized platforms. Also, the provision of PVTs in the vendors' online environment will help in multidimensional examination of products. PVTs will aid shoppers in trying out complicated product features that cannot be understood by viewing since such technologies embodies 3D technologies with the capability of enabling shoppers to do such things as turn products around, change product colours, open lids, see inside of products and some other simulated functions.
- e. Consumers' profile combined with their socio-economic information constitutes one of market segmentation bases which practitioners employ in the development of both

strategic and tactical approaches for targeted markets. It is therefore recommended to managers of online businesses in Nigerian to anchor their marketing programmes to match local consumer profile and socio-economic information as developed by this study and other similar studies. Adherence to this will result in better and more effective marketing programmes that will lead to attainment of marketing and corporate goals.

- f. As the result of this study has shown, risk concerns dissuade intending patrons from engaging in online shopping no matter their beliefs about how easy and useful it is to shop online. Some of these concerns could be real. Government should enact laws to protect online shoppers against sharp practices of some of these online vendors in such areas as protection of shoppers' financial and private information which customers supply inadvertently when they shop and/ effect payments online, by making it a mandatory requirement for the deployment of encryption technologies by vendors in their online environment. Such law(s) should prohibit vendors from trading on customers' sensitive information without customers' permission.

## **5.5 Contributions to Knowledge**

This thesis has made the following contributions to knowledge:

- i). The conceptual model developed for this study contributes to theory development by extending the predictive capability of Davis' technology acceptance model (TAM) in the area of electronic shopping with the infusion of new constructs such as perceived risk, innovativeness, product type and socio-demographics.
- ii). Perceived risk (PR) has mostly been presented in past studies as an antecedent to TAM's constructs of perceived usefulness and perceived ease of use. This study has shown that this is not always the case as it has provided evidence that PR do play multiple roles in TAM than previously assumed by researchers.

- iii). This study has developed a profile of an e-shopper in Nigeria which shows that relative to other age groups, tertiary students who are twenty five years old or below are likely to accept e-shopping differently from their counterparts who are aged 31-35years. Overall, those who are 31-35years have higher propensity to shop online than those who 25years or younger; however, among those aged 31-35years, the males have higher intention to shop online than the females, while to the contrary, more females than males who are aged 25 years old or below have higher tendency to engage in e-shopping. Finally, in both age groups, females have higher odds to reject e-shopping. For practice therefore, this profile as developed can be counted among consumer information available for a successful e-shopping business in Nigeria.
- iv). This thesis has provided evidence that products categorized as credence goods in Nigeria will attract better patronage from tertiary students than the ones categorized as search and experiential products.

## **5.6 Limitations of Research**

This research just like every other research has its limitations which must be acknowledged, and as Dolen, Ruyter and Lemmink (2004) posited, part of the strength of any research is in the recognition of its limitations.

The first limitation of this study emanates from the instrument used to gather data. A closed-ended and structured questionnaire was used to elicit information from respondents which mitigated the ability of the researcher to probe responses more deeply. Added to this were the issues of respondents not filling the questionnaire properly and honestly which are drawbacks associated with self-report. When a questionnaire suffers the problem of self report, it triggers systematic response distortion which raises questions about the conclusions drawn from such

a study and the reliability and validity of the measures used in the instrument are called to question (Shammout, 2007).

To overcome these issues, first, the researcher as recommended by Hair *et al.*, (2003) adapted validated scales to measure the underlying constructs. Second, a seven-point Likert scale which is observed to suffer minimal loss of reliability when compared to a five-point Likert scale was adopted (Streiner *et al.*, 2015). Third, the issue of systematic response distortion was addressed by ensuring that the questionnaire was designed in a way that made it easy for the respondents to understand the questions in order to forestall response bias. Fourth, after developing the questionnaire, it was pre-tested to ensure that it is both valid and reliable. Finally, the researcher appealed to respondents to be as honest as possible in their responses while filling the questionnaire.

The second limitation is that students were used as the respondents for the study. Studies employing student samples have mostly advised that caution be exercised in generalizing the results (Saade & Bahli, 2005). However, for this study, the subject matter is appropriate to students as online shopping is an activity that requires some level of literacy and income. The bias that could result from lack of income was controlled by the inclusion of pocket monies and cash gifts and the inclusion of students enrolled in part time studies of all the programmes of the tertiary institutions, as most part time students are engaged in one type of employment or the other and so do earn income. Hence, while these results may be idiosyncratic to this particular setting, its replication in other settings with different samples will no doubt aid the understanding of how well these findings generalize.

The third apparent limitation of this study is that the data on e-shopping acceptance was assessed from respondents' intention to shop online as against data from actual online

purchase. The effect of this limitation on the study is however, ameliorated by the existence of several empirical evidence suggesting enough strong causal link between intention and actual behaviour (Sheppard, Harwick & Warshaw, 1988; Jackson, Chow & Leitch, 1997).

Finally, this study presented a cross-sectional analysis of the data (which was gathered at a single point in time, much like a “snap-shot”), as against a longitudinal analysis which would have given insight to causality, a better benchmark in establishing acceptance. These limitations though, are not judged to weaken the reliability of the results of this study.

### **5.7 Suggestions for Further Studies**

- i). When people shop offline either in formal retail outlets such as supermarkets or in traditional open markets, shopping environments provide avenues for shoppers’ physical interactions and socializations which are not available through this new means of shopping. How the absence of such interactions and socialization affects the consumer’s online shopping acceptance in Nigeria is suggested for further study.
- ii). Age and product type were found to affect e-shopping intention in this study. However, the relationship between age and product type were not investigated. It is therefore suggested for further study the effect of age on type of product shopped online.
- iii). Finally, the relationship between age and innovativeness in the domain of online shopping is equally, suggested for further investigation.





## **APPENDIX A**

### **LIST OF TERTIARY INSTITUTIONS IN LAGOS**

#### **UNIVERSITIES**

University of Lagos

Lagos State University

Caleb University

Pan-African University

Redeemers University

#### **POLYTECHNICS**

Yaba College of Technology

Lagos State Polytechnic

Grace Polytechnic

Lagos City Polytechnic

Nigerian Institute of Journalism

Ronik Polytechnic

Wolex Polytechnic

#### **COLLEGES OF EDUCATION**

Federal College of Education, Akoka

Adeniran Ogunsanya College of Education

Michael Otedola College of Primary Education

St Augustine College of Education, Akoka

Topmost College of Education

Bayo Tijani College of Education

Royal City College of Education

Cornerstone College of Education

Source: The Joint Admissions & Matriculation Board (JAMB) 2015/2016 eBrochure

**APPENDIX B**  
**MAIN QUESTIONNAIRE**

Dept. of Business Administration

School of Post Graduate Studies

University of Lagos

Akoka, Lagos.

12th January, 2015

Dear Sir/Madam,

**RESEARCH QUESTIONNAIRE ON E-SHOPPING ACCEPTANCE**

I am a doctoral student of Business Administration of University of Lagos conducting a research on internet shopping in Nigeria.

Kindly assist by completing the questionnaire. Please, be assured that all information obtained from this questionnaire will be treated as confidential and for academic purpose only.

I shall greatly appreciate your cooperation as an immense contribution to promoting the cause of learning and therefore appeal for your time and honest responses to the questions contained in this questionnaire.

Thanks

Yours faithfully

**Kennedy O. Nwagwu**

## SECTION 1

**INSTRUCTION: Please read this section carefully and state the level of your agreement through the seven options provided in this section.**

**7 = Strongly Agree (SA), 6= Agree (A), 5=Somehow Agree (SHA), 4 = Neutral (N),**

**3 = Somehow Disagree (SHD), 2= Disagree (D), 1 =Strongly Disagree (SD).**

S/N	Innovativeness	SA 7	A 6	SHA 5	N 4	SHD 3	D 2	SD 1
1	Generally, I am among the last in my circle of friends to visit a retailer's new web site when it appears online.							
2	Compared to my friends, I search for relatively little information on the internet.							
3	If I heard that a new retail site was available on the Web, I would be reluctant to shop from it.							
4	I know about new retail Web sites before most other people in my circle of friends do.							
5	Generally, I am the last in my circle of friends to know of any new retail Web sites.							
6	I will visit a new online retailer's Web site even if I have not heard of the retailer before							
	<b>Perceived Risk</b>							
7	There is high chance I will lose money when I shop online.							
8	Using an internet-bill-payment service will subject my account to potential fraud.							
9	Using an internet bill-payment service will subject my bank account to financial risk							
10	The security systems built into online shopping web pages are not strong enough to protect my bank account details							
11	The bill-payment system of online retailers may not perform well and can process payments incorrectly							
12	Internet hackers (criminals) might take control of my bank account if I used it to shop online.							
13	Shopping online will not fit in well with my self-image or self-concept							
14	The usage of internet to buy products would lead to a psychological loss for me because it would not fit in well with my self-image or self-concept							

15	Buying goods online would lead to a social loss for me because my friends and relatives would think less highly of me.							
16	Shopping online would lead to a loss of convenience for me because I would have to waste a lot of time waiting for my goods to be delivered							
17	I will lose a lot of time browsing and searching retailers' web pages for my desired product and other purchase information							
18	Overall, shopping online is very risky							
	<b>Perceived usefulness</b>	<b>SA</b>	<b>A</b>	<b>SHA</b>	<b>N</b>	<b>SHD</b>	<b>D</b>	<b>SD</b>
19	Using internet will enable me to accomplish my shopping tasks more quickly							
20	Using the internet will make it easier for me to shop							
21	Overall, I find the internet useful for my shopping activities							
22	I think internet will improve my shopping performance (e.g. save time or money).							
23	I will be able to increase my shopping productivity when I shop online (e.g. make purchase decisions or find product information within the shortest time frame).							
24	I will be able to increase my shopping effectiveness when I shop online (e.g. get the best deal or find the most information about a product).							
	<b>Perceived ease of use</b>							
25	It will be difficult to learn how to use the internet to achieve my shopping tasks more quickly							
23	It will take me a long time to learn how to use the internet to do my shopping activities							
27	I may become confused when I use the internet for my shopping activities							
28	I will find it easy learning to use most online shopping sites							
29	I will find it easy to use most online shopping sites to find what I want							
30	It will be easier to compare products when shopping on online							
31	I feel that most online shopping sites will be flexible to interact with							

32	I will find most online shopping sites easy to use								
	<b>Intention to use</b>								
33	I think it would be very good to use the internet to search for product information								
34	It would be very good to use the internet to buy my goods								
35	In my opinion it would be very desirable to use the internet to inquire about my products								
36	It is desirable for me to buy my products online								
37	It would be much better for me to use the internet for my shopping activities								
38	Shopping on the internet is a good idea								
39	When I need to buy a particular product, I would search for an online retailer which has the product								
40	There is a good chance that I would purchase different products from an online retailer								

## SECTION 2

Product type

Please indicate your willingness to buy the following products from an online retailer

**1 =Will not buy, 2=May never buy , 3=Not sure I will buy, 4= May/may not buy, 5=Might buy ,6=May prefer buying, 7=will certainly buy**

S/N	Product	1	2	3	4	5	6	7
1	WRIST WATCH							
2	BOOK							
3	Beer							
4	PERFUME							
5	CLOTHE							
6	Computer software							

**Section 3: Respondents' Biographic-data**

**Instruction: Please tick your answer from the options provided in the spaces.**

1. Sex: Male ( ) Female ( )
2. Age group: 25 yrs & below ( ), 26 - 30 years ( ), 31 -35 years ( ), 36 - 40 year ( )  
41-50 years ( ) 51 years and above
3. Marital Status: Single ( ) Married ( ), Separated ( ), Divorced ( ), Widowed ( )
4. Highest Educational Qualification (note this is your last qualification prior to your present admission): O'Level ( ), OND /NCE ( ), HND/BA/BSC ( ), PGD/M.Sc/ MBA ( ) PhD ( )  
Others ( ) Please specify.....
5. Annual income (note this includes your pocket money, salary, cash gifts etc): #60,000-  
#215,999 ( ) #216,000-#500,000 ( ) #500,001 - #2,500,000 ( ) #2,500,001 -#5,000,000 ( )  
#5,000,001 - #10,000,000 ( ) #10,000,001 and above ( )
6. Type of programme enrolled in: Full time undergraduate ( ) Part time undergraduate ( )  
Full time Post graduate ( ) Part time Postgraduate ( ) Full time HND ( ) Part time HND ( )  
Full time ND ( ) Part time ND ( ) Full time NCE ( ) Part time NCE ( )  
Full time TTC ( ) Part time TTC ( )

**APPENDIX C**  
**STAGE 1 QUESTIONNAIRE**

Dept. of Business Administration  
School of Post Graduate Studies  
University of Lagos  
Akoka, Lagos.  
30th October, 2014

Dear Sir/Madam,

**RESEARCH QUESTIONNAIRE ON CLASSIFICATION OF GOODS**

The purpose of this study is to classify some consumer goods into search, experience and credence goods. To this end, a list of products is presented in this questionnaire which you are to place in one of these three categories.

The purpose for which this information is sought is purely academic. Please feel free to answer the questions honestly and promptly.

Thanks

Yours faithfully

**Kennedy O. Nwagwu**

**Instruction:** there are three sentences that are labeled A, B and C. Read these sentences and clearly mark in the provided box beside each product, the label that clearly matches your opinion regarding your willingness to purchase such a product. Please note that every listed product belong to a group and therefore must be labeled.

**A:** For this product I can always get relevant information about it before I buy/use it. Hence, I am confident I can buy this product even when I have not used/tried the product before.

**B:** For this product I can know it very well only after use, therefore, I will not have the confidence to buy this product unless I have used/tried it before.

**C:** It is not easy for me to understand this product. When I buy it, I am not always confident of my purchase even after use, because I need help to know whether the product is good or not.

S/N	PRODUCT	GROUP
1	Books	
2	Music	
3	Movies	
4	Computer	
5	Furniture	
6	Phones	
7	Car	
8	Refrigerator	
9	Television set	
10	Meat	
11	vegetables	
12	Fashion eye glasses	
13	Air conditioners	
14	Vegetable oil	
15	Fresh fruits	
16	Toys	
17	Bread	
18	Soft drinks	
19	Contact lens	
20	Tooth paste	
21	Wines	
22	Beer	
23	Perfumes	
24	Flowers	
25	Cosmetics	
26	Wrist watches	

S/N	PRODUCT	GROUP
27	Vitamins	
28	Clothes	
29	shoes	
30	Water dispensers	
31	Bed sheets	
32	Medicines	
33	bags	
34	Generator	
35	Engine oil	
36	Computer software	
37	Cement	
38	Fan	
39	Fire extinguisher	
40	Wiring cable	
41	Jewelleries	
42	Roofing sheets	
43	Camera	
44	insecticide	
45	Biscuits	
46	Home theatre	
47	Plantain	
48	A tin of milk	
49	Toiletries	
50	Dish washing soap	
51	Bed sheets	
52	Shoe rack	

75. Sex:    male[    ] female[    ]

76. Annual income

#500,000 and below	[    ]
#500,001 – 1,000,000	[    ]
#1000,001 and above	[    ]
No earnings yet	[    ]



**77. Type of study**

Full time undergraduate	[ ]
Part time undergraduate	[ ]
Full time post graduate	[ ]
Part time post graduate	[ ]

**78. Age range**

25 yrs and below	[ ]
26 – 40 yrs	[ ]
41 – 55 yrs	[ ]
56 yrs and above	[ ]

**79. Occupation/ where you work**

Civil servant/ national service	[ ]
Self-employed	[ ]
Not employed	[ ]
Private company employee	[ ]

## APPENDIX D

### CROSSTABULATION ANALYSIS OF AGE, GENDER AND INTENTION

#### AGE GROUP \* Intention to shop online \* SEX Crosstabulation

Count

SEX			Intention to shop online		Total
			No	Yes	
FEMALE	AGE GROUP	25 YEARS & BELOW	33	190	223
		26 - 30 YEARS	17	161	178
		31 -35 YEARS	9	73	82
		36 - 40 YEARS	2	27	29
		41-50 YEARS	4	14	18
		51 YEARS AND ABOVE	0	1	1
		Total	65	466	531
MALE	AGE GROUP	25 YEARS & BELOW	23	136	159
		26 - 30 YEARS	22	165	187
		31 -35 YEARS	8	107	115
		36 - 40 YEARS	11	65	76
		41-50 YEARS	1	31	32
		Total	65	504	569
Total	AGE GROUP	25 YEARS & BELOW	56	326	382
		26 - 30 YEARS	39	326	365
		31 -35 YEARS	17	180	197
		36 - 40 YEARS	13	92	105
		41-50 YEARS	5	45	50
		51 YEARS AND ABOVE	0	1	1
		Total	130	970	1100

Source: Field study

# APPENDIX E

## MEDIATION ANALYSIS FOR HYPOTHESIS THREE

\*\*\*\*\* PROCESS Procedure for SPSS Release 2.13 \*\*\*\*\*

Written by Andrew F. Hayes, Ph.D.                      www.afhayes.com  
Documentation available in Hayes (2013). www.guilford.com/p/hayes3

\*\*\*\*\*

Model = 4  
Y = Intention  
X = Perceived Usefulness (PU)  
M = Perceived Risk (PR)

Sample size  
1100

\*\*\*\*\*

Outcome: PR

Model Summary

R	R-sq	MSE	F	df1	df2	p
.2689	.0723	1.2314	85.5616	1.0000	1098.0000	.0000

Model

	coeff	se	t	p
constant	5.1504	.1764	29.1933	.0000
PU	-.2913	.0315	-9.2499	.0000

\*\*\*\*\*

Outcome: Intentn

Model Summary

R	R-sq	MSE	F	df1	df2	p
.5976	.3571	.5826	304.6580	2.0000	1097.0000	.0000

Model

	coeff	se	t	p
constant	3.1112	.1617	19.2372	.0000
PR	-.0883	.0208	-4.2558	.0000
PU	.5009	.0225	22.2751	.0000

\*\*\*\*\* TOTAL EFFECT MODEL \*\*\*\*\*

Outcome: Intentn

Model Summary

R	R-sq	MSE	F	df1	df2	p
.5886	.3465	.5917	582.1320	1.0000	1098.0000	.0000

Model

	coeff	se	t	p
constant	2.6562	.1223	21.7201	.0000
PU	.5267	.0218	24.1274	.0000

\*\*\*\*\* TOTAL, DIRECT, AND INDIRECT EFFECTS \*\*\*\*\*

Total effect of X on Y

Effect	SE	t	p
.5267	.0218	24.1274	.0000

Direct effect of X on Y

Effect	SE	t	p
.5009	.0225	22.2751	.0000

```

Indirect effect of X on Y
  Effect    Boot SE    BootLLCI    BootULCI
PR      .0257      .0071      .0129      .0407

Partially standardized indirect effect of X on Y
  Effect    Boot SE    BootLLCI    BootULCI
PR      .0271      .0075      .0138      .0430

Completely standardized indirect effect of X on Y
  Effect    Boot SE    BootLLCI    BootULCI
PR      .0288      .0079      .0146      .0453

Ratio of indirect to total effect of X on Y
  Effect    Boot SE    BootLLCI    BootULCI
PR      .0489      .0140      .0237      .0793

Ratio of indirect to direct effect of X on Y
  Effect    Boot SE    BootLLCI    BootULCI
PR      .0514      .0156      .0243      .0862

R-squared mediation effect size (R-sq_med)
  Effect    Boot SE    BootLLCI    BootULCI
PR      .0557      .0116      .0343      .0799

Preacher and Kelley (2011) Kappa-squared
  Effect    Boot SE    BootLLCI    BootULCI
PR      .0367      .0095      .0196      .0552

Normal theory tests for indirect effect
  Effect    se        z        p
  .0257      .0067      3.8477      .0001

```

\*\*\*\*\* ANALYSIS NOTES AND WARNINGS \*\*\*\*\*

Number of bootstrap samples for bias corrected bootstrap confidence intervals:  
1000

Level of confidence for all confidence intervals in output:  
95.00

# APPENDIX F

## MEDIATION ANALYSIS FOR HYPOTHESIS FOUR

\*\*\*\*\* PROCESS Procedure for SPSS Release 2.13 \*\*\*\*\*

Written by Andrew F. Hayes, Ph.D. [www.afhayes.com](http://www.afhayes.com)  
Documentation available in Hayes (2013). [www.guilford.com/p/hayes3](http://www.guilford.com/p/hayes3)

\*\*\*\*\*

Model = 4  
Y = Intention  
X = Perceived Ease of use (PE)  
M = Perceived Risk (PR)

Sample size  
1100

\*\*\*\*\*

Outcome: PR

Model Summary

	R	R-sq	MSE	F	df1	df2
p	.3837	.1472	1.1320	189.5208	1.0000	1098.0000
	.0000					

Model

	coeff	se	t	p
constant	5.9978	.1808	33.1713	.0000
PE	-.4501	.0327	-13.7667	.0000

\*\*\*\*\*

Outcome: Inten

Model Summary

	R	R-sq	MSE	F	df1	df2
p	.4652	.2164	.7101	151.4732	2.0000	1097.0000
	.0000					

Model

	coeff	se	t	p
constant	3.6239	.2026	17.8837	.0000
PR	-.0797	.0239	-3.3357	.0009
PE	.4065	.0280	14.4956	.0000

\*\*\*\*\* TOTAL EFFECT MODEL \*\*\*\*\*

Outcome: Inten

Model Summary

	R	R-sq	MSE	F	df1	df2
p	.4566	.2085	.7167	289.1524	1.0000	1098.0000
	.0000					

Model

	coeff	se	t	p
constant	3.1457	.1439	21.8650	.0000

PE .4424 .0260 17.0045 .0000

\*\*\*\*\* TOTAL, DIRECT, AND INDIRECT EFFECTS \*\*\*\*\*

Total effect of X on Y  
Effect SE t p  
.4424 .0260 17.0045 .0000

Direct effect of X on Y  
Effect SE t p  
.4065 .0280 14.4956 .0000

Indirect effect of X on Y  
Effect Boot SE BootLLCI BootULCI  
PR .0359 .0124 .0124 .0600

Partially standardized indirect effect of X on Y  
Effect Boot SE BootLLCI BootULCI  
PR .0377 .0131 .0136 .0641

Completely standardized indirect effect of X on Y  
Effect Boot SE BootLLCI BootULCI  
PR .0370 .0128 .0126 .0614

Ratio of indirect to total effect of X on Y  
Effect Boot SE BootLLCI BootULCI  
PR .0811 .0297 .0266 .1435

Ratio of indirect to direct effect of X on Y  
Effect Boot SE BootLLCI BootULCI  
PR .0883 .0354 .0273 .1676

R-squared mediation effect size (R-sq\_med)  
Effect Boot SE BootLLCI BootULCI  
PR .0584 .0112 .0385 .0816

Preacher and Kelley (2011) Kappa-squared  
Effect Boot SE BootLLCI BootULCI  
PR .0393 .0131 .0139 .0646

Normal theory tests for indirect effect  
Effect se Z p  
.0359 .0111 3.2339 .0012

\*\*\*\*\* ANALYSIS NOTES AND WARNINGS \*\*\*\*\*

Number of bootstrap samples for bias corrected bootstrap confidence intervals:  
1000

Level of confidence for all confidence intervals in output:  
95.00

## APPENDIX G

### RESIDUAL ANALYSIS FOR HYPOTHESIS FIVE

**Casewise Diagnostics<sup>a</sup>**

Case Number	Std. Residual	Intention to use	Predicted Value	Residual
21	4.006	7.00	4.0530	2.94701
46	-2.136	3.75	5.3214	-1.57139
47	-2.916	3.38	5.5199	-2.14488
48	-4.805	1.75	5.2847	-3.53467
56	-5.585	1.63	5.7340	-4.10904
63	-3.385	3.00	5.4900	-2.49005
65	-2.152	2.63	4.2081	-1.58309
82	-3.959	2.13	5.0375	-2.91248
92	-2.127	4.50	6.0651	-1.56509
93	-2.127	4.50	6.0651	-1.56509
142	2.291	5.00	3.3143	1.68572
152	-2.644	3.63	5.5699	-1.94487
153	-3.047	1.00	3.2412	-2.24123
179	-2.391	3.88	5.6339	-1.75891
213	-2.151	1.63	3.2074	-1.58244
222	2.249	6.00	4.3452	1.65485
239	-5.352	1.63	5.5624	-3.93743
240	2.082	6.88	5.3435	1.53150
263	-3.396	2.25	4.7480	-2.49800
316	-2.870	1.88	3.9867	-2.11173
359	-2.100	3.63	5.1696	-1.54461
379	2.496	6.25	4.4136	1.83642
391	-2.442	4.38	6.1713	-1.79626
397	2.531	6.00	4.1378	1.86220
401	2.012	5.00	3.5197	1.48035
411	-2.734	3.75	5.7613	-2.01127
419	3.085	7.00	4.7303	2.26972
446	2.473	6.25	4.4308	1.81916
456	-2.393	4.00	5.7605	-1.76047
461	2.620	7.00	5.0723	1.92771
466	-2.275	3.75	5.4237	-1.67367
467	-4.875	2.00	5.5866	-3.58661
469	-3.952	3.00	5.9077	-2.90769
476	2.624	7.00	5.0695	1.93053
543	-2.272	3.88	5.5461	-1.67112
567	-2.546	4.00	5.8732	-1.87317
623	2.134	6.75	5.1798	1.57016
635	-2.201	3.25	4.8693	-1.61930
651	-2.319	4.00	5.7063	-1.70630
675	-2.404	4.13	5.8933	-1.76825
734	-2.333	3.88	5.5914	-1.71638
741	2.059	7.00	5.4850	1.51495
750	-2.083	3.75	5.2823	-1.53226
752	2.081	6.38	4.8441	1.53093
798	-3.125	2.50	4.7988	-2.29883
846	-2.143	3.50	5.0762	-1.57620
876	2.020	5.63	4.1386	1.48642
877	2.175	7.00	5.3998	1.60019
918	-3.664	3.00	5.6956	-2.69565
952	-2.477	3.63	5.4469	-1.82194
954	-2.114	3.38	4.9305	-1.55551
975	4.066	7.00	4.0085	2.99151
991	3.048	6.00	3.7574	2.24257
1019	-3.278	3.13	5.5368	-2.41184
1026	-2.877	3.00	5.1164	-2.11642
1047	2.295	6.50	4.8115	1.68853
1067	2.284	7.00	5.3194	1.68060
1097	-2.600	3.88	5.7879	-1.91295

a. Dependent Variable: Intention to use

Source: Field study, 2016.

**APPENDIX H**  
**SPSS OUTPUT FOR BOOTSTRAPPED REGRESSION FOR H<sub>05</sub>**

**Descriptive Statistics**

		Statistic	Bootstrap <sup>a</sup>			
			Bias	Std. Error	95% Confidence Interval	
					Lower	Upper
Intention to use	Mean	5.5533	-.0004	.0290	5.4954	5.6075
	Std. Deviation	.95110	-.00057	.02785	.89823	1.00167
	N	1100	0	0	1100	1100
Innovativeness Scale	Mean	4.3741	-.0004	.0340	4.3064	4.4404
	Std. Deviation	1.18799	.00002	.02263	1.14473	1.23269
	N	1100	0	0	1100	1100
Perceived Usefulness	Mean	5.5008	.0003	.0327	5.4403	5.5665
	Std. Deviation	1.06299	-.00057	.02925	1.00327	1.11989
	N	1100	0	0	1100	1100
Perceived ease of use	Mean	5.4423	-.0002	.0290	5.3815	5.4957
	Std. Deviation	.98157	-.00020	.02209	.94072	1.02431
	N	1100	0	0	1100	1100
Perceived Risk	Mean	3.5481	.0001	.0336	3.4821	3.6104
	Std. Deviation	1.15161	-.00097	.02017	1.10963	1.19052
	N	1100	0	0	1100	1100

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.636 <sup>a</sup>	.404	.402	.73567	1.849

a. Predictors: (Constant), Perceived Risk, Perceived Usefulness, Innovativeness Scale, Perceived ease of use

b. Dependent Variable: Intention to use

**Bootstrap for Model Summary**

		Bootstrap <sup>a</sup>			
		Bias	Std. Error	95% Confidence Interval	
				Lower	Upper
Model	Durbin-Watson				
1	1.849	-.656	.074	1.044	1.334

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples



**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	401.511	4	100.378	185.468	.000 <sup>a</sup>
	Residual	592.630	1095	.541		
	Total	994.141	1099			

a. Predictors: (Constant), Perceived Risk, Perceived Usefulness, Innovativeness Scale, Perceived ease of use

b. Dependent Variable: Intention to use

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.854	.208		8.910	.000
	Innovativeness Scale	.066	.021	.082	3.116	.002
	Perceived Usefulness	.417	.023	.466	17.778	.000
	Perceived ease of use	.213	.027	.220	7.926	.000
	Perceived Risk	-.013	.022	-.015	-.574	.566

a. Dependent Variable: Intention to use

**Bootstrap for Coefficients**

Model		B	Bootstrap <sup>a</sup>				
			Bias	Std. Error	Sig. (2-tailed)	95% Confidence Interval	
						Lower	Upper
1	(Constant)	1.854	.008	.249	.001	1.355	2.345
	Innovativeness Scale	.066	.000	.022	.004	.024	.111
	Perceived Usefulness	.417	.000	.031	.001	.358	.478
	Perceived ease of use	.213	-.001	.036	.001	.141	.281
	Perceived Risk	-.013	-.001	.024	.607	-.064	.034

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

## APPENDIX I

### TESTING FOR LINEARITY OF THE LOGIT

Interaction Term	B	SE	WALD	df	SIG	EXP(B)	95% C.I. for EXP(B)	
							Lower	Upper
Innovate by LogInnovate	1.610	.617	6.803	1	.090	5.004	1.492	16.782
LogPR by PR	-.119	.597	.039	1	.842	.888	.276	2.860
LogPU by PU	-.205	.574	.128	1	.721	.814	.264	2.510
LogPE by PE	1.747	.874	3.994	1	.056	5.737	1.034	31.832

Source: Field Study, 2016.

## APPENDIX J

### RESIDUAL ANALYSIS FOR HYPOTHESIS SIX

Casewise List<sup>b</sup>

Case	Selected Status <sup>a</sup>	Observed	Predicted	Predicted Group	Temporary Variable	
		Intention to shop online			Resid	ZResid
41	S	N**	.886	Y	-.886	-2.783
46	S	N**	.897	Y	-.897	-2.950
47	S	N**	.917	Y	-.917	-3.327
56	S	N**	.897	Y	-.897	-2.946
62	S	N**	.879	Y	-.879	-2.690
63	S	N**	.923	Y	-.923	-3.468
134	S	N**	.952	Y	-.952	-4.443
142	S	Y**	.102	N	.898	2.974
152	S	N**	.938	Y	-.938	-3.895
239	S	N**	.920	Y	-.920	-3.386
281	S	N**	.931	Y	-.931	-3.660
391	S	N**	.980	Y	-.980	-6.929
411	S	N**	.943	Y	-.943	-4.081
456	S	N**	.936	Y	-.936	-3.818
467	S	N**	.938	Y	-.938	-3.899
469	S	N**	.956	Y	-.956	-4.669
489	S	N**	.878	Y	-.878	-2.678
543	S	N**	.946	Y	-.946	-4.188
567	S	N**	.948	Y	-.948	-4.287
574	S	N**	.850	Y	-.850	-2.382
585	S	N**	.900	Y	-.900	-2.996
651	S	N**	.859	Y	-.859	-2.472
675	S	N**	.974	Y	-.974	-6.178
676	S	N**	.850	Y	-.850	-2.380
734	S	N**	.916	Y	-.916	-3.307
750	S	N**	.891	Y	-.891	-2.858
759	S	N**	.950	Y	-.950	-4.356
872	S	N**	.859	Y	-.859	-2.471
918	S	N**	.967	Y	-.967	-5.404
952	S	N**	.950	Y	-.950	-4.367
991	S	Y**	.122	N	.878	2.687
1019	S	N**	.953	Y	-.953	-4.518
1026	S	N**	.878	Y	-.878	-2.677
1081	S	N**	.863	Y	-.863	-2.514
1097	S	N**	.958	Y	-.958	-4.798

a. S = Selected, U = Unselected cases, and \*\* = Misclassified cases.  
b. Cases with studentized residuals greater than 2.000 are listed.

Source: Field study, 2016

## APPENDIX K

### RESULT OF MULTICOLLINEARITY TEST FOR PREDICTORS IN HYPOTHESIS H<sub>06</sub>

**Multicollinearity test for predictors in H<sub>06</sub>**

Model		Collinearity Statistics	
		Tolerance	VIF
1	SEX	.944	1.059
	AGE GROUP	.762	1.313
	HIGHEST EDUCATIONAL QUALIFICATION	.809	1.236
	ANNUAL INCOME	.784	1.275
	Innovativeness	.754	1.327
	Perceived Risk	.764	1.309
	Perceived Usefulness	.759	1.318
	Perceived ease of use	.690	1.449
	Willingness to shop for search goods online	.830	1.204
	Willingness to shop for experiential goods online	.944	1.060
	Willingness to shop for credence goods online	.849	1.177

a. Dependent Variable: Intention to shop online

Source: Field study, 2016.

## APPENDIX L

### FULL LOGISTIC REGRESSION ANALYSIS RESULT FOR H<sub>06</sub>

#### Case Processing Summary

Unweighted Cases <sup>a</sup>		N	Percent
Selected Cases	Included in Analysis	1100	100.0
	Missing Cases	0	.0
	Total	1100	100.0
Unselected Cases		0	.0
Total		1100	100.0

a. If weight is in effect, see classification table for the total number of cases.

#### Dependent Variable Encoding

Original Value	Internal Value
No	0
Yes	1

#### Categorical Variables Codings

		Frequency	Parameter coding				
			(1)	(2)	(3)	(4)	(5)
ANNUAL INCOME	#60,000-#215,999	514	.000	.000	.000	.000	.000
	#216,000-#500,000	202	1.000	.000	.000	.000	.000
	#500,001 - #2,500,000	211	.000	1.000	.000	.000	.000
	#2,500,001 -#5,000,000	98	.000	.000	1.000	.000	.000
	#5,000,001 - #10,000,000	46	.000	.000	.000	1.000	.000
	#10,000,001 AND ABOVE	29	.000	.000	.000	.000	1.000
AGE GROUP	25 YEARS & BELOW	382	.000	.000	.000	.000	.000
	26 - 30 YEARS	365	1.000	.000	.000	.000	.000
	31 -35 YEARS	197	.000	1.000	.000	.000	.000
	36 - 40 YEARS	105	.000	.000	1.000	.000	.000
	41-50 YEARS	50	.000	.000	.000	1.000	.000
	51 YEARS AND ABOVE	1	.000	.000	.000	.000	1.000
HIGHEST EDUCATIONAL QUALIFICATION	O'LEVEL	333	.000	.000	.000	.000	.000
	OND /NCE	168	1.000	.000	.000	.000	.000
	HND/BABSC	453	.000	1.000	.000	.000	.000
	PGD/M.SC/ MBA	132	.000	.000	1.000	.000	.000
	PHD	1	.000	.000	.000	1.000	.000
	OTHERS	13	.000	.000	.000	.000	1.000
	SEX	FEMALE	531	.000			
	MALE	569	1.000				

## Block 0: Beginning Block

**Iteration History<sup>a,b,c</sup>**

Iteration		-2 Log likelihood	Coefficients
			Constant
Step 0	1	829.376	1.527
	2	799.831	1.938
	3	799.231	2.008
	4	799.231	2.010
	5	799.231	2.010

- a. Constant is included in the model.  
 b. Initial -2 Log Likelihood: 799.231  
 c. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

**Classification Table<sup>a,b</sup>**

Observed			Predicted		
			Intention to shop online		Percentage Correct
			No	Yes	
Step 0	Intention to shop online	No	0	130	.0
		Yes	0	970	100.0
Overall Percentage					88.2

- a. Constant is included in the model.  
 b. The cut value is .500

**Variables in the Equation**

	B	S.E.	Wald	df	Sig.	Exp(B)
Step 0 Constant	2.010	.093	463.033	1	.000	7.462

**Omnibus Tests of Model Coefficients**

	Chi-square	Df	Sig.
Step 1 Step	228.895	23	.000
Block	228.895	23	.000
Model	228.895	23	.000

**Model Summary**

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	570.336 <sup>a</sup>	.188	.364

a. Estimation terminated at iteration number 20 because maximum iterations has been reached. Final solution cannot be found.

**Hosmer and Lemeshow Test**

Step	Chi-square	df	Sig.
1	12.024	8	.150

**Contingency Table for Hosmer and Lemeshow Test**

		Intention to shop online = No		Intention to shop online = Yes		Total
		Observed	Expected	Observed	Expected	
Step 1	1	56	60.090	54	49.910	110
	2	29	26.384	81	83.616	110
	3	21	15.469	89	94.531	110
	4	8	9.980	102	100.020	110
	5	11	6.259	99	103.741	110
	6	2	4.404	108	105.596	110
	7	2	3.187	108	106.813	110
	8	1	2.253	109	107.747	110
	9	0	1.396	110	108.604	110
	10	0	.578	110	109.422	110

**Classification Table<sup>a</sup>**

Observed			Predicted		Percentage Correct
			Intention to shop online		
			No	Yes	
Step 1	Intention to shop online	No	39	91	30.0
		Yes	21	949	97.8
Overall Percentage					89.8

a. The cut value is .500

### Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
Step	Sex(1)	-.089	.229	.152	1	.697	.915	.584	1.433
1 <sup>a</sup>	Age			2.606	5	.761			
	25 yrs&Below	.172	.278	.380	1	.537	1.187	.688	2.048
	26-30 yrs	.575	.380	2.288	1	.130	1.777	.844	3.744
	<b>31-35 yrs</b>	.339	.239	2.011	1	<b>.040</b>	<b>1.404</b>	1.006	3.550
	36-40 yrs	.520	.657	.626	1	.429	1.682	.464	6.099
	41-50 yrs	16.569	40192.970	.000	1	1.000	15692509.023	.000	.
	Educ			2.719	5	.743			
	O'Level	-.161	.338	.228	1	.633	.851	.439	1.651
	OND/NCE	.089	.292	.094	1	.760	1.093	.617	1.938
	HND/BA/BSC	.567	.456	1.551	1	.213	1.764	.722	4.309
	PGD/MSC/MBA	16.832	40192.970	.000	1	1.000	20418514.886	.000	.
	PHD	-.417	.897	.216	1	.642	.659	.114	3.825
	Income			7.327	5	.197			
	Income (1)	.040	.312	.016	1	.899	1.040	.564	1.919
	Income (2)	-.092	.348	.070	1	.791	.912	.461	1.802
	Income (3)	-.168	.446	.142	1	.706	.845	.352	2.027
	Income (4)	-.407	.615	.438	1	.508	.666	.200	2.220
	Income (5)	-1.464	.560	6.831	1	.090	.231	.077	.693
	Search2	.088	.237	.139	1	.709	1.092	.687	1.737
	Experience2	-.176	.321	.301	1	.583	.839	.447	1.573
	<b>Credence2</b>	.499	.237	4.447	1	<b>.035</b>	<b>1.648</b>	1.036	2.620
	<b>Innovate</b>	.426	.110	15.087	1	<b>.000</b>	<b>1.531</b>	1.235	1.899
	PR	.006	.111	.003	1	.958	1.006	.809	1.250
	<b>PU</b>	.832	.104	63.886	1	<b>.000</b>	<b>2.298</b>	1.874	2.818
	<b>PE</b>	.499	.120	17.410	1	<b>.000</b>	<b>1.648</b>	1.303	2.084
	Constant	-6.913	1.030	45.013	1	.000	.001		

a. Variable(s) entered on step 1: Sex, Age, Educ, Income, Search2, Experience2, Credence2, Innovate, PR, PU, PE.

Income codes: (1) #60,000-#215,999,(2): #216,000-#500,000,(3): #500,001 - #2,500,000,(4): #2,500,001 - #5,000,000,(5) #5,000,001 - #10,000,000,(6) #10,000,001 & above



## APPENDIX M

### SPSS OUTPUT FOR REGRESSION ANALYSIS OF PERCEIVED RISK AND INTENTION TO SHOP ONLINE (A POST HOC TEST)

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.394 <sup>a</sup>	.155	.155	1.09224

a. Predictors: (Constant), Perceived Risk

b. Dependent Variable: Innovativeness Scale

Source: Field study, 2016.

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	241.127	1	241.127	202.119	.000 <sup>a</sup>
	Residual	1309.907	1098	1.193		
	Total	1551.034	1099			

a. Predictors: (Constant), Perceived Risk

b. Dependent Variable: Innovativeness Scale

Source: Field study, 2016.

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.817	.107		54.510	.000
	Perceived Risk	-.407	.029	-.394	-14.217	.000

a. Dependent Variable: Innovativeness Scale

Source: Field study, 2016.

## APPENDIX N

### FULL COMPUTATION OF F-STATISTICS FOR R<sup>2</sup> VALUES OF 0.007, 0.028 AND 0.053

WHEN R<sup>2</sup> = 0.007

$F = \frac{(N-k-1)R^2}{k(1-R^2)}$  where, N = Number of respondents, K= number of predictors, R<sup>2</sup> = Coefficient of determination in the model. N= 1100, k= 4, R<sup>2</sup> = 0.007

$$F = \frac{(1100-4-1)0.007^2}{4(1-0.007^2)},$$
$$= \frac{7.665}{3.972}, = \mathbf{1.93}$$

WHEN R<sup>2</sup> = 0.028

$F = \frac{(N-k-1)R^2}{k(1-R^2)}$  where, N = Number of respondents, K= number of predictors, R<sup>2</sup> = Coefficient of determination in the model. N= 1100, k=6, R<sup>2</sup> = 0.028

$$F = \frac{(1100-6-1)0.028^2}{6(1-0.028^2)},$$
$$= \frac{30.604}{5.832}, = \mathbf{5.25}$$

WHEN R<sup>2</sup> = 0.053

$F = \frac{(N-k-1)R^2}{k(1-R^2)}$  where, N = Number of respondents, K= number of predictors, R<sup>2</sup> = Coefficient of determination in the model. N= 1100, k=6, R<sup>2</sup> = 0.053

$$F = \frac{(1100-6-1)0.053^2}{6(1-0.053^2)},$$
$$= \frac{57.929}{5.682}, = \mathbf{10.20}$$

## REFERENCES

- Adams, A.D., Nelson, R.R., & Todd, A.P. (1992). Perceived usefulness, ease of use, and usage of information technology: a replication, *MIS Quarterly* 16 (2), pp. 227–247.
- Agarwal, R. & J. Prasad (1998). The antecedents and consequences of user perceptions in information technology adoption, *Decision Support Systems*, 22, pp. 15-29.
- Aghaunor, L., & Fotoh, X (2006). Factors Affecting Ecommerce adoption in Nigerian Banks, Jönköping International Business School, Jönköping University.
- Ahn, J., Park, J & Lee, D (2001). Risk-Focused e-Commerce Adoption Model - A Cross Country Study, Working Paper
- Aiken, L.S., & West, S. G. (1991). Multiple regression: Testing and interpreting interactions. Newbury Park, CA: Sage
- Ajala, T (2015, December 26). Subscribers Helpless As Telecom-Operators Make Millions From Illegal Deductions. *Punch*, pp. 22-23
- Ajzen, I. (1988). *Attitudes, personality, and behavior*, Chicago, IL: Dorsey.
- Ajzen, I (1991). The theory of planned behavior, *Organizational Behavior and Human Decision processes* 50 (2): 179–211.
- Ajzen, I. & Fishbein, M. (1969). The Prediction of Behavioral Intentions in a Choice Situation, *Journal of Experimental Social Psychology*, 5: 400-416.
- Ajzen, I., & Fishbein, M. (1977). Attitude-behavior relations: A theoretical analysis and review of empirical research, *Psychological Bulletin*, 84(5), 888–918.
- Ajzen, I. & Fishbein, M. (1980). *Understanding Attitudes and Predicting Social Behaviour*, Englewood Cliffs, NJ: Prentice-Hall.
- Ajzen, I., & Madden, T. J. (1986). Prediction of goal-directed behaviour: Attitudes, intentions, and perceived behavioral control, *Journal of Experimental Social Psychology*, 22, 453-474.
- Akintola K.G., Akinyede R.O. & Agbonifo C.O. (2011). Appraising Nigeria Readiness for e Commerce: Towards Achieving Vision 20:2020. *IJRRAS*, 9(2), 331
- Aladwani, A. M. (2002). The development of two tools for measuring the easiness and usefulness of transactional web sites, *European Journal of Information Systems*, 11(3), 223-234.
- Alba, J., Lynch, J., Weitz, B., Janiszewski, C., Lutz, R., Sawyer, A & Wood, S (1997). Interactive Home Shopping: Consumer, Retailer, and Manufacturer Incentives to Participate in Electronic Marketplaces, *Journal of Marketing*, 61 (July) 38–53.

- Alreck, P., & Settle, R.B (2002). Gender effects on Internet, catalogue and store shopping, *Journal of Database Marketing* Vol. 9, 2, 150–162
- Aqute Research (2004), Online shopping in the UK. Retrieved February 2nd, 2015 from: [www.aqute.com](http://www.aqute.com)
- Armitage, C. J., & Conner, M. (2001). Efficacy of the Theory of Planned Behaviour: A meta analytic review, *British Journal of Social Psychology*, 40, 471-499.
- Asika, N (2004). *Research Methodology: A Process Approach*. Shomolu Lagos: Mukugam & Brothers Enterprises.
- Aspinwall, J (1968). A test of the two-step flow in diffusion of a new product", *Journalism Quarterly*, 45 (Autumn), 457–465.
- Babin, B.J., Darden, W.R. & Griffin, M. (1994). Work and/or fun: measuring hedonic and utilitarian shopping value, *Journal of Consumer Research*, Vol. 20, pp. 644-56.
- Bagchi, K., & Mahmood, M. A. (2004). A Longitudinal Study of Business Model of On-Line Shopping Behavior Using a Latent Growth Curve Approach, Proceedings of the Tenth Americas Conference on Information Systems, New York, NY.
- Bagozzi, R. P., Baumgartner, H, & Yi, Y. (1992). State versus Action Orientation and the Theory of Reasoned Action: An Application to Coupon Usage, *Journal of Consumer Research*, 18(4), March, 505–518.
- Bagozzi, R. P., Lee, K. H., & Van-Loo, M. H. (1996). Decisions to donate bone marrow: The role of attitudes and subjective norms across cultures, Paper presented at the annual conference of the Association of Consumer Research, Tucson, Arizona, October 10-13
- Bakshi, G., & Gupta, S.K. (2012). A study of factors affecting online shopping modes in Haryana, *International Journal of Research in IT & Management*, Volume 2, Issue 12
- Barkhi, R., Belanger, F., & Hicks, J. (2008). A model of determinants of purchasing from virtual stores, *Journal of Organizational Computing and Electronic Commerce*, 18(3), 177-196.
- Baron, R. M., & Kenny, D.A. (1986). The moderator-mediator variable distinction in socialpsychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and social psychology*, 51(6), 1173-1182.
- Bass, F.M. (1969). A new product growth model for consumer durables, *management Science*, 15(January), pp. 215-227
- Bauer, R. (1960). Consumer Behavior as Risk Taking, 43rd National Conference of the American Marketing Association, in *Proceedings of the 43rd National Conference of the American Marketing Association*, Dec., pp. 389-398

- Bauer, R (1967). Consumer behavior as risk taking, In: Cox, D. (Ed.), *Risk Taking and Information Handling in Consumer Behavior*, Harvard University Press, Cambridge, MA.
- Bellman, S., Lohse, G., & Johnson, E. (1999). Predictors of online buying behaviour, *Communications of the ACM*, Vol.42, No.12:32-38
- Bentler, P. M & Speckart, G. (1979). Models of attitude-behavior relations, *Psychological Review*, 86,452-464.
- Bettman, J. (1973). Perceived risk and its components: a model and empirical test, *Journal of Marketing Research* 10, 184–190
- Bhatnagar, A., Misra, S & Rao, H.R (2000). On risk, convenience and internet shopping behavior, *Communications of the ACM*, Vol.43, NO.11, pp. 98-105
- Bigne, E., Ruiz, C and Sanz, S (2005). The Impact of Internet User Shopping Patterns and Demographics on Consumer Mobile Buying Behaviour, *Journal of Electronic Commerce Research*, VOL. 6, NO.3, pp1
- Bisdee, D (2007). Consumer Attitudes Review, *Office of Fair Trading*, June, 1-147.
- Boateng, R. (2011). A Resource-based model for e-commerce in developing countries. *African Journal of Computing & ICT*, 4(1), 31-44
- Bobbit, L. M., & Dabholkar, P. A. (2001). Integrating attitudinal theories to understand and predict use of technology-based self-service: the internet as an illustration, *International Journal of Service and Industrial Management*, 12(5), 423- 450.
- Bowerman, B.L., & O'Connell, R.T.(1990). *Linear statistical models: An applied approach*(2<sup>nd</sup> ed.). Belmont, CA: Duxbury
- Boyed, H. W., Westfall, R., & Stasch, S. F. (1977). *Marketing Research-Text and Cases*.Homewood. IL: Richard.D. Irwin, Inc.
- Breivik, E., Troye, S. V., & Olsson, U. H (1998). *Dimensions of intangibility and their impact on product evaluation* (Working Paper).Presented at the annual conference of the Association for Consumer Research, October, Montreal, Canada.
- Briggs, S. R., and Cheek, J. M. (1986). The role of factor analysis in the development and evaluation of personality scales. *Journal of Personality*, 54 (1), 106-148
- Brown, M., Pope, N & Voges, K. (2003). Buying or browsing? An exploration of shopping orientations and online purchase intention, *European Journal of Marketing*, Vol. 37 No. 11/12, pp. 1666-1684

- Bruner, G. C. II., & Kumar, A (2005). Explaining consumer acceptance of handheld Internet devices, *Journal of Business Research*, 58(5), 553-558.
- Burke, R.R (2002). Technology and the customer interface: what consumer wants in the physical and virtual store, *Journal of the Academy of Marketing Science*, 30(4): 411-432.
- Burnkrant, R. E & Page, T. J., Jr. (1982). An examination of the convergent, discriminant, and predictive validity of Fishbein's behavioral intention model, *Journal of Marketing Research*, 19, pp. 418- 423.
- Burns, R. B. (2000). *Introduction to Research Methods* (4th ed.). Frenchies Forest: Pearson Education.
- Burton-Jones, A & Hubona, G. S. (2005). Individual differences and usage behaviour: Revisiting a technology acceptance model assumption, *The Data Base for Advances in Information Systems*, 36(2), 58–77.
- Case, T., Burns, O.M & Dick, G.N (2001). Drivers Of On-Line Purchasing Among U.S. University Students, *Proceedings of the Seventh Americas Conference on Information Systems (AMCIS 2001)*, pp. 873-878.
- Cestre, G. (1996). Diffusion et innovativité: de'finition, mode'lisat'ion et mesure, *Rech Appl Mark*; 11(1):69– 88.
- Chang, H (2010). A New Perspective on Twitter Hashtag Use: Diffusion of Innovation Theory, *ASIST 2010*, Pittsburgh, PA, USA.
- Chang, M. K., Cheung, W & Lai, V.S (2005). Literature derived reference models for the adoption of online shopping, *Information & Management* 42 pp. 543–559
- Chau, P. Y. K., Cole, M., Montoya-Weiss, M. & O'keefe, R. M (2002). Cultural Differences in the Online Behavior of Consumers, *Communications of the ACM*. 45(10), 138-143
- Chen, B., Kirkley, D., & Raible, J. (2008). Applying diffusion of innovation model to embrace Web 2.0 technologies: Implementing an institutional strategy, *Presentation at the Sloan-C International Symposium*, Carefree, AZ, May 7-9
- Chen, H & Crowston, K (n.d). Comparative Diffusion of the Telephone and the World WideWeb: An Analysis of Rates of Adoption. Retrieved July 11th, 2015 from: <http://crowston.syr.edu/system/files/webnet97.html>
- Chen, L., Gillenson, M.L. & Sherrell, D.L. (2002). Enticing online consumers: an extended technology acceptance perspective, *Information & Management*, 39 (8), 705-19.
- Cheng, J.M.S., Kao, L.L.Y & Lin, J.Y. (2004). An investigation of the diffusion of online games in Taiwan: An Application of Roger's diffusion of innovation theory, *Journal of American Academy of Business*, Cambridge 5, 1/2; ABI/INFORM Global, 439.

- Childers, T.L., Carr, C.L., Peck, J. & Carson, S (2001). Hedonic and utilitarian motivations for online retail shopping behavior, *Journal of Retailing*, 77(4), 511-35.
- Chisnall, P. M. (1992). *Marketing Research: International Edition* (4th ed.). Singapore:McGraw-Hill
- Chiu,Y.-T. H., Fang,S.-C & Tseng, C.-C (2010). Early versus potential adopters: Exploring the antecedents of use intention in the context of retail service innovations, *International Journal of Retail & Distribution Management*,38(6), 443 – 459.
- Chuchinprakarn, N., Greer, T., & Wagner, J. (1998). “Moderating effects of religious commitment on consumer donation intentions,” In *Asia Pacific Advances in Consumer Research*. Hung, K.& Monroe, K. B. eds. V III, 155-161.
- Chuchinprakarn, S (2005): Application of the Theory of Reasoned Action to On-line Shopping.Retrieved January 15th, 2015 from: [www.bu.ac.th>jan\\_june2005>supanat](http://www.bu.ac.th>jan_june2005>supanat)
- Churchill, G. A. (1995). *Marketing Research Methodological Foundation* (6th ed.).Orlando, Florida: The Dryden Press.
- Citrin, A.V., Sprott, D.E & Silverman, S.N (2000). Adoption of internet shopping: the role of consumer innovativeness, *Industrial Management & Data Systems*, 100 (7), 294-300.
- Cohen, J. (1988). *Statistical power analysis for the behavioural sciences* (2<sup>nd</sup> ed.). New York:Academy Press.
- Cook, R. D., & Weinsberg, S. (1982). *Residuals and influence in regression*. New York: Chapman & Hall.
- Cooper, D.R. & Schindler, P.S. (2011). *Business Research Methods* (International edition), New York: McGraw- Hill/Irwin
- Copeland, M. T. (1923). Relation of consumers' buying habits to marketing methods *Harvard Business Review*, 1 (April), 282–289.
- Costa, P. T., & McCrae, R. R (1992). *Revised NEO personality inventory and NEO five-factor inventory professional manual*. Odessa, FL: Psychological Assessment Resources.
- Craig, S.C., & Ginter, J.L. (1975). An empirical test of a scale for innovativeness, in Schlinger, M.J. (Ed.), *Advances in Consumer Research*, Vol. 2, Chicago Association for Consumer Research, Chicago, IL, pp. 555-62.
- Crespo ,A.H., Bosque, I.R & Sánchez, M.M.G. (2009). The influence of perceived risk on Internet shopping behavior: a multidimensional perspective, *Journal of Risk Research*, 12:2, 259-277.

- Creswell, J. W. (1994). *Research Design: Qualitative and Quantitative Approaches*. Thousand Oaks: Sage Publications.
- Cronbach, L. J. (1951). Coefficient Alpha and the Internal Structural of Tests. *Psychometrika*, 16( 3), 297-334.
- Cunningham, S. M. (1967). Perceived Risk as a Factor in Informal Consumer communication in D. F. Cox (ed.). *Risk Taking and Information Handling in Consumer Behaviour*, Boston: Graduate School of Business Administration, Harvard University, pp. 265-88
- Dahlen, M., & Lange, F. (2002). Real consumers in the virtual store, *Scandinavian Journal of Management*, 18(3), 341–363.
- Darby, M. R., & Karni, E (1973). Free competition and the optimal amount of fraud, *Journal of Law and Economics*, 16 (April), 67–86.
- Davis, F.D (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology, *MIS Quarterly*, 13(3), 319-40.
- Davis, F.D., Bagozzi, R.P & Warshaw, P.R (1989). User acceptance of computer technology: a comparison of two theoretical models, *Management Science*, 35(8), 982-1003.
- DeVellis, R. F (2012). *Scale development: Theory and applications* (3<sup>rd</sup> edition). Thousand Oaks, California: Sage
- Dillman, D. (2000). *Mail and internet surveys: The tailored design method*, (2<sup>nd</sup> eds.). NewYork: Wiley Corporation.
- Dolen, W. V., Ruyter, K. D., & Lemmink, J. (2004). An empirical assessment of the influence of customer emotions and contact employee performance on encounter and relationship satisfaction. *Journal of Business Research*, 57(4), 437-444.
- Donthu, N & Garcia, A (1999). The Internet shopper, *Journal of Advertising Research*, Vol. 39 No. 3, pp. 52-8.
- Dowling, G. R & Staelin, R (1994). A Model of Perceived Risk and Intended Risk-Handling Activity, *Journal of Consumer Research*, 21 (June), 119–134.
- Dub'e-Rioux, L., Regan, D. T & Schmitt, B. H (1990). The cognitive representation of services varying in concreteness and specificity, *Advances in Consumer Research*, 17, 861–865.
- Durbin, J.,& Watson, G. S. (1951). Testing for serial correlation in least squares regression, II. *Biometrika*, 30, 159-178
- East, R. (1993). Investment decisions and the theory of planned behavior, *Journal of Economic Psychology*, 14, 337-375.



- Eastin, M. S. (2002). Diffusion of E-commerce: An analysis of the adoption of four E-commerce activities, *Telematics and Informatics*, 19(3), 251–267.
- Elliot, S., & Fowell, S. (2000). Expectations versus reality: a snapshot of consumer experiences with Internet retailing, *International Journal of Information Management*, Vol. 20 No. 5, pp. 323-36.
- Emmanuel, A. O. (2012). Adoption of E-commerce in Nigerian Businesses: A change from traditional to e-commerce business model in Richbol Environmental Services Limited. Thesis submitted to Business School of Seinäjoki University of Applied Sciences. Retrieved September 26<sup>th</sup>, 2015 from: <http://www.theseus.fi/bitstream/handle/10024/38988/Applying%20e-commerce.pdf?sequence=1>
- Engel, J., Blackwell, R., & Miniard, P. (1986). *Consumer Behavior*, New York: CBS College Publishing.
- Featherman, M. (2001). Is perceived risk germane to technology acceptance research *AMCIS Proceedings*, Boston, MA.
- Featherman, M.S., & Pavlou, P.A (2003). Predicting e-services adoption: a perceived risk facets perspective, *Int. J. Human-Computer Studies* 59 pp. 451–474
- Festinger, L (1957). *A Theory of Cognitive Dissonance*, Stanford University Press, Stanford, CA.
- Field, A. (2013). *Discovering Statistics Using IBM SPSS Statistics* (4<sup>th</sup> Ed.). London: Sage Publications Inc.
- Fishbein, M & Ajzen, I (1975). *Belief; attitude, intention and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley
- Folorunso, O., Awe, O. G., Sushil, K. & Jeff, Z (2006). Factors Affecting the Adoption of e-Commerce: A Study in Nigeria, *Journal of Applied Sciences*, 6(10), 2224-2230.
- Forsythe, S.M., & Shi, B. (2003). Consumer patronage and risk perceptions in internet shopping, *Journal of Business Research*, 56, no. 1: 867–75
- Foxall, G. R., & Goldsmith, R. E. (1988). Personality and consumer research: Another look, *Journal of the Market Research Society*, 30(2), 111–125.
- Foxall, G. R., Goldsmith, R. E., & Brown, S. (1998). *Consumer psychology for marketing*. London: International Thomson Business Press.
- Fram, E.H & Grady, D.B. (1997). Internet shoppers: is there a surfer gender gap? *Direct Marketing* 59 (9) pp.46–50.
- Freiden, J., Goldsmith, R., Takacs, S., & Hofacker, C. F (1998). Information as a product: Not goods, not services, *Marketing Intelligence and Planning*, 16(3), 210–220.

- Garcia-Murillo, M. (2004). Institutions and the adoption of electronic commerce in Mexico. *Electronic Commerce Research*, 4(3), 201-219
- Gefen, D., Karahanna, E & Straub, D.W. (2003). Inexperience and experience with online stores: the importance of TAM and trust, *IEEE Transactions on Engineering Management*, Vol. 50 No. 3, pp. 307-21.
- Gefen, D., Karahanna, E., & Straub, D.W. (2003). Trust and TAM in online shopping: an integrated model, *MIS Quarterly* 27 (1), pp. 51–90.
- Gefen, D., & Straub, D. W. (1997). Gender differences in the perception and use of e-mail: an extension to the technology acceptance model”, *MIS Quarterly*, 21(4), 389-400.
- Gefen, D., & Straub, D. (2000). The Relative Importance of Perceived Ease of Use in IS Adoption: A Study of E-Commerce Adoption, *Journal of the association for information systems*, 1(8), (October)
- Germunden, H. G. (1985). Perceived Risk and Information Search: A Systematic Meta Analysis of Empirical Evidence, *International Journal of Research in Marketing*, 2(2), 79-100
- GfK Group (2002). Retrieved January 15th, 2015 from: [www.gfk.com/investor/finanzberichte/gb2002english/index](http://www.gfk.com/investor/finanzberichte/gb2002english/index)
- Girard, T., Korgaonkar, P, & Silverblatt, R. (2003). Relationship of Type of Product, Shopping Orientations, And Demographics With Preference for Shopping on the Internet, *Journal of Business and Psychology*, 18(1), 101-120
- Girard, T., Silverblatt, R., & Korgaonkar, P. (2006). Influence of Product Class on Preference for Shopping on the Internet, *Journal of Computer-Mediated Communication*, 8(1).
- Goldsmith, R. (2002). Explaining and predicting consumer intention to purchase over the Internet: an exploratory study. *Journal of Marketing*, 66(Spring), 22-28.
- Goldsmith, R. E (1991). The validity of a scale to measure global innovativeness, *Journal of Applied Business Research*, 7, 89–97.
- Goldsmith, R.E & Foxall, G.R (2003): The Measurement of Innovativeness. In Shavinina, L.V. (Ed.), *The International Handbook on Innovation*, pp 321- 330
- Goldsmith, R. E & Goldsmith, E. B (1996). An empirical study of overlap of innovativeness, *Psychological Reports*, 79, 1113–1114.
- Goldsmith, R., & Hofacker, C (1991). Measuring Consumer Innovativeness, *Journal of the Academy of Marketing Science*, 19, 209-221.

- Grewal, D., Gotlieb, J., & Marmorstein, H. (1994). The moderating effects of message framing and source credibility on the price-perceived risk relationship, *Journal of Consumer Research* 21, 145–153.
- Grewal, D., Iyer, G.R & Levy, M (2002). Internet retailing: enablers, limiters and market consequences, *Journal of Business Research*.
- Gültekin, K. (2011). Technology Acceptance and The effect of Gender in the Turkish National Police: the case of the Polnet System, *Turkish Journal of Police Studies*, 13(3), 61-80
- Gupta, S., Pitkow, J & Recker, M. (1995). Consumer survey of WWW users. Retrieved January 15th, 2015 from: <http://www.umich.edu/~sgupta/hermes.htm>
- Ha, S & Stoel, L (2009). Consumer e-shopping acceptance: antecedents in a technology acceptance model, *Journal of Business Research*, 62(5), 565-71.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E (2010). *Multivariate data analysis* (7th ed.). New Jersey: Prentice Hall, Upper Saddle River.
- Hair , J. F., Bush, R. B., & Ortinau, D. J. (2003). *Marketing Research Within a Changing Information Environment*. New York, NY: McGraw-Hill.
- Hale, J.L., Householder, B.J. & Greene, K.L. (2002). The theory of reasoned action. In J.P. Dillard & M. Pfau (Eds.), *The persuasion handbook: Developments in theory and practice* . Thousand Oaks, CA: Sage, 259–286.
- Haque, A., & Khatibi, A. (2005). E-Shopping: Current practices and future opportunities towards Malaysian customer perspective, *Journal of Social Sciences*, 1(1), 41-46
- Haque, A., Sadeghzadeh, J., & Khatibi, A. (2006). Identifying Potentiality Online Sales In Malaysia: A Study on Customer Relationships Online Shopping, *Journal of Applied Business Research*, Vo. 22, No. 4
- Harn, A.C.P., Khatibi, A & Ismail, H. B (2006). E-Commerce: A Study on Online Shopping in Malaysia, *Journal of Social Science*, 13(3): 231-242
- Hashim, A., Ghani, E. K., & Said, J. (2009). Does Consumers' Demographic Profile Influence Online Shopping?: An Examination Using Fishbein's Theory, *Canadian Social Science* 5(6), 19-31.
- Havlena, W. J., & DeSarbo, W.S. (1991). On the Measurement of Perceived Consumer Risk, *Decision Sciences*, 22 (September/October) 927–939.
- Hayes, A. F. (2012). An analytical primer and computational tool for observed variable moderation, mediation and conditional process modeling. Manuscript submitted for publication

- Hayes, A. F., & Matthes, J. (2009). Computational procedures for probing interactions in OLS and logistic regression: SPSS and SAS implementations. *Behaviour Research Methods*, 41, 924-936
- Heijden, H. (2003). Factors influencing the usage of web sites: the case of a generic portal in The Netherlands, *Information & Management*, 40(6), 541-9.
- Heijden, H., Verhagen, T., & Creemers, M. (2003). Understanding online purchase intentions: contributions from technology and trust perspectives, *European Journal of Information Systems* 12 (1), 41.
- Hirschman, E. C (1980a). Innovativeness, Novelty Seeking, and Consumer Creativity, *Journal of Consumer Research*, 7, December, 283-295.
- Hirschman, E.C (1980b). Black ethnicity and innovative communication, *Journal of the Academy of Marketing Science*, 8: Spring, 100-18.
- Holton, R. H. (1958). The distinction between convenience goods, shopping goods and specialty goods, *Journal of Marketing*, 23(July), 53–56.
- Hsieh, Y.-C., Chiu, H.-C & Chiang, M.-Y (2005). Maintaining A Committed Online Customer: A Study Across Search- Experience-Credence Products, *Journal of Retailing*, 81 (1) 75–82.
- Hunt, S. D., Sparkman, R. D., & Wilcox, J. B. (1982). Pretest in survey research: Issues and preliminary findings. *Journal of Marketing Research*, 19(2), 269-273.
- Hurt, H.T., Joseph K & Cook, C (1977). Scales for the measurement of innovativeness, *Hum Commun Res*; 4(1):58– 65.
- Hsu, C.-L & Lu, H.-P (2004). Why do people play on-line games? An extended TAM with social influences and flow experience, *Information & Management*, 41, 853–868.
- Im, I.I., Kim, Y & Han, H.-J (2008). The effects of perceived risk and technology type on users' acceptance of technologies, *Information and Management* 45 pp. 1-9 Internet Usage Statistics for Africa (2014 Q2 report) Retrieved August 10th, 2015 from: <http://www.internetworldstats.com/stats1.htm>
- Internet World Stats (2016). Africa 2016 Population and Internet Users Statistics for 2016. Retrieved August 1<sup>st</sup>, 2016 from: <http://www.internetworldstats.com/stats1.htm>
- Jackson, D. N (1976). *Jackson personality inventory manual*. Goshen: Research Psychologists Press
- Jackson, C.M., Chow, S., & Leitch, R.A (1997). Toward an understanding of the behavioral intention to use an information system, *Decision Sciences* 28(2), 357–390.

- Jacoby, J & Kaplan, L.B (1972). The Components of Perceived Risk, 3rd Annual Conference of the Association for Consumer Research, in *Proceedings of the 3rd Annual Conference of the Association for Consumer Research*, 382-393.
- Jantan, M., Ramayah, T., & Chin, W. W. (2001). Personal computer acceptance by small and medium companies evidence from Malaysia, *Jurnal Manajemen and Bisnis*, 3(1), 1-14.
- Jarvenpaa, S. L. & Todd, P. A. (1997). Consumer Reactions To Electronic Shopping on the World Wide Web, *International Journal of Electronic Commerce*, 1(2), 59-88
- Jarvenpaa, S.L., Tractinsky, N., Saarinen, L & Vitale, M (1999). Consumer Trust in an internet store: a cross-cultural validation, *Journal of Computer-Mediated Communication* 5 (2).
- Jarvenpaa, S.L., Tractinsky, N & Vitale, M. (2000). Consumer trust in an internet store, *Information Technology and Management* 1 (1-2), 45-71.
- Jobber, D (2009). *Principles and practice of marketing*: England, McGraw-Hill Publishing Company
- Johnson, C. A., & Tesch, B. (2005). US Ecommerce: 2005 to 2010, Forrester Research, Cambridge, MA.
- Johnston, K. L & White, K. M (2003). Binge-drinking: A test of the role of group norms in the Theory of Planned Behaviour, *Psychology and Health* 18, 63-77.
- Joines, J., Scherer, C & Scheufele, D. (2003). Exploring Motivations for Consumer Web Use and Their Implications for E-Commerce, *Journal of Consumer Marketing*, 20(2), 90-109.
- Joseph, B & Vyas, S.J (1984). Concurrent validity of a measure of innovative cognitive style, *Journal of the Academy of Marketing Sciences*, 12 (2), 159-75.
- Judd, C. M., & Kenny, D. A. (1981). Process analysis: Estimating mediation in evaluation research. *Evaluation Research*, 5, 602- 619
- Kamarulzaman, Y (2007). Adoption of travel e-shopping in the UK, *International Journal of Retail & Distribution Management*, 35 (9), 703 – 719.
- Karahanna, E & Straub, D.W. (1999). The psychological origins of perceived usefulness and ease-of-use, *Information & Management* 35, 237-250.
- Keen, C., Wetzels, M., de Ruyter, K. & Feinberg, R. (2004). E-tailers versus retailers: which factors determine consumer preferences, *Journal of Business Research*, 57 (7), 685-695.
- Keil, M., Beranek, P., & Konsynski, B (1995). Usefulness and ease of use: Field study evidence regarding tasks considerations, *Decision support systems*, 13(1), 75-91

- Kent, R (2007). *Marketing Research: Approaches, Methods and Applications in Europe*, London: Thomson Learning.
- Khan, M (2006). *Consumer Behaviour and Advertising Management*: New Delhi, New Age International Limited, Publishers.
- Khatibi, A., Haque, P & Karim, K (2006): “E-Commerce: A study on internet shopping in Malaysia”, *Journal of Applied Sciences*, 6, 696-705
- Kim, D.J., Ferrin, D. L & Rao, H.R (2008). A trust-based consumer decision-making model in electronic commerce: The role of trust, perceived risk, and their antecedents, *Decision Support Systems* 44, 544–564.
- Kim, J & Forsythe, S (2010). Factors affecting adoption of product virtualization technology for online consumer electronics shopping, *International Journal of Retail & Distribution Management*, 38 (3), 190 – 204.
- Kim, S., Williams, R & Lee, Y. (2003). Attitude toward online shopping and retail website quality: a comparison of US and Korean consumers, *Journal of International Consumer Marketing*, 16(1), 189-203.
- Kimery, K.M., & McCord, M. (2002). Third-party assurances: mapping the road to trust in e-retailing, *Journal of Information Technology Theory and Application* 4 (2), 63–81.
- Kirk, R. E. (1996). Practical significance: A concept whose time has come. *Educational and Psychological Measurement*, 56(5), 746-759.
- Klein, L. (1998). Evaluating the Potential of Interactive Media Through a New Lens: Search Versus Experience Goods, *Journal of Business Research*, 41, (March) 195–203.
- Klopping, I.M., & McKinney, E (2004). Extending the Technology Acceptance Model and the Task-Technology-Fit Model. *Information Technology, Learning, and Performance Journal*; Spring, 22(1), 35-48.
- Knauper, B., & Turner, P.A. (2003). Measuring health: Improving the validity of health assessments. *Quality of Life Research*. 12, (Suppl.1), 81-89.
- Koller, M. (1988). Risk as a determinant of trust”, *Basic and Applied Social Psychology*, 9 (4), 265–276.
- Korgaonkar, P.K., & Wolin, L.D. (1999). A multivariate analysis of Web usage, *Journal of Advertising Research*, 39(2), 53-68.
- Kothari, C.R., & Garg, G (2014). *Research Methodology: Methods and Techniques* (3<sup>rd</sup> ed), New-D: New Age International (P) Limited, Publishers.
- Kotler, P. (2003). *Marketing management* (Eleventh ed.), Prentice Hall.

- Kotler, P., & Armstrong, G. (2004). *Principles of marketing*, Delhi India: Pearson education, Inc.
- Kotler, P., & Bloom, P. (1984). *Marketing professional services*. Englewood Cliffs, NJ: Prentice-Hall.
- Ladipo, P.K.A. (2006). *The Marketing Management Process*, Shomolu: Solna Paly Commercial Printing Press Limited.
- Lambert, N.M., Negash, S., Stillman, T.F., Olmstead, S.B., & Fincham, F.D. (2012). A love that doesn't last: Pornography consumption and weakened commitment to one's romantic partner. *Journal of social and Clinical Psychology*. 31(4), 410-438
- Lancaster, G., & Massingham, L. (2011). *Essentials of Marketing Management*: New York, Routledge.
- Langer, E.J. (1989). *Mindful reading*, Reading, MA: Merloyd Lawrence Books.
- Laroche, M., Bergeron, J & Goutaland, C. (2001). A three-dimensional scale of intangibility, *Journal of Service Research*, 4(1), 26–38.
- Laroche, M., Yang, Z., McDougall, G.H.G & Bergeron, J (2005). Internet Versus Bricks and Mortar Retailers: An Investigation into Intangibility and Its Consequences, *Journal of Retailing*, 81 (1), 251–267.
- Lederer, A.L., Maupin, D.J., Sena, M.P. & Zhuang, Y. (2000). The technology acceptance model and the world wide web, *Decision Support Systems*, 29, 269-82.
- Lee, M.K.O & Turban, E (2001). A trust model for consumer Internet shopping, *International Journal of Electronic Commerce*, 6(1), 75-91.
- Lee, D., Park, J., & Ahn, J (2001). On the explanation of factors affecting e-commerce adoption, in: Proceedings of the 22<sup>nd</sup> International Conference on Information Systems (ICIS), New Orleans, LA, 109-120.
- Legris, P., Ingham, J. & Collerette, P (2003). Why do people use information technology? A critical review of technology acceptance model. *Information and Management*, 40(3), 191-204.
- Levy, S. (1999). How the Internet Is Changing America, in *Levy: E-Life*, 38-42.
- Lewis, W., Agarwal, R., & Sambamurthy, V. (2003). Sources of influence on beliefs about information technology use: an empirical study of knowledge workers, *MIS Quarterly* 27(4), 657–678.

- Li, H., Kuo, C., & Russell, M. (1999). The Impact of perceived Channel Utilities, Shopping Orientations, and demographics on the Consumer's Online Buying Behaviour, *Journal of Computer Mediated Communications*, 5(2).
- Li, N., & Zhang, P. (2002). Consumer online shopping attitudes and behavior: an assessment of research, *Eighth Americas Conference on Information Systems*.
- Lian, J.-W., & Lin, T.-M. (2008). Effects of consumer characteristics on their acceptance of online shopping: Comparisons among different product types, *Computers in Human Behavior* 24, 48–65.
- Liang, T. P., & Huang, J. S. (1998). An empirical study on consumer acceptance on products in electronic markets: A transaction cost model, *Decision Support Systems*, 24, 29–43.
- Liang, T. P. & Lai, H. J. (2002). Effect of store design on consumer purchases: an empirical study of on-line bookstores, *Information and Management*, 39(6), 431–444.
- Lim, W.M., & Ting, D.H. (2012). E-shopping: an Analysis of the Technology Acceptance Model, *Modern Applied Science*, 6(4) (April).
- Liska, A.E. (1984). A critical examination of the causal structure of the Fishbein-Ajzen Model, *Social Psychology Quarterly*, 47, 61-74.
- Liu, C., & Forsythe, S. (2010). Post-adoption online shopping continuance, *International Journal of Retail & Distribution Management*, 38(2), 97 – 114.
- Lohse, G.L., & Spiller, P. (1998). Electronic shopping", *Communications of the ACM*, 41, 81 – 87.
- Lucas, H.C.J., & Spittler, V.K. (1999). Technology use and performance: a field study of broker workstations, *Decision Sciences*, 30, 291–311.
- Lukas, B., Hair, J., & Ortinau, D. (2004). *Marketing Research*. North Ryde, N.S.W: McGraw-Hill.
- Lynne, G. D. (1995). Modifying the neo-classical approach to technology adoption with behavioural sciences models, *Journal of Agricultural and Applied Economics* 27:67-80.
- Mahajan, V., Muller, E & Bass, M. (1990). New product diffusion models in marketing: A review and directions for research, *Journal of Marketing*, 54 (January), 1-26.
- Mahmood, M. A., Bagchi, K., & Ford, T. C. (2004). On-Line Shopping Behavior: Cross Country Empirical Research, *International Journal of Electronic Commerce*, 9(1), 9-30,
- Manning, K. C., Bearden, W. O., & Madden, T. J. (1995). Consumer innovativeness and the adoption process, *Journal of Consumer Psychology*, 4 (4), 329–345.



- Mathieson, K. (1991). Predicting user intentions: comparing the technology acceptance model with the theory of planned behavior, *Information Systems Research* 2(3), 1991, pp. 173-191.
- McCloskey, D. (2004). Evaluating electronic commerce acceptance with the technology acceptance model, *Journal of Computer Information Systems*, 44(22), 49- 57.
- McKechnie, S., Winklhofer, H. & Ennew, C. (2006), Applying the technology acceptance model to online retailing of financial services, *International Journal of Retail & Distribution Management*, 34( 4/5), 388-410.
- McKemey, K. & Saky-Dawson, O.A. (2000). *Rice Crop Protection Technology Uptake Blockages Amongst Rice Farmers in Ghana: with Particular Reference to Variety Adoption and the Reduction of Pesticide Use*. Legon, Ghana, University of Legon, Ghana.
- Menard, S. (1995). Applied logistic regression analysis. Sage University Paper Series on Quantitative Applications in the Social Sciences, 07-106. Thousand Oaks, CA: Sage.
- Meuter, M.L., Ostrom, A.L., Bitner, M.J & Roundtree, R. (2003). The influence of technology anxiety on consumer use and experiences with self-service technologies, *Journal of Business Research*, Vol.56, pp. 899-906.
- Midgley, D., & Dowling, G. (1978). Innovativeness: The Concept and Its Measurement, *Journal of Consumer Research*, 4, 229-242
- Mitchell, V.-W (1992). Understanding consumers' behavior: can perceived risk theory help?, *Management Decision* 30 (2), 26–31.
- Miyazaki, A.D & Fernandez, A. (2001). Consumer perceptions of privacy and security risks for online shopping, *The Journal of Consumer Affairs*, Vol. 35 No. 1, pp. 27-44.
- Molla, A & Licker, P.S. 2005. E-commerce Adoption in Developing Countries: a Model and Instrument.42.
- Monuwe, T.P.Y., Dellaert, B.G.C & Ruyter, K.D. (2004). What drives consumers to shop online? A literature review, *International Journal of Service Industry Management*, 15 (1): 102-121
- Moon, J.-W & Kim, Y.-G (2001). Extending the TAM for a World-Wide- Web context, *Information & Management* 38, 217–230
- Moore, G. (1995). *Crossing the chasm*, New York: Harper Business
- Moseley, S. F. (2004). Everett Rogers' diffusion of innovations theory: Its utility and value in public health, *Journal of Health Communication*, 9, 149–151.

- Myers, R. (1990). *Classical and modern regression with applications* (2<sup>nd</sup> Ed.). Boston, MA: Duxbury.
- Nelson, P (1970). Information and consumer behavior, *Journal of Political Economy*, 78(2), 311–329.
- Nelson, P (1974). Advertising as information, *Journal of Political Economy*, 82(4), 729–754
- Nie, N., & Erbring, L (2000). *Internet use*, Stanford Institute for the Quantitative Study of Society, California.
- Nunnally, J. (1967). *Psychometric Theory*, New York: Mc-Graw Hill.
- Nunnally, J. (1978). *Psychometric Theory*, 2<sup>nd</sup> edition, New York:McGraw-Hill
- Nwokpoku, J (2016, April 25). 73% e-commerce transactions in Nigeria happened on smartphones in Q1. *Vanguard*. Retrieved from <http://www.vanguardngr.com>
- O’Cass, A & Fenech, T. (2003). Web retailing adoption: Exploring the future of Internet users web retailing behavior, *Journal of Retailing and Consumer Services*, 10(2), 81–94.
- Oghojafor, B.E.A., Ladipo, P.K.A & Nwagwu, K.O. (2012). Outlet Attributes as Determinants of Preference of Women between a Supermarket and a Traditional OpenMarket, *American Journal of Business and Management*, 1(4), 230-240.
- Oghojafor, B.E.A., & Nwagwu, K.O (2013). Choice of Shopping Outlets for Grocery products and the Socio-Economic Profile of Female Consumers in Lagos Nigeria, *Journal of Sustainable Development Studies*, Vol. 4, No. 2, 88-113
- Oguntunde, T., & Oyeyipo, T. D. (2012). Abandonment Factors Affecting e-Commerce Transactions in Nigeria, *International Journal of Computer Applications*, 46(23), 41-47
- Ovia J (2008). The role of banks in promoting e-commerce in Nigeria. Internet Group Seminar. Golden Gate Restaurant, Lagos, Nigeria.
- Pallant, J. (2013). *SPSS Survival manual: A step by step guide to data analysis using SPSS* (5<sup>th</sup> Ed.). New York: McGraw-Hill.
- Pastore, M. (2001). Women Maintain Lead in Internet Use, *CyberAtlas June, 18*. Retrieved August 15th, 2015 from: <http://cyberatlas.internet.com>.
- Pavlou, P. (2003). Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model, *International Journal of Electronic Commerce*, 7(3), 69–103.

- Pavlou, P.A., & Fygenon, M. (2006). Understanding and Predicting Electronic Commerce Adoption: An extension of the Theory of Planned Behaviour, *MIS Quarterly*, 30(1) (March), 115-143.
- Pavri, F. (1988). An empirical investigation of the factors contributing to microcomputer usage, *Dissertation*, University of Western Ontario,
- Payne, J.W., Bettman, J., & Johnson, E.J. (1993). *The Adaptive Decision Maker*. New York: Cambridge University Press.
- Peter, J.P & Ryan, M. (1976). An investigation of perceived risk at the brand level, *Journal of Marketing Research*, 13 PP.184–188.
- Peterson, R. A., Balasubramanian, S., & Bronnenberg, B. J. (1997). Exploring the implications of the Internet for consumer marketing, *Journal of Academy of Marketing Science*, 25(4), 329–346.
- Phau, I., & Poon, S.M. (2000). Factors influencing the types of products and services purchased over the internet, *Internet Research- Electronic Networking Applications and Policy* 10 (2), 102–113.
- Popkins, N. C. (1998): *The five-factor model: Emergence of a taxonomic model for personality psychology*. Retrieved March 8th, 2015 from: <http://www.personalityresearch.org>
- Porter, C., & Donthu, N (2006).Using the technology acceptance model to explain how attitudes determine internet usage: the role of perceived access barriers and demographics, *Journal of Business Research*, 59(9), 999-1007.
- Poynter, R (2010). *Handbook of Online and Social Media Research: Tools and Techniques for Market Researchers*. Wiley, p 11. Retrieved November 2nd, 2015 from <http://site.ebrary.com/id/10419045?ppg=11>
- Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS PROCEDURES for estimating indirect effects in simple mediation models. *Behaviour Research Methods Instruments & Computers*, 36(4), 717- 731
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behaviour Research Methods*, 40(3), 879- 891
- Preacher, K. J., & Kelley, K. (2011). Effect size measures for mediation models: Quantitative strategies for communicating indirect effects. *Psychological Methods*, 16(2), 93-115. doi: 10.1037/a0022658
- Price, L. L. & Ridgway, N. M. (1983). Development of a scale to measure use innovativeness. In: R. P. Bagozzi & A. M. Tybout (Eds), *Advances in Consumer Research*, 10, 679–684.

- Raben, F (2010). Foreword to: *Handbook of Online and Social Media Research: Tools and Techniques for Market Researchers*. Wiley, p 11. Retrieved November 2nd, 2015 from: <http://site.ebrary.com/id/10419045?ppg=11>
- Ramayah, T & Ignatius, J. (2005). Impact of perceived usefulness, perceived ease of use and perceived enjoyment on intention to shop online, *ICFAI Journal of Systems Management*, 3(3), 36-51.
- Randall, D. M. (1989). Taking Stock: Can the Theory of Reasoned Action Explain Unethical Conduct? *Journal of Business Ethics*, 8(11), November, 873–882.
- Ratchford, B., Telukdar, D., & Lee, M. (2001). A model of consumer choice of the internet as an information source, *International journal of Electronic Commerce*, 5(3), 7-22(Spring).
- Reibstein, D.J. (1999). Who is buying on the Internet, 1999?, Working Paper, The Wharton School, University of Philadelphia, Philadelphia, PA.
- Rodgers, S. & Harris, M. (2003). Gender and E-Commerce: An Exploratory Study, *Journal of Advertising Research* 43(3), 322-330.
- Roehrich, G. (2004). Consumer innovativeness Concepts and measurements, *Journal of Business Research*, 57, 671– 677.
- Rogers, E. M. (1962). *Diffusion of innovations* (1st ed.). New York: Free Press.
- Rogers, E.M. & Shoemaker, F.F. (1971). *Communication of Innovations*, New York: The Free Press.
- Rogers, E.M. (1995). *Diffusion of Innovations*, New York: The Free Press.
- Rogers, E.M. (2003). *Diffusion of Innovations* (5th Edition). New York: Free Press.
- Rogers, E. M. (2004). A prospective and retrospective look at the Diffusion Model, *Journal of Health Communication*, 9, 13–19.
- Rogosa, D. (1981). On the relationship between the Johnson-Neyman region of significance and statistical tests of parallel within group regressions. *Educational and Psychological Measurement*, 4, 73-84.
- Rohm, A. & V. Swaminathan (2004). A typology of online shoppers based on shopping motivations, *Journal of Business Research*, 57(12), 748-757.
- Rose, G. & Straub, D. (1998). Predicting general IT use: applying TAM to the Arabic world, *Journal of Global Information Management*, 6(3), 39-46.

- Ruyter, K. D., Wetzels, M & Kleijnen, M. (2001). Customer adoption of e-service: An experimental study, *International Journal of Service Industry Management*, 12(2), 184–207.
- Saade, R & Bahli, B (2005). The impact of cognitive absorption on perceived usefulness and perceived ease of use in on-line learning: an extension of the technology acceptance model, *Information & Management* 42, 317–327
- Salisbury, W. D., Pearson, R. A., Pearson, A. W., & Miller, D. W. (2001). Perceived security and the World Wide Web purchase intention. *Industrial Management and Data Systems*, 101(4), 165-177.
- Saunders, M., Lewis, P., and Thornhill, A (2007): *Research Methods for Business Students*(4<sup>th</sup> ed). England: Pearson Education Limited.
- Sekaran, U. (2000). *Research Methods for Business: A Skill -Building Approach* (3<sup>rd</sup> ed.).New York: John Wiley & Sons, Inc.
- Selamat, Z., Jaffar, N & Ong, B. H. (2009). Technology acceptance in Malaysian banking industry, *European Journal of Economics, Finance and Administrative Sciences*, 1(17), 143-155.
- Schiffman, L. & Kanuk, L. (2004): *Consumer behavior*. 8th edition. Upper Saddle River, New Jersey: Pearson Prentice Hall.
- Schiffman, L. & Kanuk, L.(2007): *Consumer behavior*. 9th edition. Upper Saddle River, New Jersey: Pearson Prentice Hall.
- Schmitz, J & Fulk, J (1991): Organizational colleagues, media richness, and electronic mail: a test of the social influence model of technology use, *Communication Research*, 18(4), 487-523.
- Schneider, G. (2008). *Electronic Commerce*, 8th edition. Boston, USA: Cengage Learning.
- Schonfeld, E. (2010). Forrester Forecast: online retail sales will grow to \$250 billion by 2014. *Techcrunch*.
- Sefton, D. (2000). The Big Online Picture: Daily Web Surfing Now the Norm. *USA Today*, March 22
- Shammout, A. B. (2007). Evaluating an Extended Relationship Marketing Model for Arab Guests of Five-Star Hotels” Ph.D thesis submitted to Victoria University Melbourne.
- Shaughnessy, J., & Zechmeister, E. B. (1997).*Research Methods in Psychology* (4<sup>th</sup>ed.).New York: McGraw-Hill
- Sheppard, B.H., Harwick, J. & Warshaw, P.R (1988). The theory of reasoned action: a meta - analysis of past research with recommendation for modifications and future research, *Journal of Consumer Research* 15(3), 325–343.

- Shih, H.-P (2004). An empirical study on predicting user acceptance of e-shopping on the Web, *Information and Management*, Vol. 41 (3): 351-368.
- Shim, S., Eastlick, M. A., Lotz, S. L & Warrington, P. (2001). An on-line prepurchase intentions model: The role of intention to search, *Journal of Retailing*, 77(3), 397–416.
- Shimp, T.A & Kavas, A (1984). The theory of reasoned action applied to coupon usage, *Journal of Consumer Research*, 11, 795-809.
- Shyu, S. H. P & Huang, J. H. (2011). Elucidating usage of e-government learning: a perspective of the extended technology acceptance model, *Government Information Quarterly*, 28(4), 491-502.
- Sobel, M. E. (1982). Asymptotic intervals for indirect effects in structural equations models. In S. Leinhardt (Ed.), *Sociological Methodology*, 1982 (pp.290-312), San Francisco: Jossey-Bass.
- Sorce, P., Perotti, V., & Widrick, S. (2005). Attitude and age differences in online buying, *International Journal of Retail & Distribution Management*, 2005; 33(2/3):122–33.
- Stafford, T. F., Turan, A & Raisinghani.M.S (2004). International and Cross-Cultural Influences on Online Shopping Behavior, *Journal of Global Information Management*, 7, 2: 70-87.
- Stead, M., Tagg, S., MacKintosh, A.M & Eadie, D. (2005). Development and evaluation of a mass media Theory of Planned Behaviour intervention to reduce speeding, *Health Education Research: Theory & Practice*, 20(1),36–50.
- Steenkamp, J.-B.E.M., Hofstede, F & Wedel, M. (1999). A Cross-National Investigation into the Individual and National-Cultural Antecedents of Consumer Innovativeness, *Journal of Marketing*, April, 63, 2, 55-69.
- Stevens, J.P. (2002). *Applied multivariate statistics for the social sciences* (4<sup>th</sup> ed.). Hillsdale, NJ: Erlbaum.
- Strauss, J. & Frost, R. (1999). *Marketing on the Internet: Principles of Online Marketing*, Upper Saddle River, NJ: Prentice Hall Inc.,
- Streiner, D. L., Norman, G. R.,& Cairney, J. (2015). *Health measurement scales: a practical guide to their development and use*. Oxford, UK: Oxford University Press
- Studenmund, A. H., & Cassidy, H. J. (1987). *Using Econometrics: A practical guide*. Boston: Little, Brown.
- Sulaiman, A., Ng, J & Mohezar, S (2008). E-Ticketing as a New Way of Buying Tickets: Malaysian Perceptions, *Journal of Social Science*, 17(2): 149-157.

- Susskind, A. (2004). Electronic Commerce and World Wide Web Apprehensiveness: An Examination of Consumers' Perceptions of the World Wide Web, *Journal of Computer-Mediated Communication*, 9(3).
- Taiwo, A.A & Downe, A.G. (2013). The theory of user acceptance and the use of technology (UTAUT): Meta Analytic review of empirical finding. *Journal of theoretical and Applied information technology*, 49(1), 48-58.
- Taylor, J. W. (1974). The role of risk in consumer behavior, *J Mark*, 38:54 – 6 (April).
- Teo, T. S. H. (2001). Demographic and motivation variables associated with Internet usage activities, *Internet Research*, 11(2), 125-137.
- Teo, T. H. (2006). To buy or not to buy online: adopters and non-adopters of online shopping in Singapore, *Behaviour & Information Technology*, Vol. 25, No. 6, November – December, pp. 497 – 509.
- Teo, T & Zhou, M. (2014). Explaining the intention to use technology among university students: a structural equation modeling approach, *J Comput High Educ* 26: pp.124–142
- Thompson, R.L., Higgins, C.A., & Howell, J.M. (1994). Influence of Experience on Personal Computer Utilization: Testing a Conceptual Model, *Journal of Management Information System*, 11(1), 167-187.
- Tlou, E.R. (2009). The application of the theories of reasoned action and planned behaviour to a workplace HIV/AIDS health promotion programme, PhD thesis, Retrieved November 2nd, 2015 from: [http://uir.unisa.ac.za/bitstream/handle/10500/3182/thesis\\_tlou\\_e.pdf?...](http://uir.unisa.ac.za/bitstream/handle/10500/3182/thesis_tlou_e.pdf?...)
- Todd, P., & Benbasat, I. (1991). An experimental investigation of the impact of computer based decision aids on the decision making process, *Inform. Systems Res.* 2(2) 87-115.
- Todd, P., & Benbasat, I. (1992). An experimental investigation of the impact of computer based DSS on processing effort, *MIS Quart.* 16(3) 373-393.
- Todd, P., & Benbasat, I. (1993). Decision-makers, DSS and decision making effort: An experimental investigation, *INFOR*, 31(2) 1-21.
- Todd, P., & Benbasat, I. (1994). The influence of DSS on choice strategies: An experimental analysis of the role of cognitive effort, *Organ. Behavior and Human Decision Processes* 60, 36-74.
- Tong, X. (2010). A cross-national investigation of an extended technology acceptance model in the online shopping context, *International Journal of Retail & Distribution Management*, 38 (10) 742 – 759.

- Trafimow, D., & Finaly, K. A. (2002). The prediction of attitudes from beliefs and evaluations: the logic of double negative, *British Journal of Social Psychology* 41, 77-86.
- Tull, D. S., & Hawkins, D. I. (1990). *Marketing Research: Meaning, Measurement, and Method: A text with Cases* (5th ed.). New York: Macmillan.
- Ubabukoh, O. (2015, December 23). Poor Internet Connection Sounds Death Knell For Businesses. *Punch*. Retrieved from <http://www.punchng.com>
- Ubabukoh, O. (2016, March 05). Jumia gets N64bn funding from MTN, Goldman. *Punch*, 56.
- Udeji, C. (2016, May 15). Only 9% of Nigerians shop online. *Punch*, 10.
- United Nations Conference on Trade and Development (UNCTAD) (2002). E-commerce and development report. Retrieved November 2nd, 2015 from: [http:// www.unctad.org/en/docs/ecdr2004overview\\_en.pdf](http://www.unctad.org/en/docs/ecdr2004overview_en.pdf)
- Van Slyke, C., Comunale, C., & Belanger, F. (2002). Gender differences in perceptions of Web-based shopping, *Communications of the ACM*, 45(7), 82-86.
- Vazquez, D., & Xu, X. (2009). Investigating linkages between online purchase behaviour variables, *International Journal of Retail & Distribution Management*, 37(5), 408 – 419.
- Vellido, A., Lisboa, P., & Meehan, K. (2000). Quantitative characterization and prediction of online purchasing behavior: a latent variable approach, *International journal of Electronic Commerce*, 4(4), 83-104,(Summer).
- Venkatesh, V. (1999). Creation of favorable user perceptions: exploring the role of intrinsic motivation, *MIS Quaterly*, 23, 239-260.
- Venkatesh, V. (2000). Determinants of perceived ease of use: integrating control, intrinsic motivations, and emotion into the technology acceptance model, *Information System Research*, 11(4), 342-65.
- Venkatesh, V., & Davis, F.D. (1994). Modeling the Determinants of Perceived Ease of Use, *Proceedings of the 15th Annual Conference on Information Systems*, 213-227.
- Venkatesh, V., & Davis, F.D. (1996). A model of the antecedents of perceived ease of use: development and test, *Decision Sciences*, 27(3), 451–481.
- Venkatesh, V. (1999). Creation of Favorable User Perceptions: Exploring the Role of Intrinsic Motivation, *MIS Quarterly* (23:2), 239-260.
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425–478.



- Venkatraman, M.P., & Price, L.P. (1990). Differentiating between cognitive and sensory innovativeness: concepts, measurement and their implications, *Journal of Business Research*, 20, 293-315.
- Vijayasathy, L.R. (2002). Product characteristics and internet shopping intentions, *International Research: Electronic Networking Applications and Policy* 12 (5), 411–426.
- Vijayasathy, L.R. (2004). Predicting consumer intentions to use on-line shopping: the case for an augmented technology acceptance model, *Information & Management*, 41(6), 747-62.
- Weathers, D., Sharma, S., & Wood, S.L. (2007). Effects of online communication practices on consumer perceptions of performance uncertainty for search and experience goods, *Journal of Retailing*, 83 (4), 393–401.
- Westbrook, R. A., & Black, W. C. (1985). A motivation-based shopper typology, *Journal of Retailing*, 61 (Spring), 78–103.
- Willimack, D.K., Nichols, E., & Sudman, S (2002). Understanding unit and item nonresponse in business surveys, in Dillman, D.A., Eltringe, J. L. And Little, R.J.A (eds) (2002)*Survey Nonresponse*, New York, Wiley Interscience, 213-227.
- Wood, S. L. (2002). Future fantasies: a social change perspective of retailing in the 21<sup>st</sup> century, *Journal of Retailing*, 78(1), 77.
- Wu, J.H., & Wang, S.C. (2005). What drives mobile commerce? An empirical evaluation of the revised technology acceptance model, *Information and Management* 42(5), 719–729.
- Yamane, T. (1967). *Statistics: An Introductory Analysis* (2<sup>nd</sup> ed.) New York: Harper and Row
- Yi, M.Y., Jackson, J.D., Park, J.S., & Probst, J.C. (2006). Understanding information technology acceptance by individual professionals: Toward an integrative view, *Information & Management*, (43), 350–363.
- Yi, M.Y., & Hwang, Y. (2003). Predicting the use of web-based information systems: self-efficacy, enjoyment, learning goal orientation, and the technology acceptance model, *Int. J. Human-Computer Studies*, 59, 431–449.
- Yin, R. K. (1994). *Case Study Research: Design and Methods* (2nd ed.). Beverly Hills, CA: Sage Publications.
- Yoh, E., Damhorst, M.L., Sapp, S. & Laczniak, R. (2003), Consumer adoption of the internet: the case of apparel shopping, *Psychology & Marketing*, 20(12), 1095-1118.

- Yörük1, D., Dündar, S., Moga, L.M & Neculita, M. (2011). Drivers and Attitudes towards Online Shopping: Comparison of Turkey with Romania, *Communications of the IBIMA*.
- Yousafzai, S.Y., Pallister, J.G., & Foxall, G.R. (2003). A proposed model of e-trust for electronic banking, *Technovation*, 23, 847-60.
- Yuslihasri, I. A., & Daud, A. K. (2011). Factors that influence customers buying intention on shopping online, *International Journal of Marketing Studies*, 3(1), 128-143
- Zaltman, G., & Wallendorf, M. (1983). *Consumer Behavior*, New York: Wiley.
- Zatalman, G., & Burger, P. C. (1975). *Marketing Research-Fundamentals and Dynamics*. Hinsdale, IL: The Dryden Press.
- Zarrad, H., & Debabi, M. (2012). Online Purchasing Intention: Factors and Effects, *International Business and Management*,4(1), 37-47.
- Zeithaml, V. A., & Bitner, M. J. (2000): *Services marketing: Integrating customer focus across the firms* (2<sup>nd</sup>ed.). New York: McGraw-Hill
- Zhou, L., Dai, L., & Zhang, D. (2007): Online shopping acceptance model: A critical survey of consumer factors in online shopping, *Journal of Electronic Commerce Research*,8(1), 43-62.
- Zikmund, W. G. (2003). *Exploring Marketing Research*. Cincinnati, Ohio: Thomson/South Western.
- Zwass, V. (1998). Structure and macro-level impacts of electronic commerce: from technological infrastructure to electronic market places. In K.E. Kendall (Ed.), *Emerging Information Technologies*, CA: Sage, 289-315.