DESIGNING A MODEL FOR IMPROVING ONLINE RETAILING PERFORMANCE: A STUDY OF SELECTIVE ONLINE RETAILERS IN NORTH INDIA

For the Degree of Doctor of Philosophy

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DECLARATION

I hereby declare that this thesis "DESIGNING A MODEL FOR IMPROVING ONLINE RETAILING PERFORMANCE: A STUDY OF SELECTIVE ONLINE RETAILERS IN NORTH INDIA" is an original work done by me for the award of Degree of Philosophy in Management. I also declare that this thesis or any other part of it has not been submitted by me for the award of any degree, diploma, title or recognition before.

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CERTIFICATE

Certified that the thesis entitled, "*DESIGNING A MODEL FOR IMPROVING ONLINE RETAILING PERFORMANCE: A STUDY OF SELECTIVE ONLINE RETAILERS IN NORTH INDIA*" which is being submitted by Ms Urvashi Tandon in fulfilment of the requirements for the award of Degree of Doctor of Philosophy in Management, Thapar University, Patiala is a record of candidate's own work, carried out by her under our own supervision and guidance. The matter embodied in this thesis has not been submitted in part or full to any other University or Institute for the award of any degree.

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Date: 31 August 2017

Acknowledgements

"Go-on: remember –patience and purity and courage and steady work.....So long as you are pure, and true to your principles, you will never fail." ***-Swami Vivekananda***

One of the joys of completion is to look over the past journey and remember and thank everyone who has in some way or the other motivated and facilitated me to achieve my goals.

Foremost, I would like to express my deepest gratitude to the Almighty for showering His choicest blessings on me and steering me through this incredible and exciting journey. God always answered my sincere prayers and imparted me with contentment, satisfaction and courage to solve intricacies of life.

I fall short of words to acknowledge the invaluable contributions of my revered supervisors Dr (Ms) Ravi Kiran, Professor and Former Head, School of Humanities and Social Sciences, Thapar University, Patiala and Dr A.N. Sah, Asst. Professor, School of Humanities and Social Sciences, Thapar University, Patiala for supporting me throughout my thesis with their patience and knowledge. Fortunately, I have benefitted from their extraordinary motivation, vast experience, great intuition, immense knowledge and technical insight.

I am also grateful to Prof. Prakash Gopalan, Director, Thapar University, Patiala, Dr Santha Kumari, Head, SHSS, Thapar University and Dr O.P. Pandey, Dean (Research and Sponsored Projects) for providing me motivating and learning environment. I am also grateful to Dr Rakesh Sharma, Dr Anil Sharma and Dr Aporva Bakshi, members of my Doctoral Committee for providing valuable inputs.

On a personal note I am equally indebted to my father Mr V.K. Tandon and my mother Dr Sudesh Tandon for their endless support, guidance, trusted advice and unconditional love and inspiration since my childhood. My heartfelt regard goes to my mother-in-law Mrs Chanderprabha Gupta and Mr V.B. Gupta for their moral support and sharing my responsibilities during this entire course of reseach. A sincere note of thanks to my husband Mr Yogesh Gupta for his eternal support and understanding my ambitions and goals. I would like to thank my children Akshit and Atharv for their constant support oblivious of their needs for my time and attention.

Sometimes words are limited to express deep and hearty regards for an inspirational experience of life. I feel myself lucky to have come near the milestone which I desperately wanted and finalizing this research is one of the beautiful moments of life.

My sincere thanks to managers of online retailers as well as all the respondents for their cooperation and providing me authentic information. Lastly, I would like to take this opportunity to thank all who have contributed in this research in any way.

Urvashi

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INDEX

ABSTRACT

Due to highly interactive nature triggered by internet communication, a number of new opportunities have been created and it has enabled entrepreneurs to conduct business transactions online without meeting in person. This gave birth to a new technology, recognized universally as electronic commerce (e-Commerce). E-commerce and e-marketing are the two important items in the new internet based business domain. Extensive research has been conducted on retailers in offline environment but to help the managers in online environment it is imperative to understand the success factors that will instil confidence among the consumers in emerging economies to adopt online retailing in their daily purchase. But the economic condition of most developing countries is far different from those in developed countries (Upadhyay, 2013). In contrast to developed countries, e-business infrastructure is extremely underdeveloped in emerging countries. Consequently, the models put forward for developed countries need to be validated in developing countries for broader acceptance. Thus, against this backdrop the purpose of this research is to arrive at an inclusive model of online retailing explicitly for emerging economies.

The primary purpose of this study is to understand the factors which increase the performance of online retailers. Therefore, the present study integrates all the three dimensions viz., website functionality, drivers of online shopping and perceived risk to have an understanding of their impact on customer satisfaction which in-turn increase the performance of online retailers. The study also attempts to understand dimensions of Supply chain management of online retailers.

To meet the above objectives this research analyzes website functionality, perceived risk and drivers of online shopping to evaluate their impact on customer satisfaction in India. The study also empirically validates ease of ordering, cash-on-delivery mode of payment with UTAUT2 (Unified theory of acceptance and use of technology2) as new drivers of online shopping A sample of 500 online shoppers was collected through survey and analyzed using structural equation modelling. Website functionality emerged as a multidimensional construct significantly predicted by security and privacy, navigation characteristics, website design and customization. The important dimension of SCM emerged from the study include Strategic supplier relationship, CRM, Information sharing and delivery dependability. Performance expectancy, effort expectancy, social influence, hedonic motivation, facilitating conditions, COD and ease of ordering emerged drivers of online retailing. The main variables of perceived risk emerged from this study are financial risk, performance risk, social risk,

privacy risk and time risk. Results of the study revealed that perceived risk had a negative relation with customer satisfaction where as the website functionality and drivers were positively associated with customer satisfaction. The research will help online retailers to recognize the important success factors that inculcate confidence among the customers in developing economies. The study will also help online retailers to focus in the right direction to eliminate threats and convert non shoppers to online shoppers. The study throws light on a new aspect to research by validating the role of ease of ordering and cash-on-delivery (COD) mode of payment as a construct and new dimensions to UTAUT2.

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

AMOS	Analysis of Moment Structures
AVE	Average Variance Extracted
B2B	Business to Business
B2C	Business to Consumer
CFA	Confirmatory Factor Analysis
COD	Cash-on-Delivery
CR	Composite Reliability
CRM	Customer Relationship Management
CTT	Commitment-trust theory
e-PDSQ	Electronic Physical Distribution service Quality
ERP	Enterprise Resource Planning
FDI	Foreign Direct Investment
fsQCA	Applied fuzzy-set Qualitative Comparative Analysis
GDP	Gross Domestic Product
GOF	Goodness of Fit
GST	General System Theory'
IAMAI	Internet and Mobile Association of India, 2012
ICRIER	Indian Council for Research and International Economic Relations
IDT	Innovation Diffusion Theory
IS	Information System
IT	Information Technology
KSRM	Key Supplier Relationship Management
LCC	Low Cost Carriers
SCM	Supply Chain Management
SCMIS	Supply Chain Management Information System
SCP	Supply Chain Performance
SCT	Social Cognitive Theory
SEM	Structural Equation Modelling
SPSS	Statistical Package for Social Sciences
SRM	Supplier Relationship Management
TAM	Technology Acceptance Model
TPB	Theory of Planned Behavior

TRA	Theory of Reasoned Action
TTF	Task-technology Fit Model
UTAUT	Unified theory of acceptance and use of technology
UTAUT2	Unified theory of acceptance and use of technology 2

CHAPTER – I

INTRODUCTION

This chapter introduces 2the research problem. Introduction of the topic is outlined in Section 1.1. Section 1.2 includes the evolution and development of online retailing. In Section 1.3, current Indian scenario of online retailing has been highlighted. Section 1.4 presents the theoretical background and models of technology acceptance. Section 1.5 highlights the objectives of the research. Section 1.6 focuses on significance of the study. This is followed by section 1.7 which presents the implications of the research. Organization of the thesis is presented in Section 1.8.

1.1 Introduction

E-commerce has significantly evolved in the past two decades. Like in brick and kiln business in e-business too customer satisfaction has great significance for success of a company.

Due to highly interactive nature triggered by internet communication, a number of new opportunities have been created and it has enabled entrepreneurs to conduct business transactions online without meeting in person. This gave birth to a new technology, recognized universally as electronic commerce (e-Commerce). The purchasing and selling process using electronic mode is generally referred to as e-commerce. E-commerce and e-marketing are the quintessence of the current internet based business realm. E-marketing is concerned with the marketing side of e-commerce. Business organizations communicate, endorse, and sell goods and services using internet (Sople, 2011). The swift growth of online retailing in India reflects its advantages over traditional brick and mortar stores. This is primarily due to enhance market outreach, broaden product lines, faster and improved transactions, increased flexibility, convenience and customization (Srinivasan *et al.*, 2002). It might be a little difficult to acquire new customers in online retailing (Hoffman and Novak, 2000). Therefore, it becomes essential to satisfy the existing customers so that they make repeat purchases. Around 5 percent increase in customer retention can improve profits from 25 to 95 percent as highlighted by Reichheld and Schefte (2000). Extensive research has been conducted on retailers in offline environment but to facilitate the managers in online

environment it is imperative to comprehend the success factors that will instil confidence among the consumers in emerging economies to adopt online retailing in their daily purchase.

1.2 Evolution and development of online retailing in India

Internet was introduced in India in 1995 and the first wave of e-commerce started just subsequently. In 1996, the first online B2B directory was instigated. Business-to-Consumer (B2C) e-commerce also started approximately around 1996 by introducing matrimonial portals. This was followed by commencement of online 'recruitment portals'. But internet had yet to penetrate and the user base was also limited. Slow internet speed was one of main deterrent in the growth of e-business mode. Introduction of Low Cost Carriers (LCC) in the aviation sector gave a further enhancement to air travel in 2005. Travel related information, flight schedules and ticket booking facilities were assessable online. The Indian Railways also developed their portal for e-ticketing and ticket booking facilities were available online through portals. This changed the whole scenario of ticketing due to myriad of benefits like convenience, time saving and cost acquired of purchasing ticket from Railway Station or through agents. Customer satisfaction in e-ticketing sector gave confidence to entrepreneurs across the country to initiate e-retail which gave birth to online retailing. There is a tremendous possibility of expansion in online retail particularly when Indian government is targeting to make certain that every Indian owns a smart phone by year 2019. To stay ahead, many traditional and organized retailers like Shoppers stop, Croma retail, Metro shoes, etc. have entered e-retail to come at par with online retailers. Further, the recent government's initiative of promoting penetration of Internet on extensive scale throughout the country and allowing 100 percent FDI in e-commerce may increase the online retailing on a faster scale. Although, an increase has been witnessed in the growth of online retailing in India recently but it is less as compared to other countries like US and China, where it has taken a significant growth of over 150 Billion USD.

1.3 Current Indian scenario of online retailing

The retail industry in India is one of the largest one both in terms of employment and sales.. According to ICRIER (Indian Council for Research and Economic International Relations) estimates, it employs around 8 percent of the population and also accounts for 10 percent of India's Gross Domestic Product. Internet emergence and penetration has lead to active adoption of e-commerce. This has lead to people shifting to buying online especially products and services, especially travel, apparels, personal care products, jewellery,

electronic goods, digital cameras etc. As shown through table 1.1, online retailing in India is expanding at a fast pace and the estimated market is 14 Bn USD in 2012 and furthermore is expected to be 74 Bn USD by 2017 (Singh *et al.* 2012). Online retailing a meagre 0.1 percent is predicted to reach 2% by 2017). Online retailing also is breaking all records and was barely 3.8 Billion USD in 2009, increased to12.6 Billion USD in 2013 growing at an accelerated pace of 35 percent CAGR. If compared to other developed countries, the share represents a miniscule proportion (less than 1 percent of both organized and unorganized retail) against 9-10 percent in US and UK and around 4-5 percent in China (CRISIL Research, 2014; ASSOCHAM, 2014; Mahajan, 2015) and is poised for continuous accelerated growth in coming years. The aforesaid facts indicate that online retailing is firmly moving ahead to occupy a central space in the household purchasing by majority of internet using population in India. Cash-on-delivery mode of payment may be the reason for increase in online shopping and as quoted by Ernst and Young (2012), 80 percent of online shoppers rely on COD.

Table 1.1 Population with Information Technology penetration in India (Bn)

Particulars	2005	2012	2015	2020
Internet access	.025	.110	.300	.800
Mobile phones	.150	.930	1.000	1.100
Smart phone	.001	.040	.250	.450
Laptop and notebook	.001	.012	.050	.150

*Technopak Advisors Report, 2012

The role of information technology as a dominating sector in growth of Indian economy has also lead to focus on improved services as well as facilities to consumers (Kaur, 2014). Prevalence of rapid increase in e-commerce in India has been due to massive expansion of internet, wide usage of information technology and rapid increase in economic and fiscal sector (Paul and Trehan, 2011). Organized retailing, is more restricted to large cities, while the penetration of internet users as per IAMAI, (Internet and Mobile Association of India, 2012) is 48% in smaller cities (with population below 1 Mn). One-third of netizens dominated in top 8 metros in 2011. Equally important in this rapid expansion were factors like changing lifestyles making consumer more aware and conscious of latest brands, increased paying capacity especially due to massive increase in salaries due to pay revisions.

Cash on delivery enhanced and lured more shoppers in the online shopping lists. The e-tailors also came out with strategies for offering replacements options or giving points to purchase in future. All these factors are responsible for expansion, growth and development of e-shopping and e-commerce.

Online retailing has been growing at an overwhelming rate in India but methodical studies focussing on website functionality, drivers to online retailing and barriers to online retailing are missing. All these factors have been discussed separately but a comprehensive model covering all these aspects is not available in literature. Further, the Supply chain practices of online retailers have been neglected in literature. The market size of Indian online retail sector was $3.5 billion in 2014 but is expected to reach $76 billion by 2021. In year, 2012, approximately 120 million Indians accessed Internet once a month. Due to change in internet browsing behavior, Indian consumers not only dedicate longer hours on the Internet, but also perform activities other than accessing e-mails and casual browsing that were missing a few years ago. This immense user base can be acknowledged due to the efforts of social media, travel portals, online retailers and the adoption of Internet by government services like reservations in Indian Railways and filing of income tax returns online (Bisen and Singh, 2013). Online retailers over last few years have invested money, time to provide multiple means to consumers so that they can transact online through multiple means. Online retailers have initiated suitable online interfaces, attractive promotional offers and services like EMIs, cash-on-delivery etc., (Bisen and Singh, 2013). Rising aspirations, varying lifestyles, an increase in spending habit of people and consciousness about fashion trends have motivated people to shop online. Indian online retailing companies have witnessed an extended clientale in Tier 2 and Tier 3 cities and towns, which report approximately 50% of the sales.

1.4 Theoretical Background and Technology Acceptance Models

A summary of theories and models that have explicated adoption of technology are summarized as follows:

***Theory of Reasoned Action (TRA)*:** Fishbein and Ajzen (1975) suggested three general constructs, namely "behavioural intention (BI), attitude (A), and subjective norm (SN)". TRA focuses on behavioural intention of individuals. The behavioral intention depends upon the attitude and subjective norms. This theory highlights that usage of computers was linked with benefits derived from it.

***The Theory of Planned Behaviour (TPB)*:** This theory was propounded by Ajzen in 1991. Theory of Reasoned Action (TRA) provided the basis for this theory. Perceived Behavioural Control (PBC) was added to the constructs namely attitudes and subjective norms. PBC is related with the perception of people regarding the easiness or obscurity of performing the behaviour of interest.

Technology Acceptance Model (TAM): This was presented by Davis, and since its formulation in 1989 it has attracted the attention of researchers all over the world to understand the users' behavioral intention for accepting or rejecting a technology. Fishbein and Ajzen's (1975) theory of reasoned action is considered as the foundation theory underlying TAM. TAM model is based on two variables. The first predictor being perceived ease of use (PEOU) and the second predictor is perceived usefulness (PU). Dependent variable used in this theory was behavioral intention. TAM has been extremely used in research and has been modified by integrating variables like self efficacy (Taylor and Todd, 1995), trust (Wu et al., 2011), perceived value, trust, internet literacy and privacy (Razaei e*t al.,* 2014) and innovativeness and technology anxiety (Kim and Forsythe, 2007). The impact of culture on online shopping using TAM was examined by Smith *et al.,* (2011). However, few researchers recognize parsimonious nature of TAM as its key limitation (Tong, 2010). Table 1.2 depicts main contributions of the authors who made an effort to extend TAM by adding variables to it.

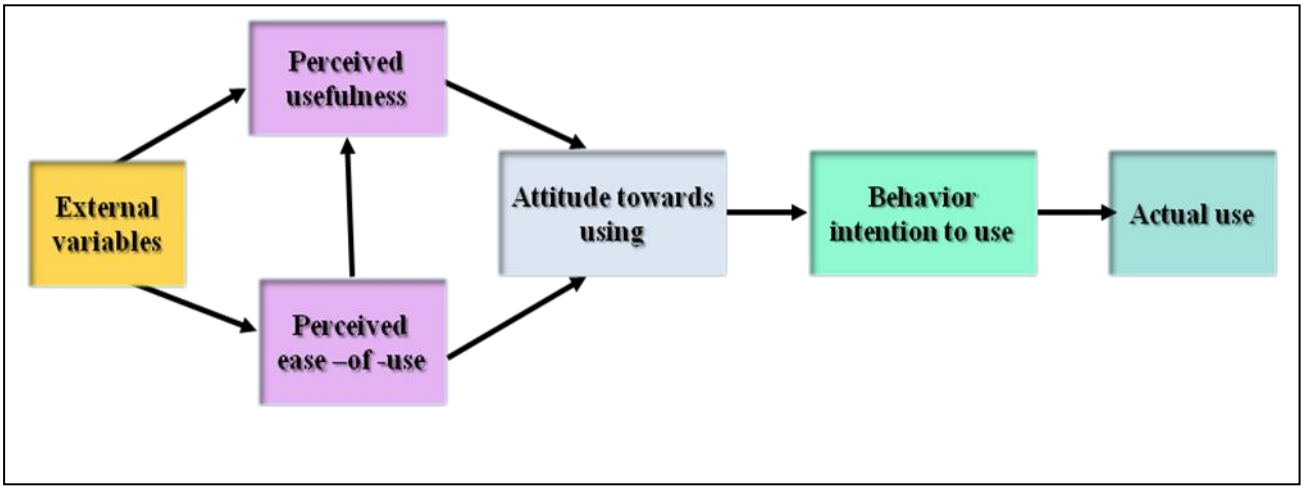


Figure 1.1 Technology Acceptance Model

Table 1.2: ***TAM and its extensions***

Author(s)	Main Contribution
Gefen and Straub(1997)	Extended TAM by introducing personality traits
Lucas and Spitler (1999)	Extended the model and included social norms, user performance and two control variables.
Childers *et al*., (2001)	Extended TAM by adding hedonic motivation
Gefen *et al*., (2003)	Modified model by adding trust
Featherman and Pavlou (2003)	Modified the model by adding perceived risk
Vijaysarathy(2004)	Included security and privacy
Davis and Venkatesh (2004)	Incorporated self-efficacy
Kim and Forsythe (2007)	Extended TAM by adding innovativeness and technology anxiety
Liao and Shi(2009)	Incorporated perceived risk, social influence and local retail market environment
Wu *et al.*, (2011)	Incorporated trust
Smith *et al*., (2011)	Studied culture using TAM
Chow *et al.*, (2012)	Introduced self-efficacy
Lee and Lehto (2013)	Extended the model by adding content richness
Razaei *et al*., (2014)	Included perceived value, trust, internal literacy and privacy concern
Tandon *et al.*, (2016)	Deepened the constructs of perceived usefulness and perceived ease of use.

Venkatesh and Davis (2000) modified TAM and developed TAM2. TAM2 had supplementary key constructs namely social influence processes. This included image, subjective norm and voluntariness. The second construct was cognitive in nature. It comprised of output quality, job relevance and result demonstrability. In TAM2, perceived ease-of-use was considered as determinant of perceived usefulness.

Unified theory of acceptance and use of technology: Venkatesh *et al.,* (2003) combined variables w.r.t. eight dominant theories and models and came out with Unified theory of acceptance and use of technology (UTAUT). These theories were: the Theory of Reasoned Action (TRA), the Technology Acceptance Model (TAM), the Motivational Model, the Theory of Planned Behaviour (TPB), a combined TBP/TAM, the model of PC Utilization, Innovation Diffusion Theory (IDT) and social cognitive theory (SCT). UTAUT is based on following core variables:

Performance expectancy is defined as "degree to which a person believes that using a system will lead to attain gains in job performance (Venkatesh *et al.*, 2012, pp.159). It is similar to perceived usefulness in TAM and relative advantage in DOI.

Effort expectancy is defined as, "ease associated with the use of system" (Venkatesh *et al.,* 2012, pp. 159). It is analogous with perceived ease of use in TAM and complexity in DOI.

Social influence covers other persons' perception about an individual using a system. It is where others perceive it crucial for him/her to use the system (Venkatesh *et al.,* 2012, pp. 159). This is categorized as subjective norm in TAM 2).

Facilitating conditions covers the degree of confidence regarding organizational and technical infrastructure support (Venkatesh *et al.,* 2012, pp. 159). It is analogous to perceived behavioral control in TAM-TPB.

The moderating variables, considered were gender, age, experience and voluntariness of use. A number of researchers have tested either the entire model or a part of it in diverse ethno-socio-economic scenarios as well as in different organizational settings in order to confirm its generalbility. UTAUT has been empirically validated and empirical evidential support is awarded. It has been considered superior to other models (Venkatesh *et al.,* 2003, Zhou, 2012). Furthermore, many researchers have attempted to examine UTAUT in new cultural settings viz., China (Lian and Yen, 2014), Iran (Yaprakli *et al.,* 2013) and in India (Sareen and Jain, 2014).

Adopting extensive exploratory techniques to understand technology adoption in diverse perspectives has led an element of confusion among researchers. The researchers frequently picked and selected characteristics across wide variety of existing models and theories. To counter this confusion, Venkatesh *et al.,* (2012) developed a modified unified model to merge diverse views on technology acceptance- The unified theory of acceptance and use of technology 2 (UTAUT2) by modifying his previous UTAUT model. HM (Hedonic motivation), PV (Price value) and (HAB) Habit too were included in UTAUT2. Individual differences on the basis of age, gender and experience were theorized to moderate their effect on behavioral intention and technology use. The extensions proposed in UTAUT helped to enhance variance explained to in behavioral intention to 74 percent from 56 percent. On the other hand technology use also expanded to 52 percent from 40 %. The additional variables in UTAUT2 are defined as follows:

Hedonic motivation (HM) relates with fun or delight associated with use of technology (Venkatesh *et al.,* 2012, pp. 161).

Price value (PV) relates with consumer's cognitive tradeoff covering perceived benefits of the applications and the monetary cost associated with use (Venkatesh *et al.*, 2012, pp. 161).

Habit (HAB) is the degree to which people tend to execute behaviours automatically because of learning and because of being accustomed to it (Venkatesh *et al.*, 2012, pp. 161).

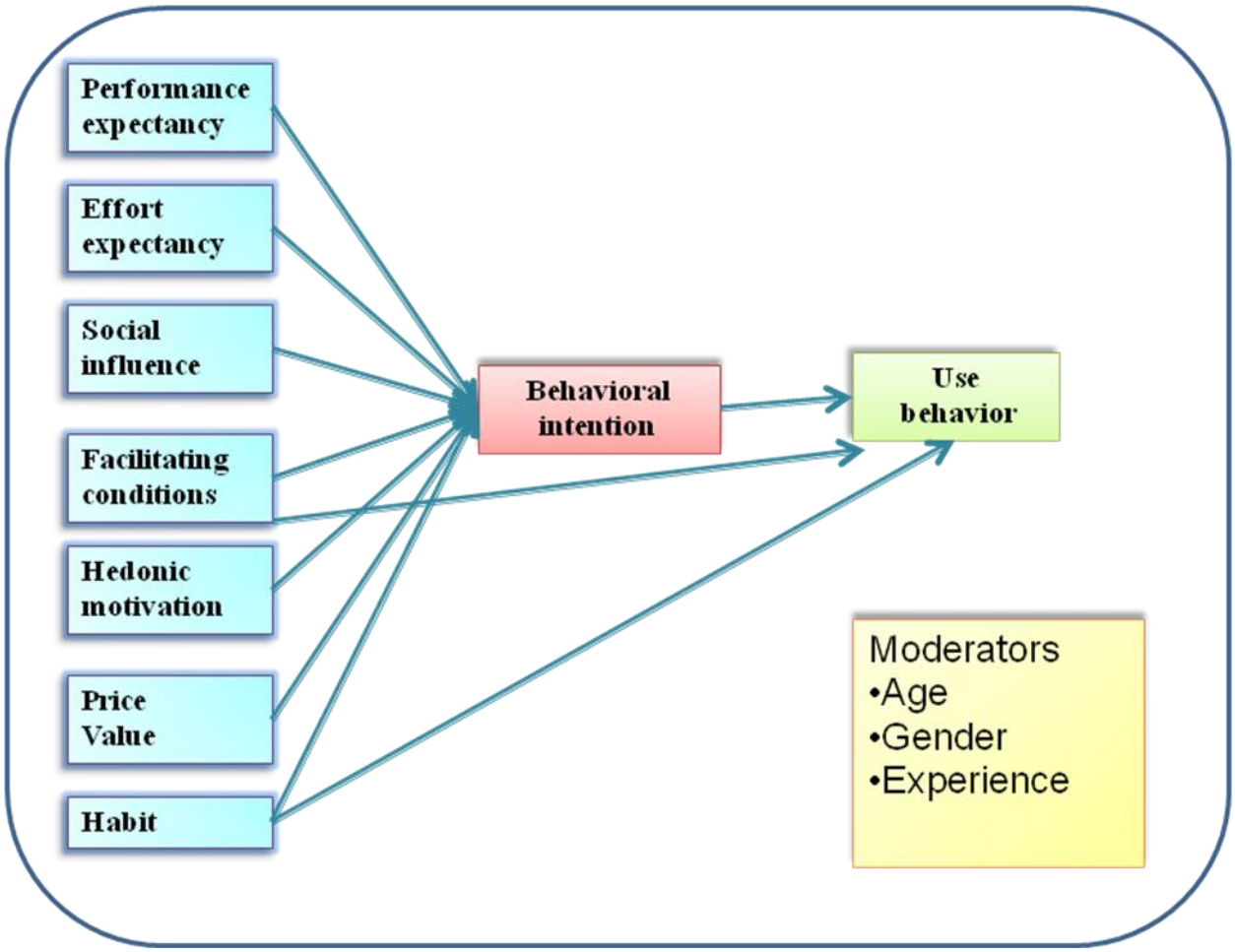


Figure 1.2 Unified theory of acceptance and use of technology

UTAUT 2 was tested on users of mobile internet technology only. Venkatesh *et al*., (2012) wanted this model to be tested in developing and developed counties having different cultures and also on different technologies. Although there were few researchers who accepted the call and validated it in different cultural settings and different environment, yet there is need to further research on these relationships (Williams *et al.*, 2015, pp. 470). The present research therefore considered UTUAT 2 in Indian settings for online retailing. UTAUT 2

research is still in its early stage of development as most of the research has targeted UTAUT.

The present research converges to present a model of online retailing in a developing economy context which can be eloquently conceptualized and contribution of each dimension can be measured. Present study empirically analyzed drivers of online shopping using variables of UTAUT 2. The model is extended by incorporating 'ease of ordering' and 'cash-on-delivery (COD)' mode of payment in technologically developing country like India. This is important because emerging countries have dissimilar institutional contexts in terms of their socio-cultural, -economic and regulatory aspects.

Table 1.3 presents a summary of few studies which have empirically analyzed UTAUT and UTAUT2:

Table 1.3: ***UTAUT and UTAUT 2***

Study	Application	Country	PE	EE	SI	FC	PV	HM	Habit
Abu-Shanab *et al.*, (2010)	Internet banking	Jordan	S	S	S	NS	-	-	-
Albugami and Bellaaj(2014)	M-banking	Saudi Arabia	S	S	NS	NS	NS	NS	S
Al-Gahtani *et al.*, (2007)	Information technology	Saudi Arabia	S	S	NS	NS	-	-	-
Al-Sobhi *et al.*, (2011)	E-government services	Saudi Arabia	NS	S	S	S	-	-	-
Aoun *et al.*, (2010)	Accounting Information System	Australia	S	S	NS	S	-	-	-
Baabdullah *et al.*, (2014)	M-technologies	Saudi Arabia	S	S	NS	NS	-	-	-
Baptista and Oliveira (2015)	Mobile banking	Africa	S	NS	NS	NS	NS	S	S
Chiu and Wang (2008)	E-learning	Taiwan	S	S	NS	NS	-	-	-
Chiu *et al.*, (2010)	Online auctions	Taiwan	S	NS	S	S	-	-	-
Dasgupta and Gupta (2010)	Internet technology	India	S	S	S	S	-	-	-
Duyck *et al.*, (2008)	Radiology Deptt(Hospital)		S	S	NS	S	-	-	-

Foon and Fah (2011)	Internet banking	Malaysia	S	S	s	S	-	-	-
Ghalandari (2012)	Online banking	Iran	S	S	S	S	-	-	-
Gupta *et al.*, (2008)	ICT	India	S	S	S	S	-	-	-
Harsono and Suryana (2014)	Social media	Singapore	S	S	S	S	NS	S	S
Im *et al.*, (2011)	MP3 Player and Internet banking	Comparison between U.S and Korea	S	s	S	S	-	-	-
Lian and Yen (2014)	Online shoppimg	China	S	NS	NS	S	-	-	-
Louho *et al.*, (2006)	Mobile technology	Finland	S	S	NS	NS	-	-	-
Tandon *et al.*, (2016)	Online shopping	India	S	S	S	S	NS	S	S

Table 1.4 presents a summary of various technology adoption models:

Table 1.4: ***Summary of various models of technology adoption***

Theory	Model developed by	Year	Key constructs
Diffusion of Innovation Theory	Everett Roger	1960	i. The Innovation ii. Communication channels iii. Time and iv. Social system
Theory of Reasoned Action	Ajzen and Fishbein	1975	i. Behavioral intention, ii. Attitude (A), and iii. Subjective Norm
Theory of Planned Behavior	Ajzen and Fishbein	1985	i. Behavioral intention ii. Attitude (A) iii. Subjective Norm and iv. Perceived Behavioral Control
Social Cognitive Theory	Bandura	1986	i. Affect ii. Anxiety
Technology Acceptance Model (TAM)	Davis	1989	i. Perceived ease-of-use and ii. Perceived usefulness
The Model of PC Utilization	Thompson *et al.*	1991	i. Job-fit ii. Complexity iii. Long-term consequences iv. Affect towards Use v. Social factors and vi. Facilitating conditions

The Motivation Model	Davis *et al.*	1992	i. Extrinsic motivation(PU, PEoU, SN) and ii. Intrinsic Motivation (Perception of pleasure and satisfaction)
Extended TAM2 Model	Venkatesh and Davis	2000	i. Social influence processes (SN, Voluntariness and Image) and Cognitive instrumental process (Job relevance, ii. Output quality, iii. Result demonstrability and PEoU)
Unified Theory of Acceptance and Use of Technology (UTAUT)	Venkatesh *et al.*	2003	i. Performance expectancy ii. Effort expectancy iii. Social influence and iv. Facilitating conditions
Unified Theory of Acceptance and Use of Technology 2 (UTAUT 2)	Venkatesh *et al.*	2012	i. Performance expectancy, ii. Effort expectancy, iii. Social influence, iv. Facilitating conditions, v. Hedonic motivation, vi. Price value and vii. Habit

1.5 Rationale for the Study

Most of the frameworks and theoretical models are derived primarily from the studies conducted in developed countries (Burgess and Steenkamp, 2006; Bathgate *et al.,* 2006). These research models developed primarily by taking into consideration the socio-economic conditions of U.S and Western Europe are applicable primarily to the western context (Palvia, 2013). There has been a remarkable increase in the growth of online retailing in India and in emerging markets of Asia from the past few years but the research in these developing markets is still less noticeable in contrast with western countries (Omar *et al.,* 2011). Therefore, the models developed in advanced countries need to be validated in diverse cultures (Palvia, 2013; Omar *et al.,* 2011; Dawar and Chatopadhayay, 2002). In contrast to developed countries, e-business infrastructure is extremely underdeveloped in emerging countries (Kapurubandara, 2009). In addition, even the quality of internet services is undersized in most parts of the developing world (Mbarika, 2006). Unlike what pertains in the developed world, internet access in the underdeveloped world is not only limited and slow but also expensive (Hinson and Boateng, 2007). Online payment infrastructure and limited access to e-payment facilities hinders e-business in most developing countries

(Mbarika, 2006). At the same time, the economic condition of most developing countries is quite different from that of the advanced economies (Upadhyay, 2013, p.14). Consequently, the models of these countries have to be adapted and validated for broader acceptance in these economies

A unifying model that integrates SCM with online retailing phenomenon is missing, a gap that this research seeks to address. Online retailers have to build strong relations with distributors for ensuring stocks and deliverabilty. SCM includes supervision of information, materials and finances which move in progression from trader to manufacturer, from merchant to retailer and finally to consumers. SCM involves synchronizing and assimilating these flows both within as well as among the organizations. Organisations' use these drivers to support either a supply chain strategy focussing on "efficiency" or a supply chain strategy focussing on "effectiveness'. Most online retailers are losing money mainly because they do not have enough volume to justify the expense of a dedicated distribution network. Challenge for online retailers is to offer delivery on time even to a distant customer. For effective SCM practices like information sharing, information quality, strategic supplier partnership, and information intensity and integration intensity play a pivotal role (Hamister, 2012). Online consumers if dissatisfied take no time to leave the website. Thus, website functionality is an extremely important in e-retailing. Proposed research will try to study the relationship between the two. Performance of online retailers is not only dependent upon the website functionality and SCM practices but it is equally influenced drivers of online retailing which lead to customer satisfaction. The study makes an attempt to find out how customer satisfaction is related with online retailing performance.

Previous studies have used UTAUT2 in different technologies like Mobile Banking and Mobile commerce (Zhou *et al.*, 2010; Tan and Wu, 2010; Baptista and Oliviera, 2015), online ticketing (Rodriguez and Trujillo, 2013) and M-internet and M-Government (Schaupp *et al.*, 2010; Baabdullah *et al.,* 2014), but sparse literature (Yaprakali *et al.,* 2013; Sareen and Jain, 2014) is available which has used UTAUT and UTAUT2 in online shopping context. Further, given a call by Venkatesh *et al.,* (2012) for testing UTAUT2 in different countries and with different technologies, the present study tries to test the predictors of UTAUT2 model in online shopping context. To make the model acceptable and more suitable for those countries which are less technologically advanced, the present study has included 'ease of ordering' and 'cash-on-delivery' (COD) as drivers to online retailing (Tandon *et al.,* 2016). Further,

these constructs have been validated through convergent and discriminant validity and composite reliability also. This is important because developing countries differ in terms of institutional contexts basically because of socio-economic features and regulatory aspects. Therefore, it is for the first time that UTAUT2 and cash-on-delivery mode of payment are combined with data from India. The study validates and provides new insights into how COD mode of payment has changed the online shopping scenario in India.

Thus, on the basis of website functionality, SCM, drivers of online retailing and customer satisfaction, the proposed study makes an effort to develop a model for enhancing performance of online retailers in North India. The study also empirically analyzed barriers to online retailing which prohibit online shopping. Focus of this research is on online retail customers, current online retailing companies and their technology links i.e. their websites.

1.6 Key Objectives of the Study

The main objectives of the current study are:

O1: To identify features of online retailing websites influencing performance of online retailers in North India.

O2: To identify the key drivers of SCM in selected online retailers in North India.

O3: To determine factors influencing customer satisfaction with respect to online retailing.

O4: To analyze hindrance factors of online retailing.

O5: To design a model for improving the performance of online retailing.

1.7 Organization of the Thesis

The thesis embodies five chapters namely: Introduction; Review of Literature; Research Design and Methodology; Data analysis and Interpretations; and Conclusion.

Chapter I: Introduction

This chapter presents a concise introduction to the background of this research work. It highlights the research problem and presents the need for the study. The chapter throws light on recent trends of online retailing in India. This chapter also focuses on objectives, need and implications of the study.

Chapter 2 - Review of Literature

This chapter reviews pertinent literature from various sources in order to comprehend various concepts of online retailing, research findings related to website functionality, Supply chain

management practices of online retailers, drivers of online retailing, dimensions of perceived risk and the determinants of customer satisfaction. The review of literature assists to provide a direction to the research on the basis of the theoretical framework of various studies covered for comparison and deeper learning.

Chapter 3 - Research Design and Methods

The present chapter discusses the research design and methods applied for achieving the objectives. In this chapter, objectives of the research have been chalked out clearly along with formulation of hypothesis. It mainly focuses on the research design, sampling design, sources of collection of data, details of questionnaire, reliability and validity test and also defines the research methods used to prove the hypothesis of the study. The conceptual model of the research has also been a part of this chapter.

Chapter 4 - Data Analysis and Interpretation

The present chapter emphasizes on the findings from data analysis. The chapter also covers interpretation of responses to questions collected through questionnaire directed to various online shoppers, customers and e-retailers. The chapter starts with the demographic analysis of the respondents and characteristics of respondents followed by website functionality and its impact on customer satisfaction. The chapter also analyzes important drivers of Supply Chain Management of online retailers, drivers to online retailing and barriers to online retailing. Structural Equation Modelling has been applied to study the impact of website functionality, drivers and barriers to online retailing. The results were analyzed using ANOVA to uncover if there exists a dissimilarity in the means of website functionality, drivers of online retailing and barriers to online retailing on the basis of age groups/gender/education qualification/income groups.

Chapter 5- Conclusion

The last chapter covers discussion and discusses the implications of the findings to the practitioners, academicians and policy makers. Each research objective is revisited and discussed. The limitations of the study and directions for future research form an integral part of this chapter.

1.8 Concluding Remarks

Online retailing has picked up in western countries but in countries like India it is still at its emerging stage. Online retailers need to broaden their marketing activities to drift to 4Ps+ $P^2C^2S^3$ and replace Product, Place, Price, Promotion; P^2Personalisation and Privacy; C^2 Customer Service and Community and S^3 Site, Security and Sales promotion (Kalyanam and Mclntyre, 2002). Understanding online retailing in India is a challenging task due to myriad of reasons which are preventing larger proportion of people from buying online. These issues are unaddressed by online retailers. Online retailers are also unclear about the reasons which are interrupting them and not putting them at par with their western counterparts. Therefore, the endeavour is to examine the factors that stimulate and the factors that hinder the performance of online retailers in North India. The process model will not only prove a useful guide for online retailers but also to young start-ups who wish to initiate a venture in online retailing. The next chapter is devoted to review of literature that gives strong theoretical foundation to the research objectives.

CHAPTER 2

REVIEW OF LITERATURE AND HYPOTHESES DEVELOPMENT

It is mandatory to examine the literature for the research as it assists the researcher to include an appropriate perspective of the subject and remove complications experienced by previous researchers. Therefore, development and execution of any research study must be considered by a comprehensive literature review because it:

i) Assists to get acquainted with the previous research in relevant area.

ii) Abbreviates the likelihood of replication of work.

iii) Provides important information on research methods that could be considered.

Five sections have been framed in this chapter for researching the earlier studies carried out in following areas:

2.1 Online retailing: Global and Indian scenario

2.2 Website functionality

2.3 Supply Chain Management (SCM) of online retailers

2.4 Drivers of online retailing

2.5 Perceived risk as barrier to online retailing

2.6 Customer satisfaction

2.8 Hypotheses development

Section 2.1 covers the review of online retailing- Global and Indian scenario. Section 2.2 covers the review on Website functionality. SCM of online retailers is section 2.3. The next sections 2.4 and 2.5 consist of studies related with drivers of online retailing and perceived risks as barriers to online retailing. Section 2.6 covers the studied related with customer satisfaction in online retailing. Concluding section 2.7 focuses on hypotheses development based on exhaustive review pertaining to the above mentioned section.

It is apparent that although a very rich and valuable literature on online retailing is available across the world, limited research has been taken in India and developing countries where online shopping has picked up recently.

2.1 Online retailing: Global and Indian scenario

Computer-interactive retailing through website encompass online retailing. Online retailing is the electronic version of non-store retailing. Consumers can shop while sitting from their offices, home and any other suitable locations using personal computers, mobiles and interact with retailers using internet. Internet retailing is the process of buying and selling products, services and information over computer networks (Turban, Lee, King and Chung, 2000).

Shin (2001) utilized Porter's five competitive forces model and Mc Carthy's four marketing mix model in order to understand strategies for companies involved in internet business so that they may respond to five competitive forces which in turn will assist them to achieve competitive advantage. The study presented innovative insights into implementation of e-business strategies. Authors suggested various strategies like product differentiation, niche products, expansion of related product line, price discrimination, customer centric promotion strategies. Integration of online and offline businesses was also suggested to respond to Porter's five competitive forces namely rivalries among existing firms, bargaining power of buyers, bargaining power of suppliers, threat of new entrants and threat of substitute products,.

Grewal *et al.,* (2004) highlighted inherent structural and functional weaknesses of retailing through Internet. Factors which enable the spread of internet retailing are: novelty, access to price information, product category, accessibility, access to information and convenience. Similarly, a number of limiting factors were also highlighted. These include: lack of interpersonal interest, high economies of scale, loss of privacy and security, poor logistics, lack of trial, high shipping and handling costs, lower customer service, lack of instant gratification, stable customer base and experience. Finally, a number of strategies were suggested for improving performance. These include: offering business services to other retailers, providing increased attention to fulfilment i.e., efficient logistics and inventory management with assured and timely delivery of merchandise, to go physical at the front end, to integrate into bricks and clicks and to pursue niche strategies.

To and Ngai (2006) empirically tested a model comprising of four major features namely technical resource competence, competitive pressure, relative advantage and channel conflict to understand adoption of online retailing by organizations. Authors collected data from 140 different companies of Hong Kong and logistic regression was used for testing the relative

hypotheses. Findings of the study confirmed that technical resource competence leads to acceptance of online retailing. This is followed by competitive pressure and relative advantage. But, no significant relationship was found between channel conflict and online retailing adoption. Researchers suggested that implementation of online retailing facilitates organizations by extending customer markets, improving image of company and accumulating customer values. Focussing on these factors may lead to an increase in business opportunities.

Teo (2006) evaluated perception of non adopters and adopters of online shopping by considering their demographic characteristics, their expectations towards e-stores, transaction costs, benefits and difficulties related with online shopping in Singapore. Furthermore, data on frequency of online purchase, products purchased and extent of communication with e-commerce vendors was also analyzed. Of the total responses obtained, 42.5% were adopters of online shopping. The findings revealed that young and educated males are the most frequent internet users in Singapore. Results of this study also indicated that consumers' expectations from online stores included online security of transactions, providing sufficient information and personal information. The deterrents related to online shopping covered are the problems related to products, post purchase and issues regarding dependability of online stores. Author recommended that e-stores need to formulate ways like payment on delivery time, different modes of payment, money back guarantee besides buy first pay later plans.

Mukherjee and Nath (2007) reconsidered commitment-trust theory (CTT) of relationship marketing in the context of online retailing and formulated the antecedents of trust and commitment in online retailing in digitized business environment. Data was collected from British professionals and students. A total of nine constructs were identified namely shared values, communication, opportunistic behaviour, privacy, security, behavioural intentions, commitment, termination cost, relationship benefit to comprehend the antecedents as well as outcomes of commitment and trust. A sample size of 651 was used to analyze the data collected from British online customers (n=651). The results revealed privacy, security features of the website and shared values as key antecedents of trust. These antecedents further influence relationship commitment positively.

Gunawan *et al.,* (2008) identified performance measurement levels of small and medium sized companies performing e-business. Data was collected from 252 e-retailers of UK. The findings indicated variation in the indicators for performance measurement. Business size and

business format emerged as two profile variables affecting performance measurement. Surprisingly, category of products and maturity has less impact on uptake of performance measurement indicators. Authors suggested that performance measurement is used by online retailers for managing and controlling costs.

Prasad and Arysari (2009) investigated the determinants of online shoppers' behaviour which included web store environment, convenience, customer service, trust and enjoyment of shopping online. These determinants were examined to understand their influence towards willingness to buy. Data was collected from five most important software companies in Hyderabad as well as from 135 respondents through simple random sampling technique. The results revealed that convenience had significant impact on online buying. This was followed by environment of web store, enjoyment due to online shopping and customer service. Except trust and customer service, all remaining variables were found significant with online retail stores' benefaction. Authors suggested that there is a need to change the business models used by online retailers to understand their consumer behaviour and for improving their performance. Online retailers also need to develop trust and privacy concerns so as to enhance online purchases.

Nair (2009) adopted a four-pronged approach towards online retailing in India. The buyer oriented study focussed on e-retail customers for validating a research model. The seller-oriented second study involved making an assessment of "net readiness" across Bangalore-based retailers and internet retailers. The third, another buyer oriented study, involved a study of retail visitors in Bangalore city to gain an insight into their motivation for visiting physical stores and to explore the potential of switching offline shoppers to online mode. The technology-oriented fourth study involved benchmarking emulative features of online retail websites from across the world. The results of the first study indicated that 'security', 'communication' and 'gullibility' as predictors of 'perceived trust' ; 'perceived trust', 'perceived value for money', and 'perceived quality of e-services' as predictors for 'confidence for buying.' Further, 'confidence for buying' is an antecedent for 'actual online buying'. The second study on the level of net-readiness for internet retailing units in Bangalore indicated that Bangalore based e-retailers have good technology. However, leadership, organisational competence, and governance exhibited by them are not up to international standards. The findings of the third study isolated some factors and results that can be astutely used by prudent e-retailers to enhance their website sales. Major perceived

problems in online shopping are lost orders, security and privacy getting compromised, unsatisfactory quality of products, inadequate grievance-handling mechanisms, delay in obtaining products and a non-existing goods return policy. In fourth study qualitative content analysis of 20 short-listed online retail websites indicated some emulative features of highly reputed e-retailers that can serve as guidelines for design of the 'ideal e-retail website'.

Khare *et al.,* (2010) examined the relationship between innovativeness/novelty-seeking behavior of Indian youth. The findings of the study revealed positive relationship between innovativeness/novelty-seeking behavior and internet shopping behavior. The research also emphasized that Indian youth are interested in online shopping websites attributes like convenience and flexibility as well as the latest information about products and services provided by these. Cash on delivery mode is the preferred mode as online transactions were considered insecure.

Ganesh *et al.* (2010) determined online shopping motivations and attributes of e-stores which were used to develop online shopper typologies. Data was collected from 3059 respondents using an online survey. By analyzing online shopping motivation dimension, seven shopper subgroups emerged which were termed as: "destination, interactive, e-window shopper, apathetic, basic, bargain seekers and shopping enthusiastic". Likewise, respondents were classified into six groups on the basis of importance of e-store attributes namely "basic, risk averse, apathetic, destination, shopping enthusiastic and bargain seekers". The results indicated three shopper subgroups namely, e-window shoppers, risk averse and interactive shoppers were distinctive to the online shopping environment.

Prades-Iglesias *et al.,* (2013) highlighted the drivers of online shopping which may guide non shoppers in b2c e-commerce to instigate e-shopping. After collecting responses from 1499 Spanish respondents, latent class analysis (LCA) approach was applied to analyze the data. The findings identified different characteristics of non shoppers: Skeptical / distrustful non shoppers; Infrastructure-conditioned i.e., not having internet access at their homes; Product-conditioned i.e., they feel the product information is too little on the internet; and others i.e., they have lowest computer literacy. Further, six classes of non buyers which might be engaged in online shopping were also classified as: risk avoiders (38.1 %), needers (29.6%), analog world shoppers (8.2%), e-shopping ignorant (10.5%) followed by hesitant non-shoppers (7.8%) and others (5.8%). Authors also recommended that technology as well as e-

commerce adoption should be considered as balance between refusal and acceptance behaviours.

Sandhu and Atwal (2013) highlighted some key issues regarding online retailing in India and suggested a suitable model stating economic value, collaboration, security concerns, customization and customer value as important factors which contribute for developmental performance of online retailing. Researchers stated that internet retailing is associated with numerous benefits both for online retailers and consumers but the technology concept needs to be used cautiously and carefully.

Gehrt *et al.,* (2012) explored Indian shopping orientations and identified three segments: quality at any price and reputation / recreation and value singularity. Authors suggested that the pioneer segment among these is value singularity segment. This segment needs to be targeted to make online shopping acceptable among Indians.

Thamizhvanan and Xavier (2013) identified determinants of online purchase intention. The findings of the study revealed that prior online purchase experience, online trust and impulse purchase orientation influences customer purchase intention. Further analysis confirmed that males were found to have higher intention to shop online than females.

Tandon *et al.,* (2016) analyzed the complexities of website functionality, perceived ease of use and perceived usefulness and examined the impact of these on customer satisfaction. The study also deepened the constructs of perceived usefulness and ease of use. Data was collected from 365 online shoppers in North Indian states and was analyzed using regression. Perceived usefulness was deepened by validating perceived time performance, product usefulness and promotion related usefulness as variables of perceived usefulness while ease of ordering, ease of purchase and ease of understanding as variables of perceived ease of use. Findings of the study confirmed that perceived usefulness and perceived ease of use had positive relationship with customer satisfaction.

2.2 Website Functionality

Website functionality is an important aspect for online shopping. It covers the operationality of the website on the basis of its structure and functions as desired by users (Bertot *et al.,* 2006). Following studies throw light on important aspects of website functionalty:

The study by Wolfinbargar and Gilly (2003) was based on three dimensions, viz. i) online and offline focus groups ii) sorting task and iii) an online survey of a customer panel. They developed a reliable scale for measurement of online retail quality (etailQ). Dimensions of website quality identified were: fulfilment/reliability, website design, privacy/security and customer service. On further investigation of the relationships of etailQ with overall quality, customer satisfaction, loyalty intentions and attitude towards website, it was concluded that quality of an online website is strongly related to website design and fulfilment/reliability. Customer service mildly influences quality and attitude towards website. Surprisingly, security/privacy was found insignificant in predicting overall quality.

Kim and Stoel (2004) examined website attributes which affect customer satisfaction. After data was collected from 273 female online apparel shoppers, factor analysis was performed. Factor analysis identified six dimensions of websites namely entertainment, web appearance and information fit-to-task. These were followed by response time, transaction capability and trust. But out of these six dimensions, only three dimensions namely response time, informational fit-to-task followed by transaction capability emerged as significant predictors of online shopper satisfaction.

Cheung and Lee (2005) examined the asymmetrical effects of positive and negative website attributes on satisfaction. An online survey was carried out to collect the data and total of 515 usable questionnaires were collected. Results obtained through regression showed that the consequence of asymmetrical effect is unrelated for different attributes. But, the negative performance on system access, information reliability and usability had a considerable impact than their positive performance. On the contrary, the positive performance on information understandability along with usefulness and system navigation had a remarkable impact.

Ha and Stoel (2008) examined technology acceptance perspective (TAM) in context of online shopping by incorporating beliefs about trust, enjoyment and e-shopping quality as supplementary antecedents which influence attitude. The data was collected through online surveys from students of a college (n=298). Results of the study confirmed that website quality is comprised four facets: customer service, website design, privacy/security, and atmospheric/ experiential. Results from SEM confirmed that e-shopping quality enhances usefulness, trust, and enjoyment. This in turn influences consumer's attitude towards e-shopping. Authors opined that website developers ought to keep in mind that customers are

not only web users with trust /safety and information needs but also shoppers with service and experiential needs.

Benslimane and Yang (2007) studied the functionalities that facilitate in improving design of commercial websites which may be used for B2B business transactions. In the first stage, Free Disposal Hull [FDH] technology was utilized to recognize the most efficient design for commercial websites after identifying commercial websites' functional requirements for each phase of the procurement process. Data was collected from 88 corporate buyers. Results of the study confirmed that incorporating advanced functionality in websites reduces their efficiency. The study also concluded that websites with limited functionalities provide maximum usefulness.

Calisir *et al.,* (2009) established the implications of functionality and usability factors for auction websites. In order to understand the implications of usability and functionality factors, Analytical Network Process (ANP) was used. The study identified security, search options, user-guidance and customizability as important functionality factors. Further interaction, learnability, navigation, efficiency, memorability and ease of use were considered as usability factors. The findings of the study confirmed that both navigation and interaction as factors of utmost relative importance. Among functionality factors, search option and ease of use were most important factors. But factors like response time, satisfaction, efficiency and security were found less significant factors.

Zhou *et al.,* (2009) highlighted the significance of website design and service quality. Online repurchase behavior was taken as dependent variable. Results of the study confirmed that website design leads to customer satisfaction and trust. Further, service quality had significantly stronger effect on trust of consumers' and their satisfaction level. Both trust and satisfaction had significant relation with repurchase intention. But explained variance of trust and satisfaction in the study were around 50 percent depicting that there are other factors also which may affect these two constructs.

Dholakia and Zhao (2010) identified those characteristics of websites that affect customers' evaluation and satisfaction with online stores. These characteristics were measured at two intersection points. First, when order is placed and the second, after the order has been fulfilled. Data was collected from www.bizrate.com which collects, analyzes and reports real customer's ratings of online stores. Findings of the study depicted that order fulfilment

variables, primarily on-time delivery dominated the effects on overall customer evaluation and satisfaction. “Ease of finding what you are looking for” and “clarity of product information” emerged as two vital characteristics for creating positive ratings of general layout and design of the site.

Kahre and Rakesh (2011) conducted a study to comprehend Indian student’s intention to purchase through e-retailing websites. Data was collected from 325 students studying in universities of Ghaziabad, Allahabad, Lucknow and Delhi were selected randomly and data was analyzed through statistical tools like ANOVA and step wise regression. The findings confirmed that utilitarian shopping value influences online purchase intention. The ease to find information about products/ prices, making comparison, convenience, and flexibility are antecedents of utilitarian benefits. Other factors which influence students’ decision to shop online include attitude towards online shopping, hedonic value and information search capabilities of websites. Male students signified positive attitude towards online shopping as compared to female students. Authors opined that by improving web site segmentation, targeting and positioning, online retailers can increase their customer base. While designing websites, online retailers must keep in mind that navigation styles of men and women are different. Hence, due attention on designing websites should be given for increasing vast consumer base.

Lee and Kozer (2012) analyzed seven website usability constructs. These included telepresence, simplicity, learnability, interactivity, consistency, supportability and readability. A sample size of 689 online shoppers was analyzed using confirmatory factor analysis. The results of the study authenticated content relevance as the dominant factor affecting purchase intention. This was followed by telepresence, navigability and interactivity which portrayed a positive influence on purchase intention. Further, readability and credibility had significant and positive impact on purchase intention. The study confirmed nomological networks exist between website usability constructs especially between simplicity and consistency. These in turn had a momentous effect on telepresence, navigability, interactivity and readability.

Abdallah and Jaleel (2014) proposed a framework that evaluated the effectiveness of online marketing efforts in terms of overall appeal of online retailing websites. A total of five information system elements (look and feel, content, navigation, credentials and customization) and e-marketing elements (product, place, price , promotion, process, people, physical evidence, partnerships) were identified as essential components of web-appeal and

were used to construct a measurement instrument. The instrument was tested across 80 online stores in Middle East. The results of the study concluded that look and feel, credentials and navigation are the essential elements for attracting customers by developing interest in website. However, focussing on product, page content and customization (personalization) help in furthering online transactions and can translate a good first impression into a viable long lasting one. To compete with rivals websites and gain an advantage the e-stores need to focus on promotion, price and process. Lastly, effective customer services, distribution strategy, brand image and partnerships can be used for maintaining a loyal base.

Tandon *et al.,* (2016) analyzed predictors of customer satisfaction in online shopping context. After collecting data from 365 online shoppers, SEM was applied to validate the hypothesized model. Website functionality emerged as a second-order construct having predictors navigation, security and privacy and website design. Website functionality had a significant impact on perceived usability. Furthermore, perceived usability and perceived usefulness lead to customer satisfaction. The study thus highlights the importance of important factors of website namely graphical components, hyperlinks and effective layout which make website easy to comprehend. This in turn enhances customer satisfaction.

From above discussion we can predict that evaluation of websites through functionality can help organizations perk up and modernize their targets and services. A number of researchers, Kim and Stoel (2004); Ha and Stoel (2006); Zhou *et al*. (2009); Lee and Kozer (2012); Abdallah and Jaleel (2014) have suggested important functionality factors like customization, security and privacy, website design which increase users' satisfaction by limiting information overload on users. But most researchers cover a small part of available functions of website only. Benslimane and Yang (2007) argued that adding advanced functionalities to a full-fledged website has a negative effect on website efficiency. Therefore, surplus functionality can actually reduce the performance of a website. For meeting the requirements of customers, it is essential to understand and balance the functionality of website. The proposed features identified through literature review include, security and privacy, website design, navigational characteristics, customization and consistency features of website. The existing literature suggests that these as dimensions of the construct namely "website functionality".

2.3 Supply chain management of online retailers

Supply chain management (SCM) "will ultimately separate the winners from losers" (Spekman *et al.,* 2002, p.41). Supply chain management is one of the major drivers of company's performance and helps in increasing the revenue, growth and efficiency. A supply chain consists of all the activities starting from sourcing of raw materials or components till delivery of the finished product to the customer. Supply chain management is, therefore, the management of all these activities so as to maximize benefit of the organization.

"A supply chain is a network of facilities and distribution options that performs the functions of procurement of materials, transformation of these materials into intermediate and finished products and the distribution of these finished products to customers. Supply chains exist in both service and manufacturing organisations, although the complexity of the chain may vary from industry to industry and firm to firm", (Mohanty and Deshmukh, 2004 pp.42)

2.3.1 Major trends in SCM

With a change in competitive situations, products, technology and customer preferences supply chain management is becoming complex and ever more flexible to response to these changes. According to Mohanty and Deshmukh (2004, pp.42-43) major trends in SCM are:

a) Co-makership: Co-makership includes maintaining and sustaining long term relationships with a limited number of suppliers on account of mutual confidence.

b) Use of 3PL: 3PL includes outsourcing operations like transportation, delivery, storage, etc. These lead to an increase in level of service, improved flexibility and reduction in costs. It helps to reduce investment in assets like trucks and warehouses. This also enables the organization to access new technologies effortlessly and even penetrate new markets.

c) Principle of Postponement: This includes postponement of last labelling, assembly or packaging.

d) Use of ERP techniques: These are information integrators that facilitate various business processes in an enterprise.

Emergence of e-business has brought different challenges related with coordination of supply chains. Online retailers in India also face the challenges in managing SCM aspect. These challenges are mostly related with speed of delivery and lack of connectivity due to uneven

infrastructure. These challenges may led to an environment of uncertainty and influence supply chain relationship management.

As e-business phenomenon in India is of recent origin, sparse literature as well as research has addressed the issue of drivers of SCM in online retailing context. Therefore, an attempt has been made in the present research to concentrate on this gap by analyzing the drivers of Supply chain management of online retailers in India.

2.3.2 Drivers of SCM

Performance of supply chain depends upon its drivers. In a way drivers are the operating tools for implementing supply chain strategies and carrying out operations. These drivers are logistical in nature such as storage and warehouse management, transportation management and inventory management. These could be cross functional also such as quality management, sourcing and information. These drivers facilitate a balance between responsiveness to the customer and efficiency in supply chain. Focussing on these drivers allows the company to be competitive in its chosen strategic era.

SCM integrates supplier, manufacturer, distributor and customer logistics processes to improve manufacturing efficiency and distribution effectiveness. To ensure a competitive advantage, MNCs frequently need to transfer knowledge to their subsidiaries (Suyanto and Salim, 2010). The performance of an organization depends upon information inputs, research and development which lead to profitability, efficiency and growth (Singh and Kumar, 2005). In a way drivers are the operating tools for implementing supply chain strategies and carrying out operations. These drivers enable a balance between responsiveness to the customer and efficiency in supply chain that allows the company to be competitive in its chosen strategic field.

The studies explaining drivers of SCM given below:

Golicic *et al.,* (2002) performed a qualitative study to comprehend the influence of e-commerce on managing SCM relationships. Authors conducted a qualitative study on eight e-commerce companies. The study followed Grounded theory methodology and conducted in-depth interviews from e-commerce companies. Results of the study accentuated that focussing on relationship management facilitates managers to manage uncertainty better. Relationship management could be an important component of business strategy.

Unexpectedly, surplus information enhances more uncertainty. Authors also suggested that logistics function may be very useful for the firms to be successful.

Tarn *et al.*, (2003) studied nature of e-business and discussed e-fulfilment processes. Authors identified nature of demand, supply chain management, reverse logistics, prompt delivery and accuracy as major challenges of e-business. Various strategies like pre-packing of popular featured products having higher demand, choosing 3PL partners to handle product delivery to consumers, teaming up with partners of supply chain and supporting its back end supply chain systems and accuracy could be the backbone on any e-fulfilment strategy were suggested by authors. The three key operational areas identified for e-fulfilment were fulfilment centre, infostructure and reverse logistics. Infostructure consisted of collaborative network which is proficient of processing orders and exchange information via. LAN/WAN across multi platform information systems.

Thirumalai *et al.*, (2005) explored the association between types of product and customer satisfaction regarding order fulfillment in B2C transactions. Data was collected from sample of 256 firms engaged in B2C transactions in USA for empirical analysis. The findings of this study indicated that on an average, customers had higher customer satisfaction with the order fulfillment process of shopping as well as convenience goods. But specialty goods witnessed less satisfaction with respect to their order fulfillment process. The researchers suggested that firms should target their resources on those products which result in improved customer satisfaction by focusing on order fulfillment process. The B2C firms need to consider the technology as an enabler for developing order fulfillment process.

Croom (2005) focused on the adoption of e-business system and further studied its deployment in support of SCM. Data was collected through interview from the sample of 92 organizations in Europe. Authors focused on three areas of supply chain management. These were procurement, customer relationship management, and fulfillment. An evolutionary five stage model suggested by researchers included: Stage 1 Customer Acquisition, Stage 2 was Customer Management followed by Stage 3 which included utilization of e-business system to support operation management process, typically ERP systems, Stage 4 which integrated supply side activities and lastly Stage V which was integrating e-supply chain management.

Mukhtar *et al.*, (2009) proposed a framework to reveal factors that influence the performance of e-supply chains. Several groups of variables were identified such as practice variables

(type and level of e-business practices in supply chains), contingency variables (size of companies, type of industry, complexity of product, existing relationship with supplier/ customer) and supply chain structure variables (physical variables including warehouses, location of factories, buyer supplier relationships, ICT variables, spatial variables). Based on contingency theory, a framework for e-business was proposed. This proposed framework depicted that e-business practices in supply chain affect the structure of supply chain. This in turn affects the performance of supply chain. The research emphasized the fact that any venture into e-business must be context driven. It should not be carried out without a comprehensive knowledge of relationships between variables involved.

Zhao *et al.,* (2010) analyzed supply chain information integration management. Their study covered e-hub architecture and technology enablers of business to business segment of e-commerce. They applied the 'General system theory' (GST) for covering the theoretical framework for the above mentioned frameworks. Based upon the results, it was found that information integration is the basis for supply chain integration. Authors suggested that electronic hubs need to broaden networking opportunities thereby massively affecting information integration.

Ramanathan (2010) explored how risk from products and efficiency of websites influence the relationships between customer loyalty and logistics performance with respect to b2c segment of e-commerce. Regression and moderated regression were applied. The results of the study confirmed that risk does not moderate the relationship between customer loyalty and logistics performance relationship where as efficiency has a moderating effect on the relationship. The study also confirmed that the impact of logistics performance on overall performance was stronger in more efficient e-commerce firms as compared to less efficient firms.

Xing *et al.* (2011) studied various issues regarding Electronic Physical Distribution service Quality (e-PDSQ) in UK. The study conducted qualitative interviews with retailers, logistics service providers and experts in order to discuss the existing market situation and suggestions for improvement. Findings from this qualitative research confirmed that variations in service quality offered by logistics service providers and retailers have contributed to e-PDSQ differences between multichannel retailers and pure players perceived by online consumers. Authors endorsed that online retailers and logistics service providers would benefit from

undertaking collaborative operations. Furthermore, by offering better services to consumers will help to reduce costs and thus becoming more profitable.

Barutcu and Tunca (2012) studied the role of e-SCM and analyzed the effects of e-SCM on e-retailing industry. Authors further studied the perception of e-suppliers and online retailers' for five forces (supplier power, competitive rivalry, buyer power, threat of substitution and threat of potential new entry) called as Porter's Five Force Analysis. It was found that e-SCM not only raises attractiveness of the industry but also widens the geographical market. This further increases the number of e-suppliers and e-retailers thereby expanding the size of e-retailing industry. Authors suggested that as there are competitors in e-retailing industry, therefore, all the suppliers should fight for same e-retailer. However, e-retailers can freely at change their e-supplier. To grab an e-retailer is of immense importance for e-supplier. After analyzing existing and prospective future state of the five competitive forces, managers of e-suppliers and e-retailers need to explore options to influence these forces in their online business.

Ellinger *et al.,* (2012) examined the influence of SCM competency upon shareholder value and customer satisfaction. The data for the same was taken from Gartner Supply Chain Group's supply chain of top 25 rankers. Economic Value Added (EVA), Momentum financial metric and the American Customer Satisfaction Index (ACSI) database were regarded as outcome measures. The findings of the study revealed that the firms that adhered to industry expert exhibited an elevated level of customer satisfaction. These firms also had higher shareholder value than their particular industry averages over the years under examination. Thus, SCM competency helps in enhancing firms' performance.

Bhattacharjya *et al.,* (2015) investigated the effectiveness of online retailers' logistics related customer service interactions on Twitter in order to identify effective and ineffective social media customer service strategies. A total of 203,348 tweets were collected from 22 online retailers and a random sample of 5,000 (16998 tweets) logistics related conversations were used for the analysis. Conversations initiated by customers were categorized as occurring either before or after the delivery of the product. Findings of the study revealed that the lack of interactions between online retailers and their logistics providers within the Twitter platform to determine customer queries resulted in an ineffective customer service. The consumers can solve not only their own queries but can also observe the problems of other consumers also. This helps them to have an understanding of logistics related service

processes of online retailers. Even online retailers can reach out their consumer base more frequently and resolve some queries quickly.

Teller *et al.,* (2015) investigated the impact of Key Supplier Relationship Management (KSRM) and proposed KSRM as a mediator between internal and external SCM resources and SCM execution. Data was collected by a survey of 174 managers representing different stages of supply chain and Structural Equation Modelling was used to test the hypothesized model. The findings of the study revealed that external SCM resources directly affect the capability to do KSRM. Internal SCM resources symbolize an indirect determinant and external SCM resources are the direct requirement and thus antecedent of the firm's capability to do KSRM. The study also signified that the capability to do KSRM is the focal requirement for enhancing the level of SCM implementation within a company. This in turn has an impact upon the level of SCM execution as well as mediating effect between SCM resources and the level of SCM execution.

2.4 Drivers of online retailing

Since online retailing behavior is primarily distinct from conventional retail environment (Liu *et al.,* 2008; Ranganathan and Ganapathy, 2002), therefore, key drivers of customer satisfaction are also different from those of traditional retailing. Researchers have done innovative work and have developed instruments to measure customer satisfaction but have come up with inconsistent findings for e.g. the study conducted by Kim and Lim (2001) confirmed that information quality is directly related with online shoppers' satisfaction while Szymanski and Hise (2000) established the role of web site design as a significant predictor of e-satisfaction, but these studies were contradicted by Kim and Stoel (2004). The study of Kim and Stoel (2004) indicated that information attributes and web appearance had modest impact on customer satisfaction. Ramayah *et al.,* (2008) examined the relationship between perceived ease of use, cognitive absorption (CA), perceived usefulness (PU) and fashion involvement (FI) with students buying intention and confirmed that PU, product search, CA, FI and online experience have significant impact on online shopping. Additionally, India not only differ from other western nations in culture and traditions and but also lags behind in logistic infrastructure. Previous reported research signifies that logistics (Sharma *et al.,* 1995) credit (Gentry, 1982) and culture (David, 2007) have an indispensable impact on customer behavior and satisfaction. Hence, the key drivers of customer satisfaction through online retailing in India may be diverse from those of other developed nations.

Al-Maghrabi and Dennis (2011) incorporated revised technology acceptance model and expectation disconfirmation theory with respect to online retailing. The model was evaluated in context of Saudi Arabia with respect to online shopping. Data was collected from 465 respondents. Findings of the study confirmed that enjoyment and perceived usefulness as strongest drivers. These were followed by social pressure. Site quality and trust also came out as vital determinants of perceived usefulness. Together site quality and trust had significant indirect effects on continuance intentions through perceived usefulness and enjoyment. The study also found that regression paths from perceived usefulness to continuous intention are not invariant between men and women.

Im *et al.*, (2011) empirically compared the constructs of UTAUT between respondents from U.S and Korea to comprehend the impact of culture on them. Two technologies namely Internet banking and the MP3 player were considered in the study. Findings of the study showed that constructs of UTAUT fit data well. The comparison of US and Korea revealed that the impact of performance expectancy on behavioral intention was not significantly different between two countries where as effort expectancy depicted larger impact on behavioral intention in sample of U.S than in Koreans. Social influence revealed no significant difference between the respondents of two countries. Though statistically insignificant, social influence coefficient was comparatively higher in Korean sample. Surprisingly, the impact of facilitating conditions was observed to be the same between the two countries.

Mosavi and Ghaedi (2012) investigated the impact of various dimensions of perceived value. These dimensions included convenience, social, monetary and emotional values. The study also validated impact of perceived sacrifice on customer satisfaction. Authors further explored influence of customer satisfaction on trust and repurchase intention. The study analyzed the data of 635 travel agents' customers who participated in travel activities via internet in Tehran (Iran). The results of the study illustrated that customer satisfaction is largely influenced by monetary value. This was followed by convenience, emotional and social values. Further, perceived sacrifice had a negative impact on customer satisfaction but customer satisfaction had a strong effect on trust as well as repurchase intention.

Dharmawirya and Smith (2012) conducted a study in Indonesia to understand the factors affecting repurchase intention towards online shopping. The study used constructs of UTAUT model viz. Performance expectancy, Effort expectancy, influence and Facilitating conditions

and four moderators of key constructs (gender, age, experience and voluntariness of use) to analyze consumer repurchase intention. The results of the study pointed that performance expectancy and facilitating conditions to be most important factors influencing repurchase intention of customers. Effort expectancy also emerged as a significant predictor but Social influence was found insignificant predictor of repurchase intention. The study also confirmed that performance expectancy and effort expectancy though moderated by age and gender but had slight effect towards repurchase intention. However, experience had a noticeable influence on effort expectancy. Further, Social influence which formerly had no impact on repurchase intention became influential with experience as a moderator. Experience emerged the most powerful moderator of key constructs.

Yaprakli *et al.,* (2013) analyzed the consumer behavior of online shoppers in Urmia, Iran using UTAUT model. Data was collected from 400 online shoppers having previous experience with online purchase. The results of the study confirmed that performance expectancy, effort expectancy, social influence and facilitating conditions have a significant impact on behavioral intention.

Escobar-Rodríguez and Carvajal-Trujillo (2013) analyzed drivers of online purchasing behavior of tickets and validated extended UTAUT2 in this context. Data was collected from 1360 users from Spain. The findings of the study confirmed that habit followed by price saving orientation, performance expectancy and facilitating conditions emerged as driver to online ticketing purchase. But, there was no significant impact of effort expectancy, social influence from referrers and hedonic motivations on online ticket purchasing behavior.

Chiu *et al.,* (2014) investigated the re-purchase intention of online shoppers. Along with the prospect theory, the Means-end-theory was also used for investigating the intention for repeat purchase. The study empirically analyzed the impact of utilitarian value and hedonic value on re-purchase intention. Perceived risk was found as inversely related with repurchase intention. The moderation used covered the effects of utilitarian and hedonic values on repeat purchase intention. The study used formative model taking utilitarian value as second-order construct. The independent variables included are: product information; product offerings; convenience and savings. Hedonic value construct covered gratification, adventure, deal, role, best and social. Data was collected from 782 online shoppers. The repurchase intention was validated to be positively influenced by the utilitarian as well as hedonic value. The

results also suggested that utilitarian value decreases with perceived risk where as the effect was adverse in case of hedonic value.

Sareen and Jain (2014) made an attempt to recognize factors influencing consumer's behavioral intention towards online shopping in India. Taking UTAUT model as a theoretical background, the study empirically analyzed technical environment, socio-individual belief, effort expectancy and customer attitude as factors leading to online purchase. Data was collected from 207 online shoppers. Results of the study validated the role of all the four factors leading to online purchase. Results also highlighted the relevance of structure or layout of the site with respect to convenience and visualization i.e., including attractive site visualization, satisfactory product visualization, easy accessibility and quick navigation.

Lian and Yen (2014) empirically analyzed UTAUT for examining drivers of online shopping and innovation resistance theory to study barriers affecting intention to buy online by considering a sample of older consumers. Data was collected through a survey by including two groups viz., college students in Taiwanese Universities and older adults who were taking computer classes for seniors. This group was also known as "Evergreen" students. Authors compared younger consumers with their older counterparts. The findings of the study indicated that performance expectancy and social influence stimulate older adults to shop online. This finding was same in younger sample also. Alternatively, the major barriers included risk, value and tradition in older adults while only value barrier emerged significant in younger online shoppers. Furthermore, younger consumers had more drivers as compared to barriers but perceive risk emerged as a strongest barrier in both younger and older adults. Regarding gender differences among older adults, it was found that men had higher online shopping drivers and lower barriers as compared to women.

Hassan *et al.,* (2015) examined the impact of UTAUT among the polytechnic students of Malaysia regarding online retailing. By using multi-stage cluster probability sampling method, data was collected from students of five polytechnics. The scale of UTAUT was extended by validating the impact of anxiety and self-efficacy towards behavioral intention to shop online. The results of the study confirmed that performance expectancy, effort expectancy, social influence, self-efficacy, computer self-efficacy, internet self-efficacy, and online shopping self-efficacy were found to have significant impact on behavioral intention. Though facilitating conditions confirmed a significant relationship towards user acceptance,

yet online shopping anxiety and internet anxiety had a weak significant relationship towards behavioral intention.

Chiu *et al.,* (2015) made an attempt to understand how female online clothing shoppers develop their e-loyalty towards online retailing. The study also examined e-satisfaction and e-trust as mediators of e-loyalty in context of online purchase of clothing. Data was collected from 482 female online shoppers in Taiwan and was analyzed using SEM. The results of the study confirmed that both online privacy and security were positively associated with e-trust but web design did not significantly influence female online shoppers e-trust. Additionally, perceived delivery time and website design were positively associate with e-satisfaction. The results also suggested that waiting time between order and delivery as one of the foremost apprehension for the female online shoppers.

Pascual-Miguel *et al.,* (2015) examined differences in gender regarding e-purchasing behavior of consumers. The product included in the study included digital and non-digital goods. The study extended UTAUT2 by adding two essential e-commerce variables namely trust and perceived risk. Data was collected from 817 Spanish online consumers. The results of the study corroborated that the influences of effort expectancy and social influence on purchase intention were significantly stronger for female online shoppers than for male online shoppers. Further, product type also influenced the relationship between perceived risk and online purchase of digital goods. This influence was found significantly higher in women Besides, findings of the study also confirmed gender differences in the risk perception of digital goods online purchase. There was no significant gender difference for purchase of non-digital goods.

Chaparro-Peláez *et al.,* (2016) analyzed the impact of analyze the impact of motivations (drivers) and barriers to online shopping behavior by applying fuzzy-set qualitative comparative analysis (fsQCA). Thirty three motivational and twelve items of e-commerce were compiled and their impact on purchase behavior as outcome was analyzed. A sample of 817 internet users was analyzed using an online questionnaire. Principal component analysis was used to used to reduce the conditions to seven motivations (convenience, price, hedonic, product customization, product variety, lack of sociality and internet exclusive availability) and three barriers (delivery, in-person and risk). The results of the study confirmed that for online purchase no single motivation is sufficient. Convenience appeared in every condition,

thereby suggesting that convenience is still the most important motivator for buying online. The results confirmed risk as a major barrier towards online shopping.

Tandon *et al.*, (2016) analyzed perceived risk and drivers of online shopping influencing behavioral intention of Indians. The study empirically validated website design, cash-on-delivery (COD) mode of payment, and different facets of perceived risk. Findings of the study revealed perceived risk to be a multi-dimensional construct. It is predicted by social risk followed by time, product performance and financial risks. Security risk had positive but least impact on behavioral intention. All these facets depicted a negative relation with behavioral intention, whereas the drivers were positively associated with behavioral intention. Besides analyzing cash-on-delivery as a construct, the study also validated website design to enhance application of UTUAT2 in Indian and other similar developing countries' context.

From the above studies, it can be deduced that UTAUT2 is an established model to envisage information technologies' adoption. But there is inconsistency in the findings of researches related with the model. Performance expectancy and effort expectancy have emerged as the strongest predictors influencing online shopping as highlighted in previous studies (Yaprakli *et al*., 2013; Sareen and Jain, 2014; Tandon *et al*., 2016). But the studies of Lian and Yen (2014); Baptista and Oliveira (2015); Chiu *et al*., (2010) confirmed insignificant relationship of effort expectancy and behavioral intention. Existing literature (Schepers and Wetzels 2007; Yaprakli *et al*., 2013) highlighted direct relation of social influence and facilitating conditions on behavioral intention but Al-Gahtani (2007) while investigating the applicability of UTAUT in Saudi Arabia found insignificant effect social influence and facilitating conditions. Im *et al*. (2011) examined the relationships of constructs in UTAUT model on customers of US and Korea and found that the impact of performance expectancy and effort expectancy on behavior intention are greater in US sample than in Korean sample. Similarly, the remaining three constructs of UTAUT2 viz., hedonic motivation, price value and habit have also been validated in few studies (Yang *et al*., 2013; Rodriguez and Trujillo, 2014; Tandon *et al*., 2016). Baptista and Oliviera, (2015) while studying M-banking adoption found only performance expectancy, hedonic motivation and habit as significant variables, where as Albugami and Bellaaj (2014) found performance expectancy, effort expectancy and habit as significant variables.Thus, there is no uniformity in the findings and there is a need to understand the importance of performance expectancy, effort expectancy, facilitating

conditions, social influence, price value, hedonic motivation and habit in stimulating online purchase.

Studies related to Cash-on-delivery (COD) as a means of payment

The recent surge in online shopping in India may be attributed to a recent method of online shopping "Cash-on-delivery" (COD) introduced sustainably by Flipcart.com in 2010. Before the introduction of cash on delivery mode of payment most of the online retailers provided payment options through credit card/debit card where consumers had to input card/ payment details online. These payment options inhibited Indians to shop online. Moreover, low penetration of credit card and debit card in Indian society also restrained people to shop online leading to distrust among consumers. The Indian consumers being skeptical of using credit card /debit card welcomed it. COD solved the distrust and fear about delivery of faulty and wrong products to a great extent because consumers get to inspect the product and be satisfied before paying. Importantly, COD option competently entails online retailers to transport the right product as well as offer swift delivery and enhanced customer services to the consumers in order to ensure customer satisfaction. Few studies on online shopping have mentioned and highlighted Cash-on-delivery (COD) mode of payment as a main stimulator of online shopping (Kumar and Dange, 2015; Kandulapati and Bellamkonda, 2013; Thakur and Srivastava, 2015; Sharma and Rawat, 2014; Tandon *et al.*, 2016), but its relationship with customer satisfaction and as a separate construct has not been empirically analyzed so far. Few studies which have studied COD are given below:

A study by Kumar and Dange (2014) found the COD mode of payment is very popular among Indians and about two-third Indians prefer to shop online through this mode of payment. Akroush and Al-Debei (2015) opined that adopting Cash on Delivery (CoD) mechanism in Jordan was found to be effective and successful in raising the level of trust and attitude toward online shopping. While analyzing barriers to online retailing, Thakur and Srivastava (2015) highlighted the significance of cash-on-delivery mode of payment as consumers do not trust online channel to share their banking details and prefer making payments through COD. With a share of 24 percent in total online payments, COD is still very common in Austria (Wolner-RoBlhuber *et al.*, 2013). Chen *et al.*, (2014) analyzed the characteristics and advantages of payment on delivery and proposed to combine mobile credit card transaction to improve convenience and security.

Hussain *et al.,* (2007) discussed issues regarding methods of payments for internet purchases in India, China and Pakistan and concluded that majority of consumers in these countries consider COD as most convenient and more time saving than credit card.

Polasik and Fiszede (2009) analyzed the factors influencing seven major payment methods. These methods include online payment integrator, pay-by-link, COD, card payment, virtual payment provider, bank transfer and payment-in-person by online retailers in Poland. Findings of the study identified three crucial payment methods in e-commerce. First method included COD with 39.5 percent of transactions and having 40.6 percent turnover value. The second method was transfer through banks to the shops' bank account with 28.7 percent of transactions having 29 percent of turnover value. This was followed by online payment integrators which contributed towards 15.9 percent of transactions with 16.9 percent of turnover value, including all available methods of payment.

Chiejina and Olamide, (2014) studied the role of 'Pay-on-delivery' mode of payment on Nigerian consumers and found it as a major trust builder between consumers and the online merchants. A survey of 105 online merchants was carried out in Nigeria with about 73 percent of them fully operational. Furthermore, 70 percent of surveyed online retailers provided the option by paying directly to a bank account and 30 percent provided the option of paying through credit/debit card. Only 4 percent of online retailers provided 'Pay-on-delivery' service for all the goods, while about 6 percent provided pay-on-delivery partially. The results of the study also confirmed that websites of online retailers that support 'Pay-on-delivery' are more popular with participants and as a result have more external links.

Jain (2014) studied the consumer decision making process in Indian environment and concluded that majority of consumers feel secure while shopping online and the most preferred mode of payment is Cash-on-delivery mode of payment.

Tandon *et al.,* (2016) studied customer satisfaction with respect to online shopping and highlighted that COD mode of payment has enhanced satisfaction with respect to online shopping and is persuading consumers to repurchase online.

COD though stated and mentioned in different studies has not been empirically validated till date. The current research introduces COD in the construct of drivers of e-retailing and examines its effect on satisfaction of the customer. The same has been validated through composite reliability and AVE also.

2.5 Perceived risk as barriers to online retailing

Perceived risk is "the expectation of losses associated with purchase and acts as an inhibitor to purchase behaviour" (Peter and Ryan, 1976). According to Featherman and Pavlou (2003) "perceived risk is defined as the potential for loss in the pursuit of the desired outcome of using an e-service". An understanding of perceived risk facilitates online retailers to comprehend online shopping through the eyes of consumers. There a strong positive association of perceived risk with customers intention to purchase online.

The crux of various studies on perceived risk is as under:

Featherman and Pavlou (2003) integrated TAM with perceived risk and analyzed the significance of perceived risk with overall e-service adoption decision. They identified seven types of risks namely (i) performance risk, (ii) financial risk, (iii) time risk, (iv) psychological risk, (v) social risk, (vi) privacy risk, and (vii) overall risk. Performance related risk facets (time risk, privacy risk, financial risk) were found most important concerns. Results indicate that e-services adoption is adversely affected primarily by performance-based risk perceptions, while perceived ease of use of the e-service reduces risk perceptions.

Forsythe and Shi (2003) examined four types of risks concerned with internet shoppers namely product performance risk, financial, psychological and time/ convenience risk. The study covers the internet patronage behavior and relates these with demographic variables. Findings of the study suggested that perceived risk significantly explains barriers. All four types of risk emerged significant deterrents explaining barriers except privacy risk.

Garbarino and Strahilevitz (2004) examined how men and women differed in their perceptions of risks associated with online shopping. The dimensions of the risk covered misuse of credit cards, fraudulent sites and the privacy loss. They also covered product failure as well as shipping problems. The study also examined gender differences in the effect of receiving a recommendation from a friend on perception of online purchase risk. Results of the study confirmed that women perceive higher level of risk in online purchasing as compared to men. Females are easily influenced to recommendations through relatives and friends and frequently shop from these sites.

Almousa (2011) investigated the risk perception dimensions on online purchase of apparels among Saudi consumers. The dimensions of perceived risk analyzed were performance,

financial, psychological, social, time and privacy risk. Results of the study signified that time and performance risk had most significant influence followed by privacy and social risks.

Alkailani and Kumar (2011) investigated factors influencing shopping from internet in three countries namely: India, USA and Jordan. Authors also studied disparity in differences of consumers from diverse cultures regarding online buying. The findings of the study indicated that elevated risk has a negative impact on online buying. Those countries where uncertainty avoidance is on higher side, perceived risk from online purchasing is also on an increased side.

Masoud (2011) examined six types of perceived risks that cover online shopping behavior of Jordan population. This list ranged from product, social to time and delivery risks. These also covered the information security and financial risk. The sample for the same was 395 shoppers. The results of the study revealed that product risk, delivery risk, financial risk, and information security risk negatively affect online shopping. On the other hand, the other two dimensions namely perceived social risk and perceived time risk had no significant effect on online shopping.

Zhang *et al.,* (2012) tested eight dimensions of consumers' perceived risk namely risks of privacy, economic, social, health, quality, delivery and after sales risk. The results of the study confirmed five dimensions of perceived risk. The online shopping purchase behavior validated five dimensions covering health, time, quality, delivery and after sales. Surprisingly, privacy, social and economic dimensions were not found significant.

The study by Javadi *et al.,* (2012) investigated factors that affect the behavior of online shoppers covering Iran. The perceived risk dimension covered by him included product, financial, convenience along with non-delivery risk. The financial and non-delivery risk were inversely related with attitude towards shoppers. On the other hand product risk and convenience risk had no significant impact on attitude towards online shopping.

Hanjun *et al.,* (2014) conducted a research on perceived risk and analyzed perceptions pertaining to risk between online shoppers and non-online shoppers. Authors took sample from Korea and United States. The findings of the study confirmed significant differences in the perceived risk between both the categories of respondents. Further, an enhanced level of risk was found for inexperienced shoppers. The study also confirmed that internet users of both the countries had analogous degree of risk towards online shopping. Online shoppers

from Korea depicted higher social risk where as Americans perceived risk on financial, time and psychological risk. Whereas respondents of both countries shared common vision on performance and physical risk as these risks were not significantly different between both countries.

Ariff *et al.,* (2014) conducted a web-based survey on online shoppers of Malaysia. Authors examined four types of risks namely product, financial, convenience and non-delivery risk and the impact on consumers' online attitude was also analyzed. Results of the study confirmed financial risk followed by product and non-delivery are perilous. These risks had negative impact on the attitude of online shoppers. On the other hand, convenience risk had positive effect on consumers' attitude. This signifies that actually consumers did not show apprehension on non-convenience aspect of online shopping which includes examining the quality of products and handling return of products.

Thakur and Srivastava (2015) identified components of perceived risk which act as deterrents to adoption of online retailing. The components of perceived risk identified were performance, time, social, security and privacy risk. Findings of the study substantiated perceived risk as a foremost inhibitor of internet shopping use. Time risk weighed heavily on overall risk perception followed by performance and social risk. The other two components of perceived risk i.e., security risk and privacy risk weighed relatively lower as compared to time, performance and social risk.

While previous reported research has focused upon the drivers of online shopping, there is a limited empirical work which at the same time captures the success factors (drivers) and inhibitors (barriers) that guide online shopping (Anckar, 2003; Chapparo-Palaez (2016); Lian and Yen (2014); Tandon *et al*., 2016). Lian and Yen (2014) covered barriers and drivers of online shopping, but considered only older adults of China. In the study, value, risk and tradition emerged as major barriers and performance expectation and social influence are drivers of online shopping. Prades-Iglesias *et al*. (2013) considered the barriers and drivers of non-shoppers only. Anckar (2003) suggested quality evaluation, security risk, perceived enjoyment and lack of personal service make internet adopters evade online shopping.

2.6 Customer Satisfaction

Customer satisfaction may be defined as a post consumption judgement concerning a specific product or service (Gundersen *et al*., 1996). Customer satisfaction has been defined as

"customer's fulfilment response" which is an evaluation as well as an emotion-based response (Oliver 1997, p.13). McQuitty *et al*., (2000) suggested that the most widely accepted conceptualization of customer satisfaction is the expectancy disconfirmation theory developed by Oliver, who proposed that satisfaction level is generally a result of variation between expected and perceived performance. Satisfaction (positive disconfirmation) occurs when product or service is superior to what was expected. On the other hand, dissatisfaction occurs when performance comes out to be inferior to expected (negative disconfirmation). Customer satisfaction relates consumption, expectation and experience. The satisfaction results when the ultimate deliverable (i.e., experience) is close to expectation (Khristianto *et al.,* 2012). Anderson and Sullivan (1993) addressed the simultaneous estimation of the antecedents to and consequences of customer satisfaction, with data from more than 20,000 Swedish consumers patronizing a hundred Swedish companies. Their model identified factors that determined customer satisfaction, which in turn had a positive association with financial performance. Gomez *et al.,* (2004) measured links between store attributes and customer satisfaction and found positive association of customer satisfaction and sales performance. Luo and Homburg (2007) concluded that the customer satisfaction affects business profitability. Ramayah *et al.,* (2010) suggested customer satisfaction and retention strategies as an effective means of maintaining the subscriber base, market share and overall revenue of online businesses. Kaushik *et al.,* (2013) also found that purchase decision is influenced by customer satisfaction, risk and returns. Understanding the importance of customer satisfaction, it has been taken as a dependent variable in this study and drivers and barriers as independent variables.

According to Shankar *et al.,* (2003) customer satisfaction is relationship specific, derived from the effect of a series of discrete service encounters or transactions with online vendors over a certain time period. Customer satisfaction is important as it persuades consumer to shop online. The phenomenal growth of e-Commerce has been due to the customer satisfaction (Bisht *et al.,* 2000). Due to the fact that end user pays for new products and services, end user experience has developed into a vital factor in internet-based businesses. Therefore, new product features such as perceived ease of use, appeal, quality, aesthetics and value for money need to be improved upon with customers' expectations toward the product. As a result, measuring customer satisfaction has become essential particularly for high tech products and services.

Customer satisfaction in online environment has been examined by many researchers (Liu *et al.*, 2008; Szymanski and Hise, 2000). Customer satisfaction in e-business is a key feature of profitability (Guo *et al.,* 2012) and satisfied consumers are more likely to repurchase more in the future than dissatisfied customers (Garcia *et al.,* 2012). Therefore, customer satisfaction plays an extensive role in the decision making with regards to online retailing thereby leading to replicate the purchase. To augment and enhance consumer satisfaction there is a pressing need to have a deeper knowledge of the antecedents of consumer satisfaction in online environment. The present study covers these aspects.

An initial study by Szymanski and Hise (2000) found convenience, website design, security, information and merchandise variety as determinants of customer satisfaction. Liu *et al.*, (2008) identified factors influencing Chinese customers' online shopping satisfaction. Data was collected from 1001 online shoppers. Hypotheses were tested using multiple regression technique. The findings of the study revealed that website design, information quality and transaction capability were significant predictors of customer satisfaction. This was followed by security/ privacy payment, merchandise attributes, delivery and customer service. However, the effect of response time was not significant.

Maditinos and Konstantinos (2010) validated antecedents of customer satisfaction by analyzing e-shoppers in Greece. Data was collected from 359 users of online shopping. Those residents of Greece who had made at least one online purchase were considered. They were further requested to appraise their recent experience of shopping online. The results of the study revealed that product information quality and user information lead to overall satisfaction. But on the other hand, service security perception, quality of information, purchasing process and attractiveness of product had only a positive impact.

Alam and Yasin (2010) identified four dimensions of customer satisfaction namely reliability, website design followed by product variety and delivery performance. However, no significant relationship was found between saved time and satisfaction in the study.

Omar *et al.,* (2011) concluded in their study that there are sixteen pertinent items that lead to customer satisfaction. There are nine most vital items namely security of online payment, provision of order information/ product arrival information, forum, chat room functions, safe and fast delivery, detailed product information, product quality, easy to operate search engines, provision of differentiated products for comparison, and ease of ordering and

payment. These items potentially influence the level of customer satisfaction related to online shopping experience

Chen *et al.,* (2012) made an attempt to evaluate the antecedents of customer satisfaction in Chinese online environment. A total of 351 online shoppers participated in the research. Results of the study revealed that trust, information quality, price, privacy, payment, website design and delivery are key antecedents of customer satisfaction.

Ranjbarian *et al., (*2012) empirically analyzed antecedents of e-satisfaction in Iran. Five dimensions representing satisfaction with internet purchase were identified. The study analyzed online customers' attitudes based on their perception about convenience, the kind of merchandising, website design, security of transaction and serviceability in e-satisfaction. Data was collected from Iranian internet users through field survey. The findings of the study revealed that merchandising, security, convenience and serviceability influence customer e-satisfaction but website design had no influence on e-satisfaction despite its indirect effect on security and serviceability.

Chou *et al.,* (2015) focussed on female online clothing shoppers and aimed to examine the e-satisfaction and e-trust as mediators of e-loyalty. Data was collected from 482 female online shoppers in Taiwan. To analyze the measurement and structural models SEM was performed. The results of the study both perceived online privacy and security are positively associated with e-trust. Further, web site design and perceived delivery time have significant positive association with online customer satisfaction. Both e-trust and e-satisfaction in turn influence e-loyalty for online female shoppers.

2.7 Hypotheses development

2.7.1 Website functionality

Websites can be appraised on the basis of functions performed such as atmospherics of website (Prasad and Ansari, 2009; Ha and Stoel, 2009) ease to use features of website (Khare and Rakesh, 2011; Dholakia and Zhao, 2010) and usability (Hernandez *et al.,* 2009; Chen *et al.,* 2010; Lee and Kozar, 2012). Scholars have developed attributes to predict security features of website (Nair, 2009; Stefani *et al.,* 2006**;** Maditinos and Theodoridis, 2010; Gehrt *et al.,* 2012; Razaei *et al.,* 2014), navigability (Nair, 2009; Lee and Kozar, 2012), and coordinating products on website (Chen *et al.,* 2010) which lead to customer satisfaction.

Security was included by Stefani *et al.,* (2006) and Seffah *et al.,* (2008) as a functionality feature in their research. Customization as highlighted by Liang *et al.,* (2007) is a vital factor of functionality. It augments satisfaction by waning off information overload on users. Although, a number of attributes` have been identified and efforts have been made to show that these are related to satisfaction but little commonality exists among the scales developed for measuring website characteristics important for the customers. To identify what dimensions of website functionality are of vital importance to consumer and to simplify the model, security and privacy, website design, customization, navigational characteristics and consistency feature of website are selected. The exhaustive literature helped to deduce that these factors are actually the dimensions of single construct namely "website functionality" in this study. This study therefore, proposes website functionality as second order construct with five dimensions viz., security and privacy, website design, customization, navigational characteristics and consistency feature.

Therefore, the related hypothesis proposed is as under:

H1(a): Website functionality is a multidimensional construct significantly predicted by security and privacy, website design, navigational characteristics, customization and consistency feature.

Website functionality has attracted the attention of many researchers to cover various different aspects for prediction of security features of website (Razaei *et al.,* 2014; Tandon *et al.,* 2016). The others aspect considered include: website design (Guo *et al.,* 2012; Tandon et al., 2016;). Navigability as highlighted by (Lee and Kozar, 2012) has also been covered. The study by Tandon *et al.,* (2016) suggested effect of security and privacy, navigation and website design on satisfaction of customers and the mode through which payment is made. These are further corroborated by Guo *et al.,* (2012), as they also suggest that customer satisfaction is being influenced by website design, information quality. The other predictors include, e-service and product quality along with delivery service. Liu *et al.,* (2008) has also validated these factors, viz. information quality, website design, merchandise attributes, transaction influence Customer satisfaction. The study also highlighted security, means of payment and delivery also to be related with user satisfaction. Mittal *et al.,* (2013) highlighted the importance of aesthetics, competence and conformance as the important factors influencing the consumer experiences and increasing retail patronage. Cho and Lau (2014) also confirmed information, product and sales' service customizations as strong predictors of customer satisfaction. As verified by Chang *et al.,* (2015) product familiarity is

being influenced by website familiarity and trialability. Paul *et al.* (2016) examined the determinants of customer satisfaction in small and large retail stores in India and results of the study revealed that social desirability, staff friendliness, shopping economy, shopping ambience, family shopping and deal proneness were major predictors of customer satisfaction where as many consumers prefer social desirability and staff friendliness in small stores.

Therefore as suggested by various researchers there is a relationship of website functionality with customer satisfaction. The proposed features as have been identified through literature and included in present study are: i) security and privacy, ii) website design, iii) navigational characteristics, iv) customization and v) consistency. These features of Website functionality are hypothesised to have a positive impact on Customer Satisfaction. Therefore, the related hypothesis is:

H1(b): There is a significant positive association between website functionality and customer satisfaction.

2.7.2 Drivers of SCM

A number of studies have attempted to identify the critical success factors for SCM in online retailing organisations like logistics performance leading to customer loyalty (Ramanathan, 2010), information intensity and supplier synergy (Ranganathan *et al.,* 2011), collaborative operations and marketing by retailers and logistics service providers (Xing *et al.,* 2011), synchronising SCM activities with different participants (Teck, 2004), focus on order fulfilment (Thirumalai *et al*., 2005) and procurement and CRM (Croom, 2005). In the era of information explosion, a tremendous amount of information is being generated and transmitted from every corner of the world (Kaur and Singh, 2015). Online retailers have to tie up with different distributors to make sure that they get stock of products when they require. There are high value items for which demand is unpredictable. So they have to tie up with distributors to keep these items in stock. Darwish and Singh (2013) suggested that that the involvement of human resource functions into the business and corporate strategy reduces employee turnover rate, enhances financial performance and customer support. Process upgradation may result in minimization of wastages/ rejections thereby reducing inventory build-up (Naurial, 2006). To overcome these challenges, successful implementation requires matching the right technologies with capable and progressive reformers and government systems (Pathak *et al.*, 2008). As suggested by Mittal *et al.,* (2015) organizations need to measure and manage overall quality perceptions to build trust and reinforce loyalty intentions

among their customers. To understand important drivers of SCM in online retailing context, following hypothesis has been framed:

H2: Strategic supplier relationships, CRM, information and delivery dependability are the drivers of SCM of online retailers.

2.7.3 Drivers of online retailing

Since, UTAUT2 is an established model to envisage information technologies' adoption. Therefore, the variables of UTAUT2 are validated as drivers to online shopping in the present study also. In the current research ease of ordering and Cash on Delivery (COD) have been added and their relationship with customer satisfaction has also been analyzed.

Performance expectancy: Performance expectancy has been cited and empirically examined by (Tandon *et al.,* 2016; Tan *et al.,* 2013) and is important predictor of online shopping. Yaprakli *et al.,* (2013) in their study on consumers of Iran also confirmed performance expectancy as a strongest predictor of online shopping. Lian and Yen (2014) studied barriers and drivers of older adults and found performance expectancy as major driver of online shopping. Im *et al.,* (2011) establish that the impact of performance expectancy on behavior intention is greater in US as compared to Korea. Users' behavior in e-banking services is strongly influenced by Performance expectancy (Ghalandari, 2012 and Foon and Fah, 2011). Contrary to these Sareen and Jain (2014) and Al-Sobhi *et al.,* (2011) found no significant relationship between performance expectancy and behavior intention. Therefore, to understand its impact in Indian online shoppers, performance expectancy is considered as a driver in the present study.

Effort Expectancy: Effort expectancy has emerged as the strongest predictor influencing online shopping as highlighted in previous studies (Yaprakli *et al.,* 2013; Sareen and Jain, 2014). UTAUT was tested for Saudi Arabian consumers by Al-Gahtani (2007) and the results confirmed that effort expectancy has a significant influence on consumers. But in the studies of Lian and Yen (2014), Baptista and Oliveira (2015), Chiu *et al.,* (2010) and Zhang *et al.,* (2012) effort expectancy emerged insignificant variable.

Social influence: Earlier literature (Yaprakli *et al.,* 2013; Al-Sobhi *et al.,* 2011; Lu *et al.,* 2005) highlight a direct relation of social influence with behavioral intentions. Further Lu *et al.,* (2005) also highlight the role of social influence on individual's perception, viz. ease of use and usefulness. Schepers and Wetzels (2007) also supported and corroborated the results.

Thus it can be inferred that social norms do influence users' attitude regarding use of technology. At the same time there are studies (Aoun *et al.,* 2010; Yang *et al.,* 2013; Chiu and Wang, 2008) where it has been highlighted that there is no significant impact on behaviour intention of social influence. Venkatesh *et al.,* (2003) has suggested that social influence predominated in case of elderly women, particularly in infancy stages of adoption (p 469).

Facilitating conditions: A number of previous reported studies have confirmed that facilitating conditions is a significant factor leading to adoption of technology (Lian and Yen, 2014; Sareen and Jain, 2014; Yaprakli *et al.,* 2013). However, the studies of Rodriguez and Trujillo (2014), Baptista and Oliveira (2015) and Baabdullah *et al.,* (2014) argued that there was no significant effect of facilitating conditions on use of technology.

Hedonic Motivation: Hedonic motivation has been found to influence technology acceptance and an important determinant in previous reported studies (Brown and Venkatesh 2005; Yang *et al.,* 2010). According to Menon and Kahn, (2002) in initial browsing process, pleasurable online experiences influence consumers to explore novel products as well as websites and as a result they respond quickly to promotional incentives.Yang (2010) found in his empirical study that hedonic aspects are crucial drivers for the m-shopping services. However, Albugami and Bellaaj (2014) confirmed that hedonic motivation does not influences M-banking adoption.

Price value: The cost and pricing structure may have the significant impact on consumers' technology use (Venkatesh *et al.,* 2102, p.161). Chong (2013) opined that undergraduate students are more sensitive to price as compared to other users. Yang *et al.,* (2013) found the positive impact of price value on e-learning but the study of Albugami and Bellaaj (2014) reported no significant impact of price value on mobile payment in China. Toh *et al.,* (2009) also identified that perceived cost negatively influences the intention to use m-commerce among Malaysians.

Habit: According to Limayem *et al*., (2007) habit is the extent to which people perform behavior automatically. Lewis (2013) found that habit positively influences intention to utilize classroom technology. Liao *et al*., (2006) also verified habit as a major predictor in b2c e-commerce.

UTAUT2 was established in 2012 and therefore, there is a sparse research where UTAUT 2 has been utilized to study the online shopping behavior. There are few reported studies in India which have considered UTAUT2. Yang *et al.,* (2013) reported that there is significant effect of price, hedonic motivation, performance and effort expectancy on e-learning. However, facilitating conditions and habit did not emerge as significant predictors. Rodriguez and Trujillo, (2014) applied UTAUT2 for online air ticketing on Spanish consumers. The results indicate that social influence and habit emerged as insignificant predictors in relation to others. In the study by Harsono and Suryana, (2014) except for price value, all others were found to be vital and significant. Baptista and Oliviera, (2015) applied this model on M-banking adoption, where performance expectancy, hedonic motivation and habit emerged as significant predictors. Performance and effort expectancy along with habit were significant variables in case of research done by Albugami and Bellaaj (2014). Thus there are numerous studies applying UTUAT2 in various cultural settings and also on different electronic/digital products and services, yet it has not been tried and tested for online retailing in developing countries. Further, there is lack of consistency in the findings especially in case of performance and effort expectancy, social influence, price value, hedonic motivation, habit and facilitating conditions in relation to online purchasing. Accordingly, the hypotheses proposed are:

H3(a): Performance expectancy, effort expectancy, social influence and facilitating conditions are the drivers of online shopping.

H3(b): Hedonic motivation, price value and habit are the drivers of online shopping.

Ease of ordering: A careful assessment and validation of ease of ordering as a key dimension for online purchase is also needed. Attempt was made by Qu et al. (2008) to gauge the factors that influenced ranking of online retailers. In this model tracking service and ease of return of product emerged as major determinants. Tandon *et al.,* (2016) validated it for Indian online consumers and results highlighted a significant impact of ease of ordering on satisfaction.

Cash-on-delivery (COD) mode of payment: Next, it is important and pertinent to examine whether COD mode of payment is a catalyst for online shopping. COD mode may have its relevance for developing economies like India. In this perspective, thus there are a few researchers suggesting COD as stimulator for online shopping (Thakur and Srivastava, 2015; Kumar and Dange, 2014; Tandon *et al.,* 2016). Hussain *et al.,* (2007) empirically analyzed concerns on the subject of mode of payments for internet purchases in India, China and

Pakistan and concluded that mainstream customers in these countries consider COD as the most convenient and time saving mode than credit card.

Chiejina and Olamide (2014) examined this in case of Nigerian consumers and results support that COD helped to build the trust between retailers and online consumers. There have still been little research and there is need to validate this for Indian online consumers. Thus on the basis of these, the following hypothesis has been proposed:

H3(c): Ease of ordering and Cash-on-delivery mode of payment (COD) are the drivers of online shopping.

It becomes important to identify the drivers of online shopping and examine and analyse their relation with customer satisfaction. The drivers of online shopping considered are: i) performance expectancy, ii) effort expectancy, iii) facilitating conditions, iv) social influence, v) price value, vi) hedonic motivation, vii) habit, viii) security and privacy and ix) ease of ordering. The next hypothesis proposed is to analyze the relation amongst these drivers and customer satisfaction:

H3(d): There is a significant positive association between the drivers and customer satisfaction.

2.7.4 Perceived risk

There are diverse risks which act as barrier for online shopping. Earlier studies (Kim and Forsythe, 2010; Gerrard and Cunningham, 2003; Rampl *et al.*, 2012) have analyzed different perceived risks as barriers for buying online products. According to Chang *et al.*, (2015) there is adverse impact of perceived risk on online shopping. These risks could be characterized as:

Product performance risk: Product performance risk is the possibility of the results not being as they were designed to be and therefore, failing to deliver the desired benefits (Featherman and Pavlou, 2003; Ueltschy *et al.*, 2004). There have been many studies that have demonstrated that inability to touch, feel and try product as major barriers to purchase online (Salo and Karjaluoto, 2007; Zhou *et al.*, 2010; Thakur and Srivastava, 2015). These risks acted as deterrent to shop online has also been supported through (Tandon *et al.*, 2015).

Financial risk: Forsythe and Shi (2003) confirmed a depressing effect of perceived risk on online shopping behaviour. The study further elaborated perceived financial risk as an important predictor of internet patronage. Financial risks constitute the monetary loss from

the initial buying to its subsequent maintenance (Featherman and Pavlou, 2003; Ueltschy *et al.*, 2004).

Time risk: Time risk is the perceived wasted time (Mc Guire *et al.,* 2010) and is the disutility of waiting (Rajamma *et al.,* 2009; Janakiraman *et al.,* 2011). Users as reported by Forsythe *et al.,* (2006) waste time by making poor purchasing decisions, especially in terms of researching, learning and making the purchase. This could be due to heavy web pages embedded with exhaustive use of graphics resulting in slow page downloads. These could also be due to prolonged forms and tedious formats for clearance. These delays result in desertion and abandonment of shopping cart (Rajamma *et al.,* 2009).

Social risk: Social risk reflects the potential loss of status in a social group, as a result of adopting a product or service (Featherman and Pavlou, 2003). Social risk covers the social acceptance aspect. Social risk according to (Thakur and Srivastava, 2015) is quite pertinent as purchasing in India may be induced by endorsement from friends, relatives and peers. Opinion leaders also enhance the chances to stimulate online buying. Zhang *et al.,* (2012) analyzed this perspective covering Chinese consumers. The results of their study validated social risk as an important predictor of perceived risk. Existing studies on technology acceptance (Venkatesh *et al.,* 2003; Masoud, 2013) also highlighted e-behavior to be linked with acceptance by social groups. In the age of social networking this assumes higher relevance and thus there is a need to investigate this.

Security risk: Security risk may act as a deterrent to buy online. Security aspects covers risks perceived by individuals in terms of payment mechanism or storing of pin, the risk of hacking of account (Thakur and Srivastava, 2015; Tandon et al., 2015; Guo et al., 2012). Further people are hesitant to share personal information through internet or online media. The possibility of misusing this information by e-retailers makes consumers restrain from online shopping. Kayworth and Whitten (2010) highlighted that consumers shun websites that entail and are persistent for sharing personal data while registering online.

Privacy risk: Privacy risk is also related to security aspects but it is related only to disclosing of personal information (Featherman and Pavlou, 2003). Kayworth and Whitten (2010) supported this and opined that people give wrong information thus sometimes hindering the process to deliver online. On the other side there is study by Forsythe and Shi (2003) where

it does not emerge as a significant variable affecting e-purchasing. Hence, there is further study needed to examine this in greater depth.

To validate and test the above mentioned dimensions following hypotheses are proposed:

H3(a): Perceived risk is a multidimensional construct and is significantly defined by product performance risk, financial risk, time risk, security risk, privacy risk and social risk.

H3(b): The facets of perceived risk are negatively related with customer satisfaction.

2.8 Summing up

The studies in this chapter have investigated the features of website functionality, dimensions on Supply Chain Management of online retailers, drivers of online retailing, facets of perceived risk and studies related to customer satisfaction with regard to online retailing. But a comprehensive model covering all the aspects related to online retailing is missing not only Indian context but also in western context. Previous reported research on online retailers in India is dolefully scarce, as such very limited literature is available which may shed light on this phenomenon. In western context also there is no doubt rich literature available but most of the studies cover either drivers of online retailers or barriers to online retailers. Further, website functionality is also validated as a solitary construct in many studies (Liang et al., 2007; Calisir et al., 2010) but it has not been integrated with drivers and barriers. Thus, the assimilation of website functionality, drivers as well as perceived risk have been integrated with the intention to derive a model applicable to developing economies.

As recent surge in Indian online retailing has been attributed to COD mode of payment but COD mode of payment has not been analyzed as a construct till date. Therefore, the present study empirically analyzes and validates the role of COD mode of payment as a new aspect of online retailing. The study also validates ease of ordering as a construct. Through the present study online retailers would be able to detect the vital drivers for online retailing and online retailers can focus on those to augment their sales and customers can derive higher satisfaction.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

This chapter comprises of phases of research and explains the entire process followed to achieve the objectives of the research. The chapter encompasses defining objectives of the study, development of hypotheses, research design, selection of sample and survey areas, sampling design along with methods undertaken for data collection, and the selection of appropriate statistical methods for data analysis and its interpretation.

Section 3.1 defines the need and relevance of the study, section 3.2 covers the scope of the study, section 3.3 presents the objectives of research, section 3.4 presents survey instrument and research methods covering sampling design, section 3.5 covers data collection and pilot study, section 3.6 discusses validity and reliability of questionnaires, presents research methods and techniques are discussed in section 3.7, where as section 3.8 presents research framework and section 3.9 covers conceptual research model followed by concluding remarks.

3.1 Need and Relevance of the study

While research reported so far has mainly focused upon the factors influencing adoption of shopping online yet there is sparse work that has been undertaken covering website functionality along with both success factors and hindrance factors simultaneously. There is inadequate and sparse literature that covers success factors (drivers) and hindrance factors (barriers) that influence online shopping. These studies as reported by Lian and Yen, (2014) and by Prades–Iglesias *et al.,* (2013) covering drivers and barriers, yet website functionality has not been considered. Furthermore, in many studies, website functionality is also been analyzed empirically as a distinct construct (Liang *et al.,* 2007; Calisir *et al.,* 2009; Seffah *et al.,* 2008). Online consumers are target oriented shoppers. If they do not find what they are looking for, they would immediately switch to another website. Therefore, website functionality is an important element of online retailing performance. The current research endeavors to design a broad strategic model for augmenting e-shopping covering website functionality, drivers of online shopping and perceived risk to be applicable for developing economies like India.

A unifying model that integrates SCM with online retailing phenomenon is lacking in Indian context, a void that the present research seeks to deal with. Online retailers have to secure

stock of products and thus have to build a strong relation with different distributors. SCM encompasses oversight of materials, information and finances as they move in a process from supplier to manufacturer to wholesaler to retailer and finally to the consumer. SCM involves coordinating and integrating these flows both within and among companies. Organizations' use these drivers to support either a supply chain strategy focussing on "efficiency" or a supply chain strategy focussing on "effectiveness'. Most online retailers are losing money mainly because they do not have enough volume to justify the expense of a dedicated distribution network. Challenge for online retailers is to provide timely delivery at far off places. For effective SCM practices like strategic supplier partnership, information sharing, information quality and information intensity and integration intensity play a pivotal role (Hamister, 2012). The study therefore tends to concentrate on important dimensions of SCM of online retailers in North India.

The reported frameworks are developed principally from the research done in the industrialized world (Bathgate *et al.,* 2006). The models covering U.S and Western Europe are more applicable in western context (Palvia, 2013). Even though, there has been an increase in online retailing in India and other emerging economies, however the research in Asian and other developing economies lack the vigor and dynamism prevalent in research undertaken in western countries (Omar *et al.*, 2011). Moreover, emerging markets have diverse institutional scenarios in terms of their socio-economic and regulatory aspects. This necessitates a research to empirically analyze the validity of the models of developed world for developing and emerging economies with diverse cultures (Palvia, 2013; Omar *et al.,* 2011). The main thrust of this research is to derive a theoretical model by integrating website functionality, drivers of online retailing and hindrance factors to online retailing in Indian context.

3.2 Scope of the study

The current research intends to propose and validate a comprehensive model towards increasing the performance of online retailers in North India. The study also analyzes the dimensions of supply chain management of online retailers. The outcome of the current research will facilitate online retailers, assist them adopt apposite alternatives and recognize the predictors of e-shopping to come up with appropriate policies and actions for enhancing it. Thus, on the basis of SCM, website characteristics and customer satisfaction, the proposed study makes an effort to develop a model for enhancing performance of online retailers in

North India. Focus of this research is on online retail customers and current online retailing companies and their technology links i.e. their websites. The research will be also helpful for online retailers to work on critical success factors to inspire the consumers. The study has tried to validate two new dimensions of e-Shopping, viz. cash-on-delivery and ease of ordering in UTAUT2. The study also empirically analyzes different facets of perceived risk as hindrance factors to online retailing.

3.3 Broad objectives of the study

O1: To identify features of online retailing websites influencing performance of online retailers in North India.

O2: To identify the key drivers of SCM in selected online retailing organizations.

O3: To determine factors influencing customer satisfaction with respect to online retailing.

O4: To analyze hindrance factors of online retailing.

O5: To design a model for improving performance of online retailing.

3.4 Research design and research methods

Research design, sampling design, sources of data collection, and research methods used for data analysis are essential to realise and achieve the objectives. The present section covers these. The section also describes the details of questionnaire, its validity and reliability.

3.4.1 Research Design

The study used exploratory research design to find the dimensions of supply chain management, website functionality and the impact of cash-on-delivery mode of payment on customer satisfaction. Further, to analyze the drivers of online shopping, facets of perceived risk and their relationships with customer satisfaction descriptive research design was used. The study uses survey method for collecting the responses from e-retailers for identifying the drivers of Supply Chain Management, dimensions of website functionality, drivers of online retailing and perceived risk from the users of online shopping.

3.4.2 Survey instrument

The study covers data collected from respondents of North Indian states. The population is the online shoppers. For covering supply chain management, online retailers of India were included in the study. The items in the scale of website functionality were adapted from the previous studies by Wolfinbarger and Gilly, (2003) and Lee and Kozer (2010). The items in scale of website functionality included items on security and privacy, website design, navigation, customization and consistency. There was an item to understand whether integration of website with social media facilitates online shopping (Annexure 1)

The items of constructs of SCM were based on the study of Hamister, 2012. These items were customized and modified in context of online retailing. Regarding drivers to online retailing, the items were adapted from Venkatesh *et al.,* (2012). These items were further modified to fit online retailing context. The cash-on-delivery construct had five items. This construct is new addition and adopted from study by Tandon *et al.* (2016). Ease of ordering items were new scale items and added to make the scale suitable for developing economies. Featherman and Pavlou, (2003) and Forsythe *et al.,* (2006) provided the basis for inclusion of items of perceived risk. "Slow internet speed wastes my time" was enhancing its applicability in emerging economies (Annexure 1). The constructs were based on Likert scales ranging from strongly agree option to strongly disagree.

3.4.3 Sample size determination

The present study has covered 500 consumers of online shopping and 60 online retailers. The consumers who have made at least one purchase in a year were selected. Stratified random sampling was used to collect data. To arrive at an appropriate sample size, the present study used the following formula (Scott, 2013):

$n = z2 * \sigma 2 / ME2$

Where n= sample size
z = standard normal random variate (z score)
σ = variance
M. E. = margin of error

So, the calculations at 95% level of confidence works out as under:
$n = (z2 * \sigma 2) / ME2$

n = [(1.96) (1.96) (.24) (.24)] / [(.03) (.03)

n = [(3.8416) (.0576)] / (.0009)

n = (0.2213) / (.0009)

n = 245.89∼ 246

Taking this into consideration, sample of around 500 responses was targeted

3.4.4 Sources of data

Data was collected from the following sources:

Primary Sources

The primary data was collected through two questionnaires. One questionnaire was used to measure drivers of customer satisfaction, website functionality items leading to customer satisfaction. The dimensions of perceived risk and their impact on customer satisfaction was also included. The second questionnaire was used to identify various dimensions of Supply Chain Management of online retailers.

Secondary Sources

The study used secondary sources of information and data besides conducting questionnaires and interviews. Previous studies on technological adoption models, reports on online retailing and published research work has been considered in the study. Various reports were analyzed as a tool for identification of antecedents of customer satisfaction and for understanding the gaps. The aspects covered related to the successes and failures of the initiates undertaken by the firms' proposing the new framework by learning from the successes and failures of the past and prevailing initiatives.

3.5 Data collection procedures and pilot study

To obtain accurate responses and reduce chances of personal bias, a preliminary questionnaire was framed and referred to a pilot group of 50 people. This group was selected on the basis of convenience sampling. Convenient sampling was preferred in pilot study to obtain basic data and trends regarding online shopping. The purpose of choosing convenience sampling was to test the questions on different constructs (Customer satisfaction, Website functionality, SCM, Drivers and Perceive risk). This group included academicians as well as experts from management field. The questionnaire on Supply Chain Management was validated from the senior managers of online retailing organizations besides renowned

academicians. Both the pilot groups responded favorably to the questions and suggested changes in the drafting and relevance of questions. Their suggestions were incorporated in the items which were based on interactions with online retailers and academicians. Few questions were clubbed and others were deleted after getting inputs from academicians and managers, as the questionnaire was deemed to be too lengthy. This exercise helped in response precision. The pilot group also suggested to include 'ease of ordering' to make it more suitable for extracting responses from online shopping of developing economies.

The target respondents were service class persons, businessmen and adding up the emerging group, viz. students. The respondents were contacted by means personal visits and the drafted questionnaire was administered to them. The intention was to cover maximum segments of the society. To enhance representativeness of the population, the sample population was drawn from urban and rural areas, it included both the genders. In terms of educational qualification graduates as well as post graduates were included. Further service class people and self employed persons also formed a part of sample. There were many revisits to augment partaking of these persons in the sample. 750 responses were received, but further scrutiny resulted in included only 500 responses complete in all aspects, which were taken for further analysis. Estimated online shopping population in 2014 in India is about 35 million. Females contribute around 40 percent in this. The present sample also has 40.6 percent females. Moreover, youth contribute more to online shopping. In the present research 57.4 percent respondents belonged to age group 18-30, thus making the sample more representative. The first wave covered from March 2014- December 2014. Again the next tenure included sample collection from March 2015-December 2015. For non-response bias the responses collected through these two waves were compared. The data collection through the first wave had (n=378) and second had (n=122). The mean and Standard deviations of early and late respondents were compared. As is shown through results (Table 3.1) there was not much difference in mean and Standard deviation of both the groups, indicating lack of non-response bias. Thus it can be inferred that the sample is representative of entire population and free of non-response bias. Similarly, data was collected from online retailers through personal visits to Delhi and NCR as well as through e-mail.

Table 3.1: Non Response Bias

Construct	Early respondents (378)		Late respondent(122)	
	Mean	Std. Dev	Mean	Std. Dev
Website functionality	3.666	0.54	3.64	0.49
Drivers of online shopping	4.121	0.301	4.149	0.295
Perceived risk	4.023	0.433	3.97	0.36
Customer Satisfaction	3.89	0.6	4.01	0.55

3.6 Validity and Reliability

Validity is defined as the property due to which an instrument determines what it is supposed to measure. Both the questionnaires were validated by the academicians as well as online retailers.

Reliability applies to a measure when similar results are obtained over time and across situations.

To determine the reliability of the scales, Cronbach's alpha is used. The standard of Cronbach alpha is 0.7 (Nunnally, 1978). But higher the coefficients, the measuring instrument is considered more reliable (Ghauri *et al*., 1995). Assessment was done for validity and reliability to ensure meaningful findings. The reliability score of questionnaire has been presented in Table 3.3.

Table 3.2: Reliability Statistics

S.No.	Items	Factor Name	Cronbach Alpha
1.	20	Website functionality	0.841
2.	30	Drivers of online shopping	0.929
3.	18	Facets of perceived risk as barriers to online retailing	0.936
4.	23	Dimensions of supply chain management	0.848
	63	Total	0.966

In the present study, the questionnaire has an overall reliability score of 0.966. Hence the questionnaire was found to be valid and reliable to be used for the present research study.

3.7 Tools and Techniques

The study used Statistical Package for Social Sciences (SPSS) for analysis of primary data and AMOS 20 (Analysis of Moment Structures). Statistical tools like Descriptive Statistics, ANOVA, correlation and factor analysis have been applied to test the hypotheses. AMOS 20 has been used to conduct Confirmatory Factor Analysis (CFA) and for Structural Equation Modeling (SEM). These statistical tools are given below:

3.7.1 Descriptive Statistics

Descriptive statistics offers summary about the sample and about the observations that have been made. Mean and Standard Deviation has been calculated and depicted through tables and figures for the different constructs.

3.7.2 The Analysis of Variance (ANOVA)

ANOVA is a technique to study cause and effect of one or more factors (independent variables) on a single dependent variable. In the present study, One-way ANOVA has been used. ANOVA has been applied to study whether there is significant difference in the means of website functionality, drivers of online retailing, perceived risk and other demographic variables viz. age, gender, education and income.

3.7.3 Factor Analysis

Factor analysis is used to reduce the number of dimensions (Cooper and Schindler, 2006). Exploratory factor analysis followed by confirmatory factor analysis in the present study has been used for reducing the number of variables of website functionality into smaller number of factors. Confirmatory factor analysis has been used to confirm the factor structure of a set of observed of drivers of online retailing and items of perceived risk. CFA was also applied to confirm the variables in dimensions of SCM.

3.7.4 Structural Equation Modeling (SEM)

Structural Equation Modeling is essentially a multivariate analysis technique to analyze relationships. It comprises of specified versions of a number of analysis methods as unique cases and is used to portray relations to test a conceptual or a theoretical model. SEM has been applied in the present research to study the impact of website functionality, drivers of

online retailing and perceived risk as barriers to online retailing. SEM was applied with the help of AMOS 20. Goodness of fit indices have been calculated to see whether they are above the threshold levels.

3.8 Research Framework

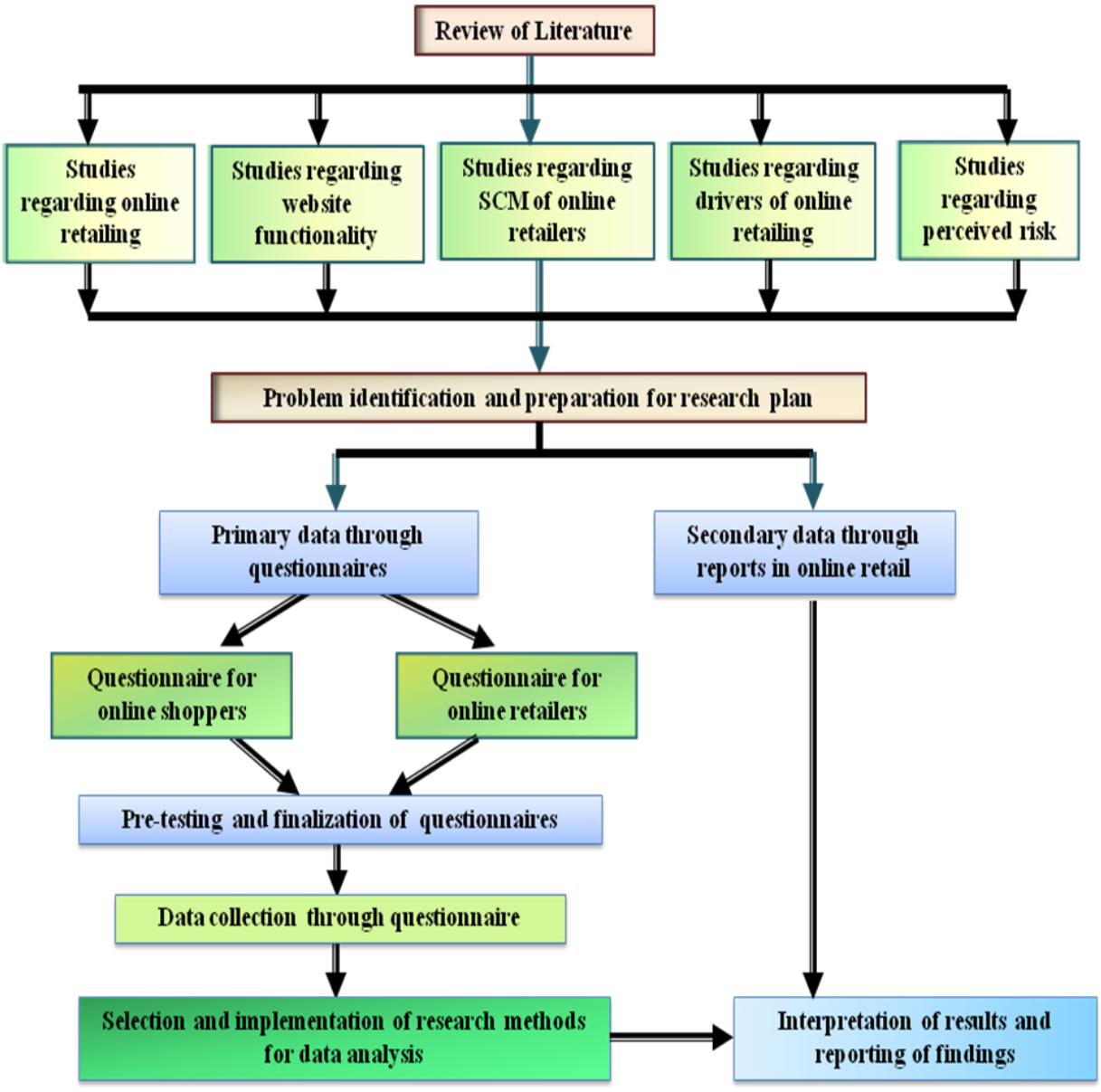


Figure 3.1 Research Framework

3.9 Conceptual Research Model

Figure 3.2 highlights the conceptual research model depicting the hypothesized relationship among constructs viz., website functionality, drivers of online retailing and barriers as

perceived risk and their relation with customer satisfaction in relation to online retailing. Most of the research in online retailing in Indian context has been done to analyze the process for its adoption and identify the factors which lead to online purchase (Nair, 2009; Malik and Sachdeva, 2015; Singh *et al.*, 2005; Khare and Rakesh, 2011). Very few studies have considered barriers to online retailing (Tandon *et al.*, 2016; Thakur and Srivastava, 2015) and a comprehensive model covering all the aspects appears to be missing in Indian literature. Further, website functionality is also considered as a solitary construct in many studies (Calisir *et al.*, 2010; Kim and Stoel, 2004; Seffah *et al.*, 2008), but it has not been integrated with drivers and perceived risk. Thus, keeping these limitations of earlier studies, the present research covers diverse dimensions viz., website functionality, drivers of online shopping and perceived risk and an effort has been made to examine their relation with customer satisfaction, to derive an inclusive model of online shopping explicitly for the developing and emerging economies. As reported in earlier studies and reports, 80 percent of online shopping is due to COD. This is evident through high collections Rs. 2.8 billion through COD in India in 2014. Most of the Indian studies (Thakur and Srivastava, 2015; Kumar and Dange, 2014; Sharma and Rawat, 2014) have highlighted COD mode of payment as main stimulator as most of the consumers prefer to pay online through COD mode of payment. Cash-on-delivery as suggested through these studies has prime importance, but there is a need to examine and validate this, thus COD mode of payment has been integrated as a driver to online retailing. Similarly, dimensions of Supply Chain Management of online retailers have not been given due consideration in literature. So a comprehensive conceptual model is proposed for giving direction to the research study.

Figure 3.2 evidently demonstrates that the proposed model is depicting the relationship of website functionality and drivers of online shopping leading to customer satisfaction. It also depicts the facets of perceived risk. Attention on all these factors will increase the performance of online retailers in North India. Some factors may be positively affecting customer satisfaction and some negatively affecting customer satisfaction and need to be analyzed. This will help online retailers to increase confidence in consumers towards online shopping and may bring an affirmative change in the attitude of users.

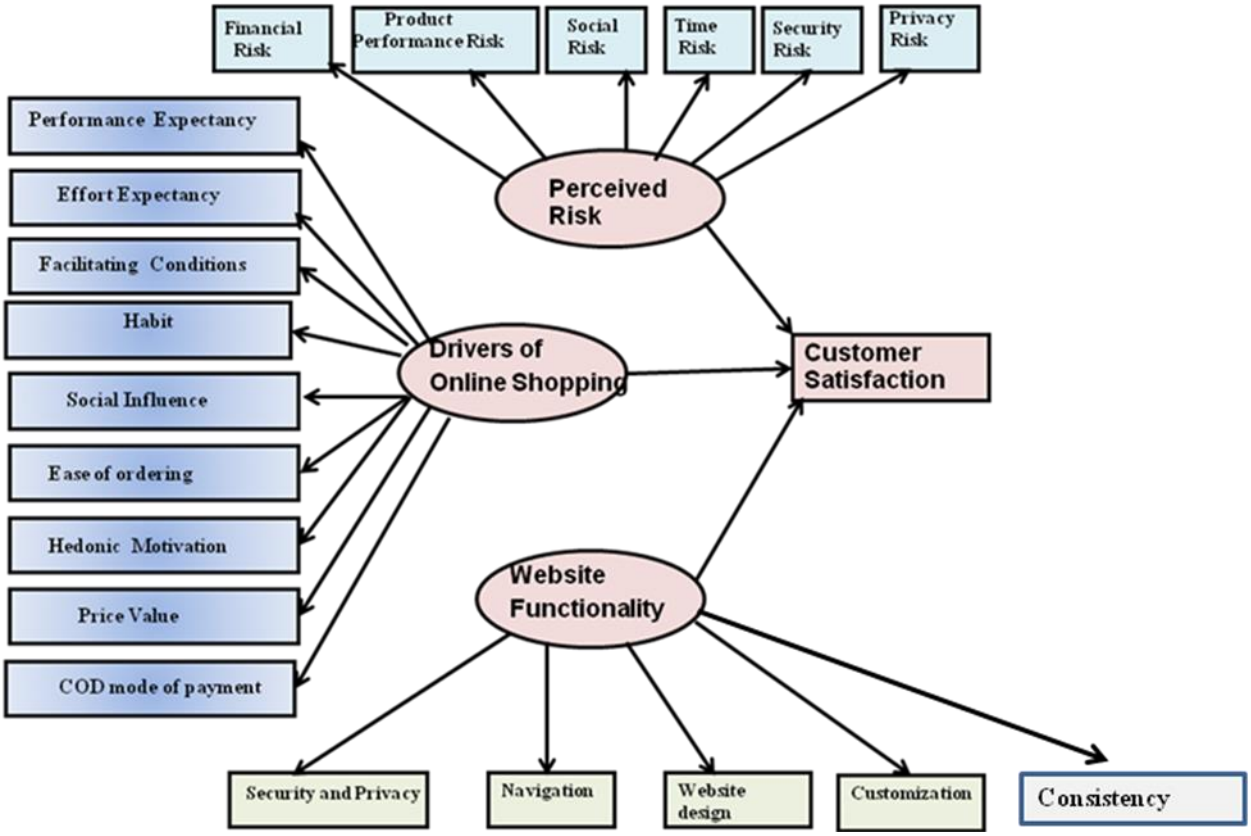


Figure 3.2 Conceptual research model depicting impact of website functionality, drivers of online retailing and perceived risk as hindrance factors on customer satisfaction

3.10 Concluding remarks

The chapter explains the details of data collection from online shoppers as well as online retailers. This chapter portrays in detail the research design and methodology adopted for the present study. The chapter also explains the sample frame, questionnaire design and constructs measurement, pilot study and validity and data collection techniques. In this chapter, the outline of research methods used for designing the comprehensive model of online retailing are given. The chapter portrays various tools and techniques that have been applied to test the hypotheses.

CHAPTER 4

DATA ANALYSIS AND INTERPRETATION

This chapter deals with the data analysis and interpretations of research study. The findings focus on website functionality factors, drivers of online retailing and their relationship with customer satisfaction, factors of perceived risk as barriers and supply chain management practices of online retailers.

Section 4.1 provided the results of the analysis of demographic profile of online shoppers. Section 4.2 discusses the characteristics of sample respondents. Section 4.3 discusses and analyzes the website functionality, drivers of SCM, drives of online shopping, perceived risk dimensions factors and their impact on customer satisfaction. The chapter concludes with the analysis of demographic influences on the respondents on website functionality, drivers to online retailing and perceived risk as hindrance factor using one way ANOVA and independent t-test with customer satisfaction.

4.1 Demographic profile of the respondents

The following section is covering the demographic characteristics undertaken in the present study are explained separately as below:

4.1.1 Gender of Respondents - The sample was dominated by males**.** Gender-wise analysis as shown in Figure 4.1.1 indicates that 59.40 percent respondents were males and remaining 40.60 percent were females.

Table 4.1.1: ***Gender of respondents***

Gender (n=500)	***Number***	***Percentage***
Male	297	59.4
Female	203	40.6

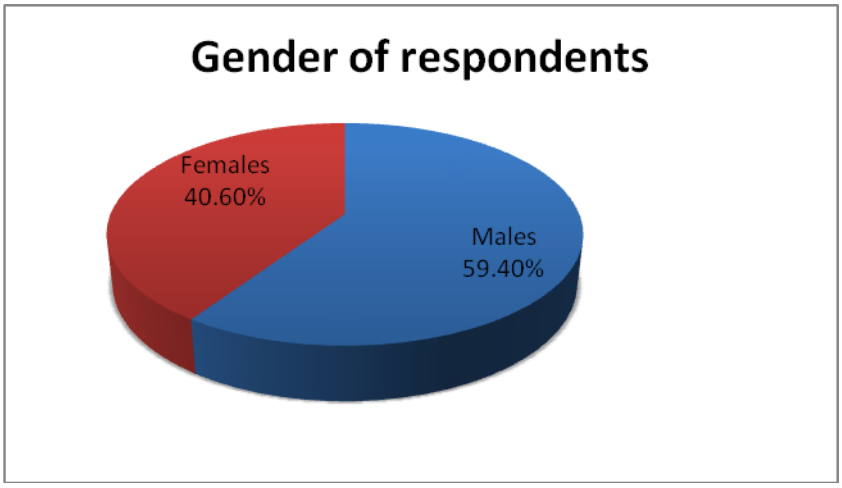


Fig. 4.1.1 Gender

4.1.2 Age of sample

Three age groups were undertaken in study. These are: 18-30; 31-45 and over 45. As depicted through Figure 4.1.2, respondents falling in the age group of 18-30 years are 57.4 percent. This is followed by 24 percent of respondents in the age group of 31-45. 18.6 percent respondents are over 45 years. The response rate from the last category i.e. over 45, is lower than the other two other categories.

Table 4.1.2: *Age*

Age of respondents **(n=500)**	***Number***	***Percentage***
18-30	287	57.4
31-45	120	24
More than 45	93	18.6

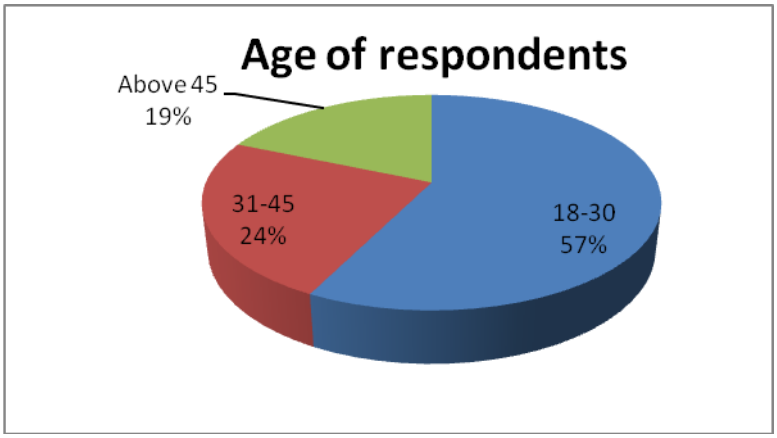


Figure 4.1.2: Age of sample

4.1.3 Educational qualification of Respondents

Three levels of education chosen for the survey were: Undergraduate, Graduate and Postgraduate. Figure 4.1.3 indicates that majority of respondents are postgraduates. This group comprises 52 percent of the sample followed by undergraduates with 26 percent of the sample followed by 22 percent as graduates.

Table 4.1.3*: Education qualification of respondents*

Education Qualification of respondents **(n=500)**	***Number***	***Percentage***
Undergraduate	131	26.20
Graduate	111	22.20
Post graduate	258	51.60

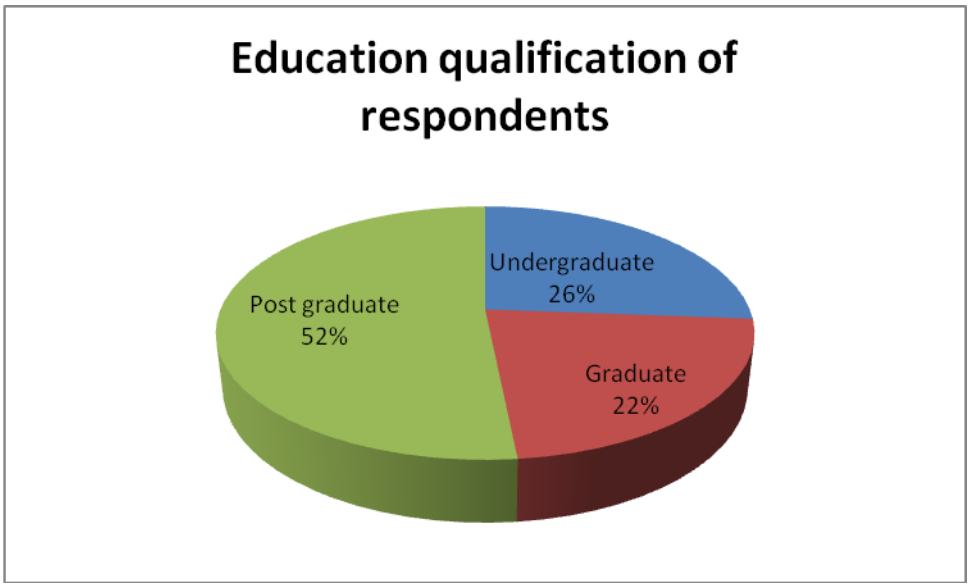


Fig. 4.1.3: Education qualification of respondents

4.1.4 Nature of respondents

Among the three categories, service class dominated the sample (46 percent) followed by students (43 percent). Only a small fraction of sample i.e., 11 percent was self-employed.

Table 4.1.4: ***Nature of respondents***

Nature of respondents **(n=500)**	***Number***	***Percentage***
Student	213	42.60
Self-employed	56	11.20
Service	231	46.20

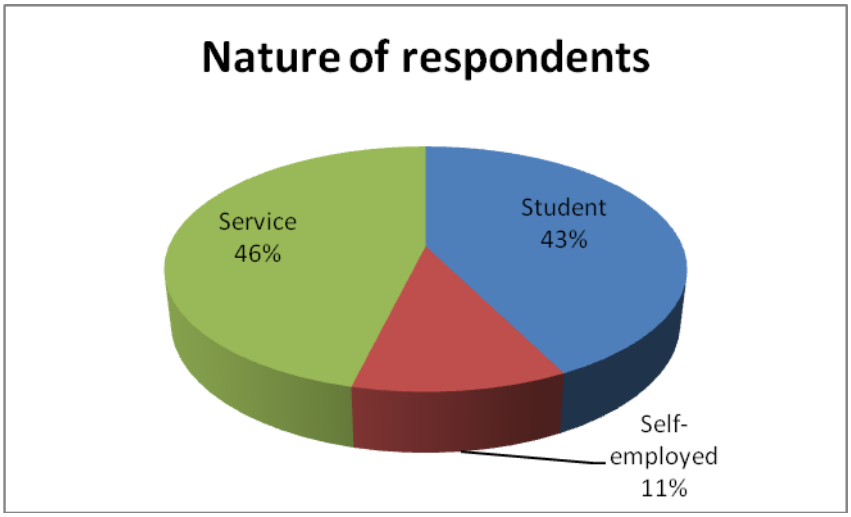


Fig. 4.1.4 Nature of respondents

4.2 Characteristics of sample respondents

This section depicts the characteristics of respondents. These characteristics are described below separately.

4.2.1 Hours spent on internet

Figure 4.2.1 and table 4.2.1 depict the number of hours spent on internet by respondents. Majority of the respondents (37.2) devote 8-16 hours in a week. This is followed by 34.4 percent respondents who spend more than 16 hours on internet. These findings indicate that majority of sample respondents are confident in using internet.

Table 4.2.1: ***Hours spent on internet***

Hours spent on internet in a week (n=500)	*Number*	*Percentage*
Less than 7 hours	142	28.40
8-16 hours	186	37.20
More than 16 hours	172	34.40

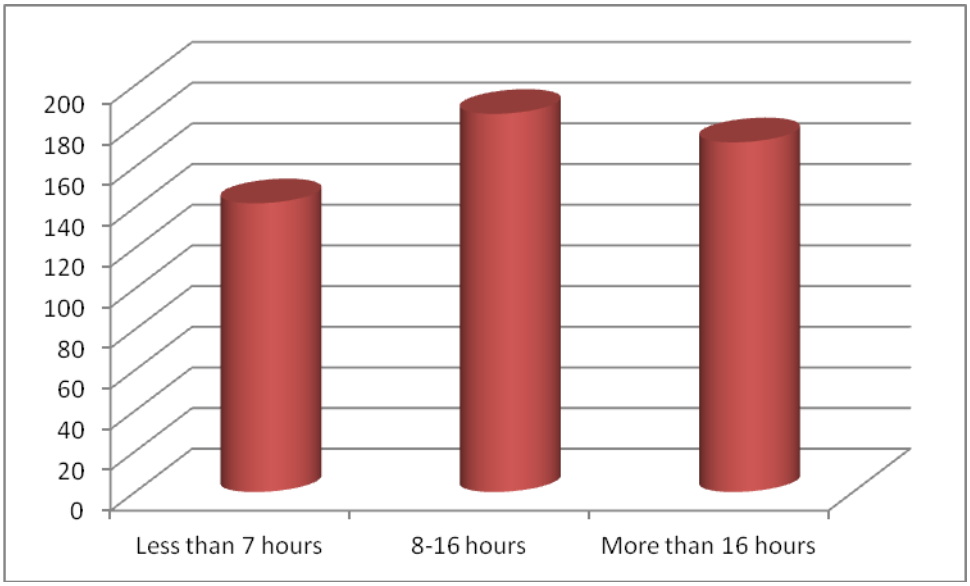


Figure 4.2.1: Hours spent on internet in a weeek

4.2.2 Years of online shopping

A significant number of respondents (46 percent) had adopted online shopping from 1-3 years where as 39.2 percent of the sample respondents have been shopping online from one year. Only 15 percent of sample respondents had been shopping online from more than 3 years.

Table 4.2.2*: Years of online shopping*

Years of online shopping (n=500)	*Number*	*Percentage*
Less than 1 year	196	39.20
1-3 years	230	46.00
More than 3 years	74	14.80

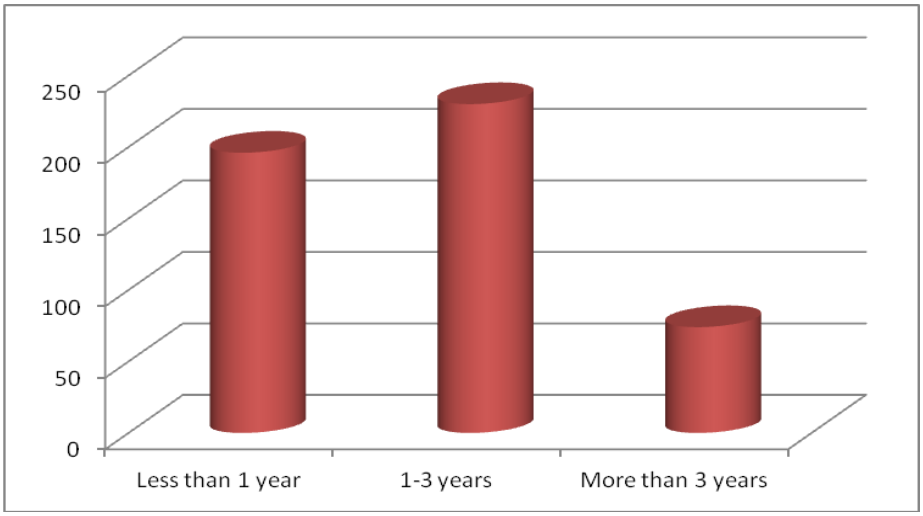


Fig. 4.2.2: Years of online shopping

4.2.3: Hours spent on online shopping in a month

An effort was made to study the number of hours spent on online shopping in a month. 45.4 percent of respondents spent 2-6 hours for online shopping in a month followed by 42.4 percent respondents who spent less than 2 hours on online shopping in a month. Only 12.2 percent of respondents spent more than 6 hour for online shopping in month which indicate that people in India have inhibitions regarding online shopping till date.

Table 4.2.3: ***Hours spent on online shopping in a month***

Hours spend on online shopping in a month (n=500)	***Number***	***Percentage***
Less than 2 hours	212	42.40
2-6 hours	227	45.40
More than 6 hours	61	12.20

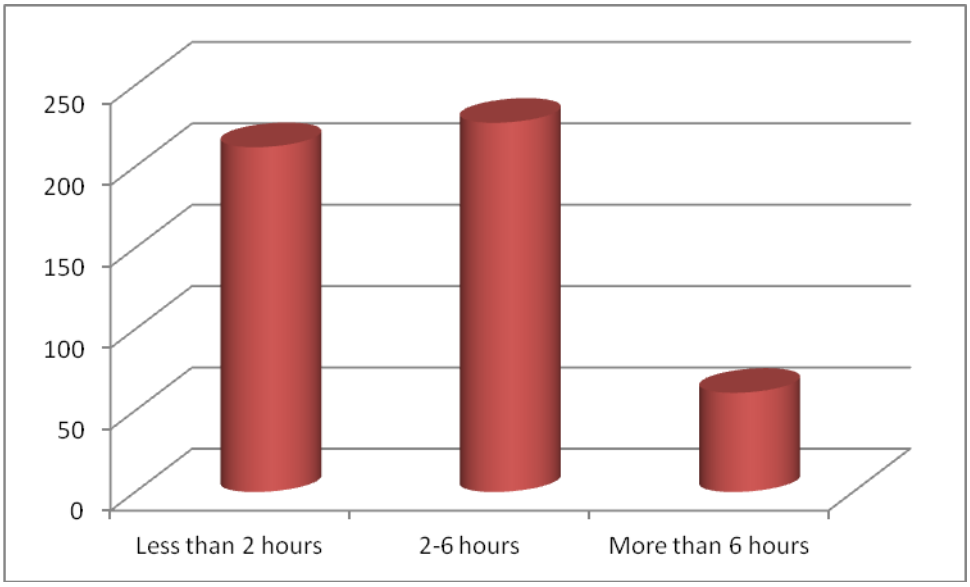


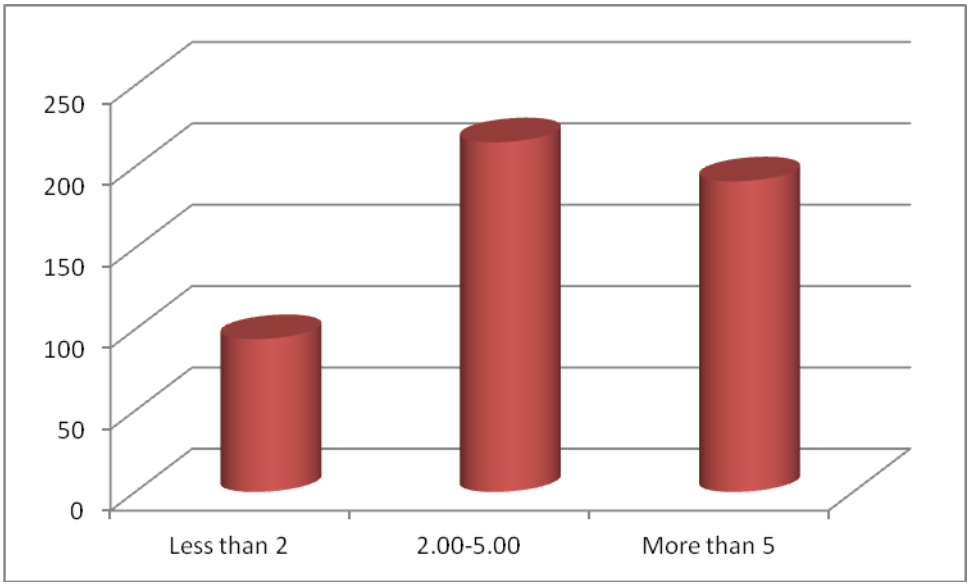
Fig. 4.2.3: Hours spent on online shopping in a month

4.2.4: Products purchased online from past six months

Table 4.2.4 summarizes the products purchased by the respondents. It can be inferred that 43 percent of respondents had purchased 2-5 products online. This was followed by 38.2 percent. These respondents had bought more than five products online.

Table 4.2.4: ***Products purchased online***

Number of products purchased online in a month (n=500)	***Number***	***Percentage***
Less than 2	94	18.80
2-5	215	43.00
More than 5	191	38.20



4.2.4: Products purchased online

4.2.5: Preferred mode of payment

Table 4.2.5 indicates the preferred mode of payment. The results highlight that COD is the dominant mode of payment as 66.4% aspire to pay through COD mode of payment. Other payment options like debit card (21%) and credit card (12.6%) was the least preferred mode of payment. As COD emerged as the preferred mode of payment, therefore it was considered and validated as a driver in the study.

Table 4.2.5*: Preferred mode of payment*

Preferred mode of payment (n=500)	***Number***	***Percentage***
Cash-on-delivery	332	66.40
Credit card	63	12.60
Debit card	105	21.00

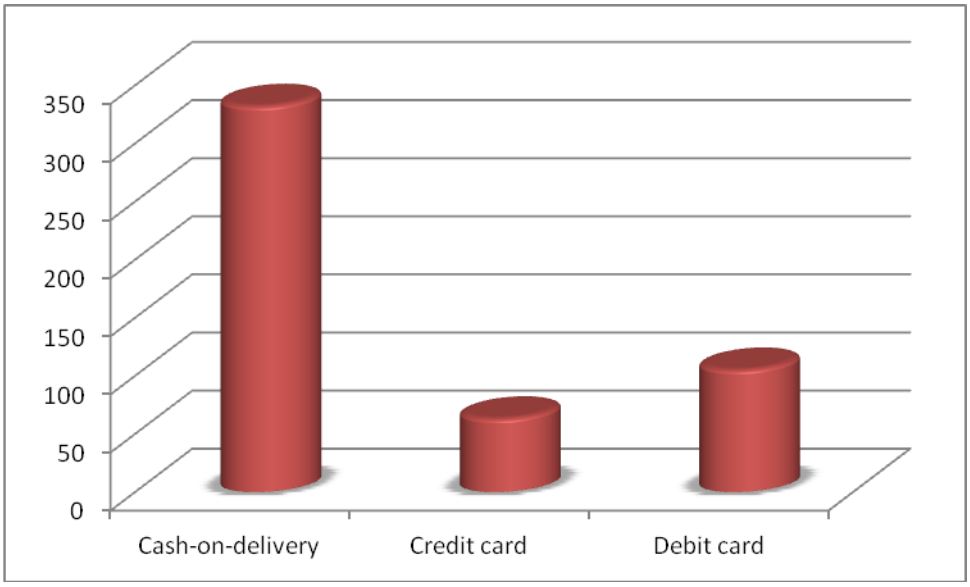


Fig. 4.2.5: Preferred mode of payment

4.3 Analysis of Website Functionality, SCM practices of online retailers, Drivers of online retailing, Hindrance factors of online retailing using Structural Equation Modelling (SEM)

In this section data was analyzed using SPSS 20 and AMOS 20.This part of the study is a confirmatory and exploratory study as it is testing a well established theory as well as new constructs.

Exploratory Factor Analysis (EFA)

EFA brings inter-correlated variables together under more general, underlying variables. More specifically, the goal of factor analysis is to reduce "the dimensionality of the original space and to give an interpretation to the new space, spanned by a reduced number of new dimensions which are supposed to underlie the old ones" (Rietveld and Van Hout 1993: p. 254), or to explain the variance in the observed variables in terms of underlying latent factors" (Habing 2003: p. 2) Thus, factor analysis offers not only the possibility of gaining a clear view of the data, but also the possibility of using the output in subsequent analyses (Field, 2000; Rietveld and Van Hout, 1993).

Confirmatory Factor Analysis-Measurement Model

Confirmatory Factor Analysis (CFA) is a statistical technique for verifying the factor structure of a set of variables. CFA allows the researcher to test the hypothesis that a relationship between observed variables and their underlying latent constructs exists (Suhr, 2006). The estimation of the confirmatory measurement model is used to determine that how exogenous variables measure the latent variable constructs.

SEM is used to describe the relationship between two variables namely latent and observed/measured variables. Observed or measured variables are one that are being measured by the researcher directly. The latent variables are not being measured directly but are of interest to the researcher. Therefore, to observe latent variables, a conceptual model must be developed to express latent variables in terms of observed variables. For developing SEM framework, the present study uses AMOS 20 statistical software and includes both measurement component and structural component. The measurement component determines that how exogenous variables measure the latent variable constructs and structural component models the relationship between latent variable constructs.

Both parts of the model are combined to design a holistic model that comprehensively describes the relationship between the variables. The estimation of the structural model follows the estimation of confirmatory measurement model.

For evaluation of customer satisfaction, website functionality, drivers of online shopping and perceived risk were chosen based on literature review. The factors of supply chain management were also chosen from previous studies.

The measurement model represents confirmatory factor analysis that specifies the pattern by which each measure loads on a particular latent factor. It defines the relationship between the observed and unobserved variables. The measurement model only deals with validating the model. The model was specified and tested on the basis of sample data. Sample data comprised of all observed variables.

Validation of Measurement Model

To assess the measurement model evaluation, convergent and discriminant validity of each of the measurement scale is done. It is imperative to establish validity and reliability checks of the instrument. The following construct validity checks were carried out:

- Content validity
- Composite reliability
- Convergent validity
- Discriminant validity

The content validity has already been considered in section 3.4 of Research Methodology chapter. The discriminant validity has been checked by using Composite Reliability (CR) and Average Variance Extracted (AVE).

- *Composite Reliability:* Composite Reliability is defined as the degree to which measurements are free from error and therefore yield consistent results. CR>0.7

CR= (square of summed standardized loadings) /
(square of summed standardized loadings + sum of measurement error variances)

$$CR = \frac{(\Sigma \lambda i)^2}{[\Sigma \lambda i)^2 + \Sigma(\delta i)]} \quad \ldots\ldots (1)$$

Where λ is the standardized factor loadings and δ is the indicator measurement error.

- *Convergent validity*: Convergent validity is shown when each measured item correlates strongly with its assumed theoretical construct. For the convergent validity, the factor loadings and Average Variance Extracted (AVE) should be greater than 0.5. The formula for calculating AVE using the formula suggested by Hair *et al*., (1995) as given below:

AVE= (sum of squared standardized loadings) /
(sum of squared standardized loadings + sum of measurement error variances)

$$AVE = \frac{\Sigma \lambda i^2}{\Sigma \lambda i^2 + \Sigma \delta i} \quad \ldots\ldots (2)$$

Where λ is the standardized factor loadings and δ is the indicator measurement error.

Discriminant validity: Discriminant validity is the extent to which a construct is truly distinct from other constructs. Discriminant validity is considered when Square root of AVE greater than inter-construct correlations

4.3.1 Analysis of Website functionality and customer satisfaction

Objective 1 (O1): To identify features of online retailing websites influencing performance of online retailers in North India.

The following hypothesis as formulated in chapter 2 of Review of Literature were tested and the results are given in this section**:**

H1 (a): Website functionality is a multi-dimensional construct significantly predicted by security and privacy, website design, navigational characteristics, customization and consistency feature.

H1 (b): There is a significant positive association between website functionality and customer satisfaction.

Based on the literature review, 20 items covering different aspects of website functionality were subjected to factor analysis using SPSS version 20. Thus, to reduce the number of variables through deletions by looking at whether underlying assumptions are met in Eigen values (>1), communalities (>.50) and factor loadings (>.50), Principal Component Analysis along with Varimax rotation was performed. Items having factor loadings less than 0.5 were deleted so that all the factors can explain variance.

After the underlying factors were extracted using EFA, it was then possible to confirm the factorial structure using CFA, the path model which is the logical extension of multiple regression models to allow more meaningful relationships among observed variables. Thus in the present study, fitness, reliability and validity of measurement models for all constructs is measured using CFA.

4.3.1.1 Measurement model, Reliability and validity

To assess reliability and validity of the proposed measurement model, confirmatory factor analysis (CFA) was carried out on items of website functionality. The items of consistency features were removed due to low factor loadings and unclear factor structure. One item of website design (WD4) and NAV5 of navigation were also omitted due to low factor loadings. Table 4.3.1.1 depicts the results of CFA indicating that standardized loadings of all the variables included are significant. The instrument demonstrates evidence of convergent validity as AVE (average variance extracted) is more than 0.50 in all occasions. The results also confirmed composite reliability of constructs as the value was more than 0.70 for all variables. To measure the discriminant validity square root of AVE of each construct was undertaken. The instrument illustrated discriminant validity as AVE estimate of each construct was larger than the squared correlations of this construct to any other construct (Fornell and Larcker, 1981).

Table 4.3.1.1: ***Measurement model, dimensionality, reliability and validity statistics***

Variables	Items	Std. estimate	S.E	C.R	Composite reliability	AVE
Navigation (NAV)	NAV1*	0.73				
Mean 3.870	NAV2	0.723	0.120	9.318	0.74	0.50
SD 0.631	NAV3	0.653	0.088	9.15		
Security and Privacy (SP)						
Mean 3.431	SP1*	0.650				
SD 0.859	SP2	0.851	0.142	12.094	.970	0.50
	SP3	0.75	0.123	11.947		
	SP4	0.541	0.1	9.486		
Customization (CUSTOM)	CUSTOM1*	0.703				
Mean 3.450 SD 0.901	CUSTOM2	0.772	0.162	6.469	0.705	0.545
Website design (WEBD)	WEBD1*	0.652				
Mean 3.870	WEBD2	0.796	0.141	10.016	0.752	0.505
SD 0.742	WEBD3	0.675	0.134	9.888		

Table 4.3.1.2: ***Correlation matrix***

	NAV	SP	WD	CONS
NAV	*0.707*			
SP	.397**	*0.707*		
WD	.399**	.195**	*0.710*	
CONS	.328**	.295**	.286**	*0.738*

**Correlation is significant at 0.01 level (2-tailed)
*Correlation is significant at 0.05 level (2-tailed). The square root is shown in italics.

4.3.1.2 Structural model of Website functionality

Table 4.3.1.3 summarizes the results of structural model of website functionality. Website functionality is significantly explained by website design, navigation, customization and security and privacy, partially supporting H1.The results partially confirms the H1 (a) as Website functionality is a multidimensional construct explained by website design, security and privacy, navigation and customization. Navigation had higher value (Std. estimate= 0.850) followed by website design (Std. estimate= 0.630) and customization (Std. estimate=

0.610). Security and privacy though emerged significant had lower loadings. This indicated that people of India have adopted online shopping. Furthermore, the effort of online retailers by introducing COD has reduced the trepidation of security and privacy.

Table 4.3.1.3: **Structural model of website functionality**

			Estimate	S.E.	C.R.	p
Navigation	<---	WF	0.850			***
Website design	<---	WF	0.630	0.111	6.320	***
Security and privacy	<---	WF	0.520	0.115	6.176	***
Customization	<---	WF	0.610	0.171	5.337	***
Goodness of fit CMIN/df=2.428,GFI=0.95, AGFI=0.922, NFI=0.904, TLI=0.916, CFI=0.935, RMSEA=0.065						

4.3.1.3 Path analysis of Website Functionality and Customer Satisfaction

In order to test the structural model and corresponding theoretical relationship with customer satisfaction path analysis was performed. Website functionality had a positive effect on customer satisfaction. The path coefficient was 0.460, having R^2=0.212 at p<0.001 thereby supporting H1 (b) which states that there is a significant positive association between website functionality and customer satisfaction.

Table 4.3.1.4: **Path analysis of website functionality and customer satisfaction**

			Std. Estimate	R^2	P
Customer satisfaction	<---	Website functionality	0.460	0.212	***
CMIN/df=3.566, GFI =0.931, NFI =0.891, TLI= 0.898, CFI= 0.902, RMSEA= 0.072					

4.3.2 Analysis of key drivers of SCM of online retailers

The following objective and hypothesis as formulated in chapter 2 of Review of Literature were tested and the results are given in this section**:**

Objective 2 (O2): To identify the key drivers of SCM in selected online retailers in North India.

H2: Strategic supplier relationship, delivery dependability, CRM and information sharing are the drivers SCM of online retailers.

4.3.2.1 Measurement model, Reliability and validity

Confirmatory factor analysis was carried on the items of SCM in order to confirm their reliability and validity. Based on the analysis, 22 items out of 30 were retained for further analysis. Three items of delivery dependability, one item of information sharing, three items of CRM and two items of strategic supplier relationship were omitted due standardized factor loadings less than 0.5. Table 4.3.2.1 depicts the results of CFA indicating that standardized loadings of all the remaining variables included are significant. The instrument demonstrates evidence of convergent validity as AVE (Average Variance Extracted) is more than the threshold value of 0.50. The instrument also demonstrates evidence of composite reliability (values >0.70 in all occasions) and discriminant validity (AVE estimate of each construct is larger than the squared correlations of this construct to any other construct (Fornell and Larcker, 1981). Therefore, Hypothesis 2 is accepted which states Strategic supplier relationship, delivery dependability, CRM and information are the drivers SCM of online retailers.

***Table 4.3.2.1*: Measurement model, dimensionality, reliability and validity statistics**

				Std. Estimate	S.E.	C.R.	AVE	Composite reliability
	SS2	<---	SSR	0.822				
Strategic supplier relationship	SS3	<---	SSR	0.956	0.17	7.378	0.53	0.867
Mean=4.582	SS6	<---	SSR	0.663	0.243	5.307		
S.D=0.469	SS7	<---	SSR	0.577	0.272	3.802		
	CRM1	<---	CRM	0.7	0.258	5.467		
	CRM2	<---	CRM	0.57	0.181	4.323		
Customer relations management	CRM5	<---	CRM	0.669	0.2	5.186		
Mean=4.358	CRM6	<---	CRM	0.908	0.186	7.549	0.702	0.902
S.D=0.605	CRM8	<---	CRM	0.769				
	CRM9	<---	CRM	0.972	0.324	8.109		
	INF1	<---	INF	0.814				
	INF2	<---	INF	0.72	0.178	5.846	0.604	0.913
Information sharing	INF3	<---	INF	0.866	0.124	7.547		
Mean=4.512	INF4	<---	INF	0.652	0.176	5.148		
S.D=0.595	INF5	<---	INF	0.658	0.138	5.212		
	INF6	<---	INF	0.875	0.124	7.66		
	INF7	<---	INF	0.821	0.105	6.992		
	DELV3	<---	DELV	0.659				
	DELV5	<---	DELV	0.819	0.327	5.161	0.603	0.881
Delivery dependability	DELV6	<---	DELV	0.577	0.148	6.552		

Mean=4.09	DELV7	<---	DELV	0.831	0.321	5.227		
S.D=0.862	DELV8	<---	DELV	0.941	0.345	5.145		
Performance	PER1	<---	PER	0.715				
Mean=4.018	PER2	<---	PER	0.704	0.171	4.225	0.543	0.780
S.D=0.87	PER3	<---	PER	0.788	0.197	4.457		

***Table 4.3.2.2*: Correlation matrix**

	AVG SS	***AVG CRM***	***AVGINF***	***AVGDEL***
AVG SS	***0.728***			
AVG CRM	***.510****	***0.837***		
AVGINF	***.733****	***.634****	***0.777***	
AVGDEL	***.103***	***.457****	***.407****	***0.776***

**Correlation is significant at 0.01 level (2-tailed)
*Correlation is significant at 0.05 level (2-tailed). The square root is shown in italics.

***Table 4.3.2.3*: Structural model of drivers of SCM**

			Estimate	S.E.	C.R.	P
Strategic Supplier relationship	<---	SCM	0.80			
Customer Relations Management	<---	SCM	0.71	0.216	5.299	0.000***
Information Sharing	<---	SCM	0.893	0.225	6.293	0.000***
Delivery Dependability	<---	SCM	0.494	0.384	2.958	0.003

CMIN/df=2.259,GFI=0.980, NFI=0.975, IFI=0.916, TLI=0.911, CFI=0.985, RMSEA=0.090

Structural model confirms strategic supplier relationship, CRM, Information sharing and Delivery dependability as significant drivers of SCM of online retailers.

4.3.2.3 Path analysis of drivers of SCM and performance of online retailers

In order to test the structural model path analysis was performed. Drivers of SCM had a positive effect on performance of online retailers. The path coefficient was 0.490, having R^2=0.24 at $p<0.001$ thereby supporting H2 (b) which states that there is a significant positive association between drivers of SCM and performance of online retailers.

Table 4.3.2.4: **Path analysis of SCM drivers and performance of online retailers**

			Std. Estimate	R^2	P
Performance of online retailers	<---	Drivers of SCM	0.490	0.24	0.000***
CMIN/df=1.040, GFI =0.989, NFI =0.911, TLI= 0.989, CFI= 0.990, RMSEA= 0.027					

4.3.3 Analysis of Drivers of online retailing and customer satisfaction

The following hypothesis as formulated in chapter 2 of Review of Literature were tested and the results are given in this section**:**

O3: To determine factors influencing customer satisfaction with respect to online retailing.

H2 (a): Performance expectancy, effort expectancy, social influence and facilitating conditions are the drivers of online retailing.

H2 (b): Hedonic motivation, price value and habit are the drivers of online retailing.

H2 (c): Ease of ordering and Cash-on-delivery mode of payment (COD) are drivers of online retailing.

H2 (d): There is a significant positive association between drivers of online retailing and customer satisfaction.

4.3.3.1 Measurement model, reliability and validity of drivers of online retailing

To assess reliability and validity of the proposed measurement model, confirmatory factor analysis (CFA) was carried out on items. Based on the analysis, three items of Habit (HAB1, HAB2 and HAB3), PE5 (Performance expectancy), EE4 (Effort expectancy), EOD4 (Ease of ordering), FAC4 (Facilitating conditions), HM4 (Hedonic motivation), COD1 (Cash-on-delivery mode of payment omitted due to low factor loadings. Table 4.3.3.1 depicts the results of CFA indicating that standardized loadings of all the variables included are significant. The instrument demonstrates evidence of convergent validity (average variance extracted >0.50 in all occasions), composite reliability (values >0.70 in all occasions) and discriminant validity (AVE estimate of each construct is larger than the squared correlations of this construct to any other construct (Fornell and Larcker, 1981). These results deduce us to accept hypothesis H2 (a) Performance expectancy, effort expectancy, social influence and facilitating conditions are the drivers of online shopping and hypothesis H2 (c) Ease of

ordering and Cash-on-delivery mode of payment (COD) are drivers of online shopping. The results also partially support H2 (b) which states that Hedonic motivation, price value are the drivers of online shopping.

Table 4.3.3.1: **Measurement model, dimensionality, reliability and validity statistics**

Variables	Items	Standardised estimate	S.E	C.R	Composite reliability	AVE
Performance expectancy (PE)	PE1	0.901	0.091	15.443		
Mean=4.030	PE2	0.911	0.091	15.577	0.905	0.708
S.D=0.669	PE3	0.900	0.095	15.392		
	PE4*	0.621		10.460		
Effort expectancy(EE)	EE2*	0.619				
Mean=4.179	EE3	0.759	0.100	11.788	0.769	0529
S.D=0.560	EE4	0.788	0.083	9.794		
Ease of ordering (ORD)	ORD2	0.701	0.074	12.673		
Mean=3.859	ORD3*	0.820				
S.D=0.569	ORD4	0.928	0.098	14.757	0.861	0.676
Facilitating conditions(FAC)	FAC1	0.997	0.013	71.265		
Mean=4.339	FAC2	0.969	0.020	54.002	0.977	0.935
S.D=0.451	FAC3*	0.949				
Hedonic Motivation(HM)	HM1*	0.898				
Mean=4.110	HM2	0.910	0.034	29.038	0.930	0.816
S.D=0.759	HM3	0.919	0.033	29.624		
Perceived Value(PVA)	PVA1	0.680	0.050	15.569		
Mean=4.221	PVA2	0.987	0.086	16.522	0.849	0.658
S.D=0631	PVA3*	0.729				
Social Influence(SIA)	SIA1	0.760	0.107	12.149		
Mean=4.381	SIA2	0.871	0.131	12.585	0.800	0.573
S.D=0.562	SIA3*	0.621		8.972		
Cash-on-delivery(COD)	COD2*	0.650				
Mean=3.860	COD3	0.649	0.154	11.535		
S.D=0.384	COD4	0.919	0.1	15.303	0.860	0.612
	COD5	0.889	0.078	16.231		
Customer Satisfaction	CS1*	0.881				
Mean 3.910	CS2	0.919	0.033	29.900	0.929	0.727
SD 0.601	CS3	0.901	0.034	29.866		
	CS4	0.890	0.11	10.8		
	CS5	0.640	0.077	12.011		

Table 4.3.3.2: **Correlation matrix of drivers of online retailing**

	PE	EE	ORD	FAC	HM	PVA	COD	SI	CS
PE	*0.841*								
EE	.490**	*0.727*							
ORD	.291**	.170**	*0.822*						
FAC	-.009	.029	.103*	*0.966*					
HM	.074	.073	.038	.295**	*0.903*				
PVA	.043	.057	.080	.375**	.339**	*0.811*			
COD	.029	.051	.031	.143**	.110*	.283**	*0.783*		
SI	.069	.091*	.040	.039	.154**	.020	.054	*0.756*	
CS	.388**	.396**	.160**	-.039	.015	-.009	-.005	.045	*0.852*

**Correlation is significant at 0.01 level (2-tailed)
*Correlation is significant at 0.05 level (2-tailed). The square root is shown in italics.

4.3.3.2 Structural Model of drivers of online retailing

The results of structural model are summarized in Table 4.3.3.3. All the independent variables namely performance expectancy, effort expectancy, facilitating conditions, hedonic motivation, price value, social influence, COD, ease of ordering load on drivers of online shopping. Out of these only Price value emerged as non significant driver. Performance expectancy emerged strongest driver (Std. estimate=0.747) followed by effort expectancy (Std. estimate=0.660) and ease of ordering ((Std. estimate=0.530). Therefore, the results fully support H2 (a): that performance expectancy, effort expectancy, social influence and facilitating conditions are drivers of online retailing and H2(c) which states that: COD and ease of ordering are drivers of online retailing. However, the results of the study partially support hypothesis H2 (b) where hedonic motivation emerged as significant variable and perceived value was insignificant variable.

Table 4.3.3.3: Structural model of drivers of online shopping

Independent Variables	Path		Standardised estimate	S.E.	C.R.	p
PE	<---	Drivers	0.747	0.208	6.513	***
EE*	<---	Drivers	0.660			
ORD	<---	Drivers	0.530	0.281	4.38	***
FCA	<---	Drivers	0.121	0.115	1.886	0.050
HM	<---	Drivers	0.130	0.110	2.354	0.019
PVA	<---	Drivers	0.101	0.089	1.806	0.071
SP	<---	Drivers	0.401	0.144	6.633	***
SIA	<---	Drivers	0.110	0.080	2.102	0.035
COD	<---	Drivers	0.270	0.626	3.034	0.002

Goodness of fit statistics (CMIN/df=2.203, GFI=0.96, NFI=0.981, RFI=0.923, TLI=0.963, CFI=0.986, RMSEA= 0.04)

4.3.3.3 Path analysis of drivers of online retailing

Moving further, the structural model was tested with dependent variable customer satisfaction. The drivers of online shopping confirmed a significant positive association with customer satisfaction. The path coefficient depicted a value of 0.740 having R^2 value 0.55 at p <0.01. These results fully support H 2(d) which states: There is a significant positive association between drivers of online shopping and customer satisfaction.

***Table 4.3.3.4*: Path analysis of customer satisfaction and drivers of online retailing**

			Estimate	R-square	C.R.	P	Result
Drivers	<---	CS	0.74	0.55	2.549	0.011	Support

Goodness of fit statistics (CMIN/df=4.345, GFI=0.956, NFI=0.861, TLI=0.859, CFI=0.892, RMSEA= 0.08)

4.3.4 Analysis of hindrance factors of online retailing and customer satisfaction

Objective 4: To analyze hindrance factors of online retailing.

The following hypothesis as formulated in chapter 2 of Review of Literature were tested and the results are given in this section**:**

H4 (a): Perceived risk is a multidimensional construct and is significantly predicted by product performance risk, financial risk, time risk, security risk, privacy risk and social risk.

H4 (b): The facets of perceived risk are negatively related with customer satisfaction.

4.3.4.1 Measurement model, reliability and validity of perceived risk

Confirmatory Factor Analysis (CFA) was carried out to measure reliability and validity of the proposed measurement model. Based on the standardized loadings obtained PR1 (Product performance risk), and SR4 (Social risk) of perceived risk were omitted due to low factor loadings. Table 4.3.4.1 depicts the results of CFA indicating that standardized loadings of all the variables included are significant. Average variance extracted (AVE) was more than the threshold value of 0.50 indicating convergent validity of the instrument. Further, composite reliability values of constructs were more than 0.70 in all occasions confirming that the instrument demonstrated composite reliability. For assessing discriminant validity, square root of AVE was undertaken and the estimate of each construct was larger than the squared correlations of this construct to any other construct thereby confirming discriminant validity (Fornell and Larcker, 1981).

***Table 4.3.4.1: Measurement model, d*imensionality, reliability and validity statistics**

	Items	Standardized loadings	SE	CR	Composite Reliability	AVE
Financial Risk(FR)	FR1	0.660	0.037	14.028		
Mean=3.721	FR2*	0.981			0.843	0.648
S.D=0.981	FR3	0.740	0.440	15.776		
Product Performance risk(PR)	PR1*	0.650				
Mean=3.82	PR2	0.710	0.246	9.452	0.794	0.567
S.D=0.741	PR3	0.881	0.083	15.917		
Time risk(TR)	TR1	0.610	0.052	10.474	0.847	0.590
Mean=4.780	TR2*	0.590				
S.D=0.361	TR3	0.930	0.070	11.869		
	TR4	0.880	0.060	12.362		
Social risk(SR)	SR2	0.919	0.083	12.188	0.911	0.837
Mean=4.100	SR3*	0.910				
S.D=0.810						
Security risk (SECR)	SECR1	0.811	0.140	11.321	0.791	0.563
Mean=3.459	SECR2	0.820	0.153	11.193		
S.D=0.940	SECR3*	0.601				
Privacy risk(PR)	PRIV1	0.920	0.028	35.039	0.919	0.743
Mean=4.090	PRIV2	0.930				
S.D=0.780	PRIV3	0.901	0.03	33.265		
	PRIV4	0.669	0.041	18.136		

***Table 4.3.4.2:* Correlation matrix of perceived risk of online retailing**

	FR	PR	SR	SECR	PRIV	TR
FR	*0.804*					
PR	.043	*0.752*				
SR	.168**	.197**	*0.914*			
SECR	.027	-.045	.083	*0.752*		
PRIV	.120**	.136**	.709**	.086	*0.861*	
TR	-.014	.249**	.075	.026	.113*	*0.768*

**Correlation is significant at 0.01 level (2-tailed)

*Correlation is significant at 0.05 level (2-tailed). The square root is shown in italics.

4.3.4.2 Structural model of perceived risk

Table 4.3.3.3 summarizes the results of structural model of different dimensions of perceived risk. The five risks of perceived risk i.e., financial, product performance, social, privacy and time risk were found significant. Social risk emerged strongest inhibitor of online shopping adoption (Std. estimate=0.910) followed by privacy risk (Std. estimate=0.780) and time risk (Std. estimate= 0.580). Both product performance risk (Std. estimate=0.220) and financial risk (Std. estimate=0.170) emerged weak deterrents to online shopping. Surprisingly, security risk emerged as an non significant barrier to online retailing. These finding support the hypothesis H4 (a) partially which states that Perceived risk is a multidimensional construct and is significantly predicted by performance risk, financial risk, time risk, privacy and social risk.

Table 4.3.4.3: **Structural model of perceived risk**

			Std. Estimate	S.E.	C.R.	p
Financial Risk*	<---	PR	0.170			***
Social Risk	<---	PR	0.910	1.254	3.550	***
Privacy Risk	<---	PR	0.780	1.051	3.541	***
Product Performance Risk	<---	PR	0.220	0.346	2.847	0.004
Time risk	<---	PR	0.580	0.494	4.042	***
Security Risk	<---	PR	0.110	0.318	1.866	0.062

Goodness of fit indices CMIN/df=1.442, GFI=0.988, AGFI=0.98, NFI=0.98, RFI=0.961, RMSEA=0.035

4.3.4.3 Path analysis of perceived risk and customer satisfaction

The next step involved was testing of the structural model and corresponding theoretical relationships to test the hypothesis H4 (b). The structural model with standardized weights is shown in Figure 4.3. Perceived risk has a significant negative impact on customer satisfaction. Therefore, H4 (b) is accepted which states that the facets of perceived risk are negatively related with customer satisfaction. All the fit indices indicated good fit (Table 4.3.4.3 and 4.3.4.4).

Table 4.3.4.4: **Path analysis of perceived risk and customer satisfaction**

			Estimate	R-square	C.R.	P	Result
Perceived Risk	<---	CS	-0.768	0.58	-3.536	***	Support

Goodness of fit indices CMIN/df=3.116, GFI=0.978, AGFI=0.955, NFI=0.949, RFI=0.961, RMSEA=0.065

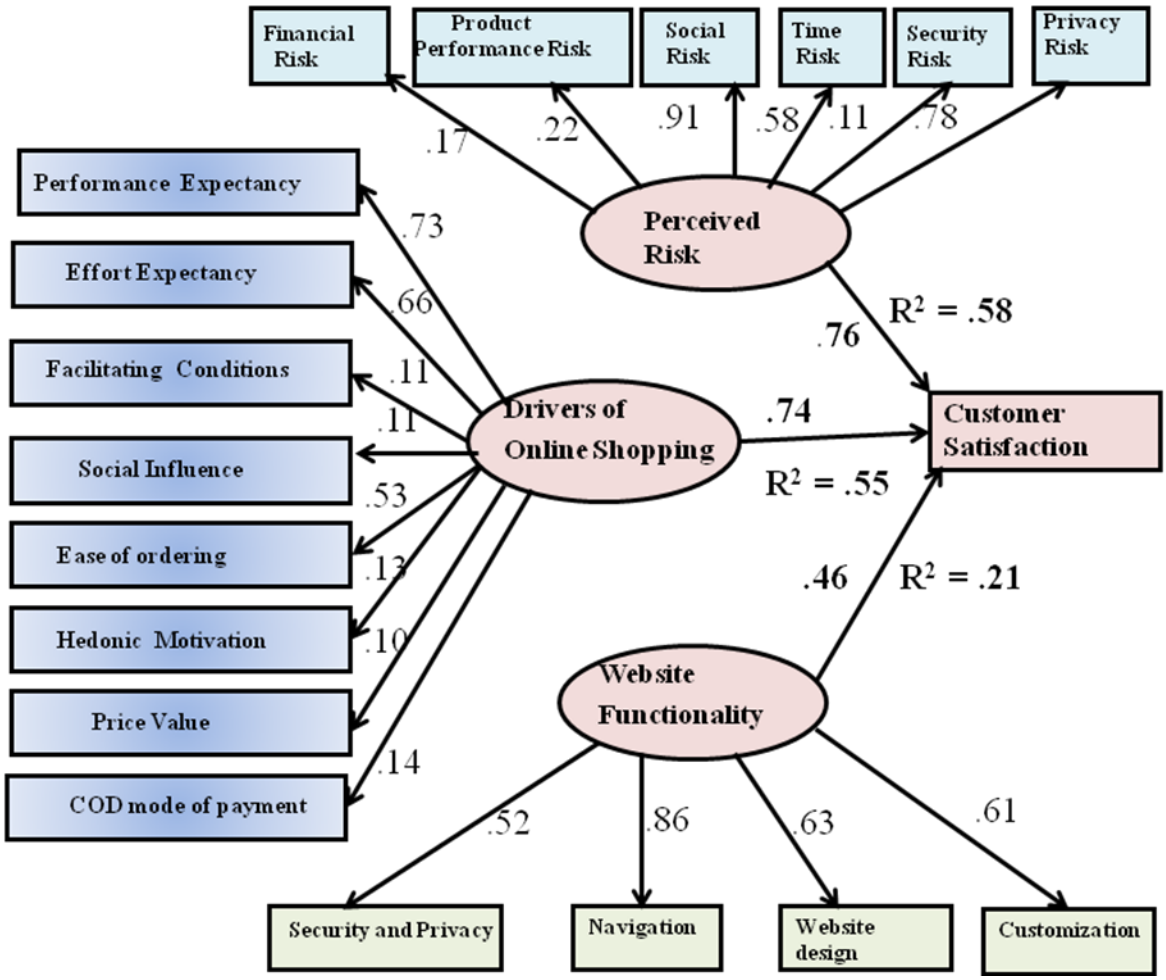


Figure 4.3 Conceptual model depicting hypothesized relationships

4.4 Analyzing the features of website functionality, drivers of online retailing and perceived risk on the basis of demographic characteristics

This section analyzes website functionality, drivers and perceived risk on the basis of demographic profile. These features have an impact on customer satisfaction and are of immense importance for purchasing and repurchasing online. An effort was made to examine whether there exists any discrepancy in perception of groups regarding antecedents of customer satisfaction towards online retailing. Features of all the three main constructs namely website functionality, drivers and perceived risk were analyzed on the basis of age, gender, education qualification and income of the respondents. The analysis was performed using ANOVA for the selected demographic factors (age, gender, education qualification and income).

4.4.1 Analysis of variance (ANOVA) for gender on website functionality, drivers of online retailing and perceived risk

Problem 1: Do significant differences exist in the perception of males and females for online retailing.

Hypothesis 6a: There exists a significant difference in the means of males and females regarding website functionality.

Hypothesis 6b: There exists a significant difference in the means of males and females regarding drivers of online shopping.

Hypothesis 6c: There exists a significant difference in the means of males and females regarding perceived risk.

***Table 4.4.1*: ANOVA on gender and website functionality**

Items of website functionality		Sum of Squares	df	Mean Square	F	Sig.
The websites have adequate security measures.	Between Groups	.111	1	.111	.108	.743
	Within Groups	514.041	497	1.034		
	Total	514.152	498			
I feel safe while using my credit card/ debit card on the websites.	Between Groups	11.263	1	11.263	7.961	.005
	Within Groups	703.138	497	1.415		
	Total	714.401	498			
I trust that the websites will not give my personal details to other websites without my permission.	Between Groups	.035	1	.035	.026	.873
	Within Groups	673.665	497	1.355		

	Total	673.699	498			
Online retailers offer user memberships for surfing on the password protected webpages within the website.	Between Groups	.414	1	.414	.363	.547
	Within Groups	567.033	497	1.141		
	Total	567.447	498			
Pictures of products are downloaded quickly.	Between Groups	.472	1	.472	.488	.485
	Within Groups	480.714	497	.967		
	Total	481.186	498			
The search function at the websites is helpful.	Between Groups	.254	1	.254	.541	.462
	Within Groups	233.537	497	.470		
	Total	233.792	498			
The websites allow easy return to the previous display pages.	Between Groups	2.457	1	2.457	2.678	.102
	Within Groups	455.948	497	.917		
	Total	458.405	498			
The websites make it easy to recognise key information.	Between Groups	.083	1	.083	.133	.716
	Within Groups	311.448	497	.627		
	Total	311.531	498			
The attractive colour scheme of online retailing websites facilitates shopping.	Between Groups	.008	1	.008	.008	.930
	Within Groups	488.329	497	.983		
	Total	488.337	498			
The graphics displayed in websites provide ease for ordering product.	Between Groups	.001	1	.001	.002	.968
	Within Groups	400.660	497	.806		
	Total	400.661	498			
Shopping online is an exciting experience.	Between Groups	.457	1	.457	.542	.462
	Within Groups	418.301	497	.842		
	Total	418.758	498			
I can customize my product before ordering.	Between Groups	.002	1	.002	.002	.968
	Within Groups	752.859	497	1.515		
	Total	752.862	498			
I can filter the contents I want to see.	Between Groups	.429	1	.429	.525	.469

	Within Groups	406.625	497	.818		
	Total	407.054	498			

The results of the above table indicate that gender of respondents carries a significant difference in the perception of 'Safety regarding use of debit card and credit card' at $p<0.05$ for $F=7.961$, $p=0.005$. While other items depicted no significant relationship with respect to gender.

Table 4.4.2: **ANOVA results of gender and drivers of online retailing**

Items of drivers of online retailing		Sum of Squares	df	Mean Square	F	Sig.
Online shopping provide wide assortment of products useful in my daily life.	Between Groups	.276	1	.276	.388	.534
	Within Groups	354.786	498	.712		
	Total	355.062	499			
Online shopping helps me to find product information within the shortest time frame.	Between Groups	.253	1	.253	.357	.550
	Within Groups	353.035	498	.709		
	Total	353.288	499			
While shopping on internet I can find some products that are not easily available in physical stores	Between Groups	.019	1	.019	.024	.876
	Within Groups	396.149	498	.795		
	Total	396.168	499			
Online shopping enables me to accomplish shopping more quickly than traditional stores	Between Groups	.073	1	.073	.091	.763
	Within Groups	397.319	498	.798		
	Total	397.392	499			
It was easy for me to learn internet shopping.	Between Groups	.979	1	.979	2.307	.129
	Within Groups	211.299	498	.424		
	Total	212.278	499			
The language used by online retailers is easy to understand.	Between Groups	.761	1	.761	2.537	.112
	Within Groups	149.437	498	.300		
	Total	150.198	499			
Internet shopping websites are easy to use.	Between Groups	2.727	1	2.727	5.634	.018
	Within Groups	241.023	498	.484		

	Total	243.750	499			
Information provided by online retailers help me to purchase product	Between Groups	.071	1	.071	.204	.652
	Within Groups	173.247	498	.348		
	Total	173.318	499			
It is easy to track orders placed online.	Between Groups	.585	1	.585	.408	.523
	Within Groups	713.607	498	1.433		
	Total	714.192	499			
It is easy to modify orders placed online.	Between Groups	.489	1	.489	.316	.574
	Within Groups	768.989	498	1.544		
	Total	769.478	499			
It is easy to cancel orders placed online.	Between Groups	.052	1	.052	.121	.728
	Within Groups	214.898	498	.432		
	Total	214.950	499			
It is easy to replace orders placed online.	Between Groups	.184	1	.184	.197	.657
	Within Groups	464.638	498	.933		
	Total	464.822	499			
I have resources necessary to use online shopping	Between Groups	.276	1	.276	.388	.534
	Within Groups	354.786	498	.712		
	Total	355.062	499			
I have knowledge necessary to use online shopping	Between Groups	.253	1	.253	.357	.550
	Within Groups	353.035	498	.709		
	Total	353.288	499			
Online shopping is compatible with other technologies I use	Between Groups	.019	1	.019	.024	.876
	Within Groups	396.149	498	.795		
	Total	396.168	499			
Shopping online is an exciting experience for me.	Between Groups	.764	1	.764	.800	.372
	Within Groups	475.578	498	.955		
	Total	476.342	499			
Shopping online is fun for me.	Between Groups	.415	1	.415	.286	.593
	Within Groups	722.913	498	1.452		

	Total	723.328	499			
I feel shopping online is enjoyable.	Between Groups	.823	1	.823	.611	.435
	Within Groups	670.927	498	1.347		
	Total	671.750	499			
Online products are reasonably priced	Between Groups	2.355	1	2.355	1.627	.203
	Within Groups	720.797	498	1.447		
	Total	723.152	499			
Online shopping provides me good value for money	Between Groups	1.571	1	1.571	1.345	.247
	Within Groups	581.827	498	1.168		
	Total	583.398	499			
Online discounts and promotions offered are often attractive which provide me value for money.	Between Groups	.823	1	.823	.611	.435
	Within Groups	670.927	498	1.347		
	Total	671.750	499			
People who are important to me think that I should do online shopping	Between Groups	.010	1	.010	.090	.764
	Within Groups	58.012	498	.116		
	Total	58.022	499			
People who influence my behaviour think that I should continue online shopping	Between Groups	.285	1	.285	.394	.531
	Within Groups	359.915	498	.723		
	Total	360.200	499			
People whose opinions I value encourage me to do online shopping	Between Groups	.804	1	.804	1.114	.292
	Within Groups	359.396	498	.722		
	Total	360.200	499			
I prefer to buy through cash on delivery(COD) mode of payment	Between Groups	.071	1	.071	.147	.702
	Within Groups	240.497	498	.483		
	Total	240.568	499			
I plan to pay through COD mode of payment.	Between Groups	.012	1	.012	.073	.787
	Within Groups	84.780	498	.170		
	Total	84.792	499			
COD mode of payment facilitates easy return of defected products	Between Groups	.021	1	.021	.166	.684

	Within Groups	64.427	498	.129		
	Total	64.448	499			
COD give me confidence for future repurchase of products	Between Groups	.004	1	.004	.027	.870
	Within Groups	69.614	498	.140		
	Total	69.617	499			

The results of above table indicate that males and females carry a significant difference in the perception of 'It is easy to use online shopping websites' at $p<0.05$ for $F=5.634$, $p=0.018$. While respondents have no significant difference in other items of drivers of online retailing.

Table 4.4.3: **ANOVA on gender and barriers to online retailing**

Items of barriers to online retailing		Sum of Squares	df	Mean Square	F	Sig.
While online shopping the debit/credit card information may be stolen by others.	Between Groups	.106	1	.106	.080	.778
	Within Groups	663.806	498	1.333		
	Total	663.912	499			
I might get overcharged if I shop online	Between Groups	.348	1	.348	.357	.551
	Within Groups	486.421	498	.977		
	Total	486.770	499			
I can't trust the online company	Between Groups	.225	1	.225	.625	.430
	Within Groups	179.567	498	.361		
	Total	179.792	499			
I am not assured about the size of the product.	Between Groups	.114	1	.114	.133	.716
	Within Groups	426.836	498	.857		
	Total	426.950	499			
I can't judge the performance of product without touching.	Between Groups	.002	1	.002	.003	.957
	Within Groups	277.224	498	.557		
	Total	277.225	499			
Inability to try products before purchase makes me suspicious of its performance.	Between Groups	.085	1	.085	.115	.734
	Within Groups	366.227	498	.735		

	Total	366.312	499			
Online shopping may affect the image of people around me.	Between Groups	.053	1	.053	.080	.778
	Within Groups	332.735	498	.668		
	Total	332.788	499			
Online products may not be recognized by relatives or friends.	Between Groups	1.033	1	1.033	.991	.320
	Within Groups	518.717	498	1.042		
	Total	519.750	499			
Online shopping websites are not secure.	Between Groups	3.091	1	3.091	2.264	.133
	Within Groups	679.717	498	1.365		
	Total	682.808	499			
Posting my personal details online inhibits online shopping.	Between Groups	4.820	1	4.820	5.398	.021
	Within Groups	444.691	498	.893		
	Total	449.511	499			
Online shopping websites donot have adequate security measures.	Between Groups	.277	1	.277	.362	.548
	Within Groups	380.723	498	.765		
	Total	381.000	499			
Online shopping e-mail address may be abused by others.	Between Groups	.737	1	.737	.906	.342
	Within Groups	405.431	498	.814		
	Total	406.168	499			
My phone number may be abused by others.	Between Groups	.831	1	.831	1.033	.310
	Within Groups	400.551	498	.804		
	Total	401.382	499			
My personal information may be disclosed to others.	Between Groups	.451	1	.451	.724	.395
	Within Groups	310.315	498	.623		
	Total	310.766	499			
My bank card may be stolen by others	Between Groups	.482	1	.482	.478	.490

	Within Groups	501.950	498	1.008		
	Total	502.432	499			
Buying a product online can involve a waste of time	Between Groups	.138	1	.138	.154	.695
	Within Groups	443.952	498	.891		
	Total	444.090	499			
Slow internet speed wastes my time (New scale item)	Between Groups	.093	1	.093	.657	.418
	Within Groups	70.457	498	.141		
	Total	70.550	499			
Tiresome browsing through internet leads to wastage in time	Between Groups	.610	1	.610	4.225	.040
	Within Groups	71.902	498	.144		
	Total	72.512	499			
Inapt query handling leads to wastage of time.	Between Groups	.292	1	.292	2.368	.125
	Within Groups	61.340	498	.123		
	Total	61.632	499			

According to the results revealed in Table obtained from SPSS, we infer that males and females carry a significant difference in the perception of 'Tiresome browsing through internet leads to wastage in time' at $p<0.05$ for $F=4.225$, $p=0.040$ and 'Posting my personal details online inhibits online shopping' at $p<0.05$ for $F=5.398$, $p=0.021$. While respondents do not have a significant difference in remaining barriers to online retailing indicating both the groups are having the same perception with respect to barriers.

4.5 Analysis of variance (ANOVA) for age on website functionality, drivers of online retailing and perceived risk.

Problem 2: Do significant differences exist in the perception of age groups 18-30 years, 31-45 years and above 45 years for online retailing.

Hypothesis 7a: There exists a significant difference in the means of different age groups regarding website functionality.

Hypothesis 7b: There exists a significant difference in the means of different age groups regarding drivers of online retailing.

Hypothesis 7a: There exists a significant difference in the means of different age groups regarding perceived risk.

***Table 4.5.1*: ANOVA Results of age and website functionality.**

		Sum of Squares	df	Mean Square	F	Sig.
The websites have adequate security measures.	Between Groups	.918	2	.459	.444	.642
	Within Groups	513.234	496	1.035		
	Total	514.152	498			
I feel safe while using my credit card/ debit card on the websites.	Between Groups	2.758	2	1.379	.961	.383
	Within Groups	711.643	496	1.435		
	Total	714.401	498			
I trust that the websites will not give my personal details to other websites without my permission.	Between Groups	13.046	2	6.523	4.897	.008
	Within Groups	660.654	496	1.332		
	Total	673.699	498			
Online retailers offer user memberships for surfing on the password protected webpages within the website.	Between Groups	.502	2	.251	.219	.803
	Within Groups	566.945	496	1.143		
	Total	567.447	498			
Pictures of products are downloaded quickly.	Between Groups	.916	2	.458	.473	.623
	Within Groups	480.270	496	.968		
	Total	481.186	498			
The search function at the websites is helpful.	Between Groups	.368	2	.184	.391	.676
	Within Groups	233.423	496	.471		
	Total	233.792	498			
The websites allow easy return to the previous display pages.	Between Groups	.229	2	.115	.124	.883
	Within Groups	458.176	496	.924		
	Total	458.405	498			
The websites make it easy to recognise key information.	Between Groups	.590	2	.295	.470	.625

	Within Groups	310.941	496	.627		
	Total	311.531	498			
The attractive colour scheme of online retailing websites facilitate shopping.	Between Groups	.042	2	.021	.021	.979
	Within Groups	488.295	496	.984		
	Total	488.337	498			
The graphics displayed in websites provide ease for ordering product.	Between Groups	1.389	2	.695	.863	.423
	Within Groups	399.272	496	.805		
	Total	400.661	498			
Shopping online is an exciting experience.	Between Groups	2.118	2	1.059	1.261	.284
	Within Groups	416.639	496	.840		
	Total	418.758	498			
I can customize my product before ordering.	Between Groups	20.998	2	10.499	7.115	.001
	Within Groups	731.864	496	1.476		
	Total	752.862	498			
I can filter the contents I want to see.	Between Groups	4.735	2	2.368	2.919	.055
	Within Groups	402.319	496	.811		
	Total	407.054	498			

According to the results revealed in Table 4.5.1 obtained from SPSS, it could be predicted that age groups carry a significant difference in the perception of 'I can customize my product before ordering' at $p<0.01$ for $F=7.115$, $p=0.001$.While respondents do not have a significant difference in remaining website functionality items indicating all the three groups having the same perception with respect to website functionality.

Table 4.5.2: **ANOVA Results of age and drivers to online retailing**

		Sum of Squares	df	Mean Square	F	Sig.
Online shopping provide wide assortment of products useful in my daily life.	Between Groups	.100	2	.050	.070	.932
	Within Groups	354.962	497	.714		
	Total	355.062	499			

Online shopping helps me to find product information within the shortest time frame.	Between Groups	.023	2	.011	.016	.984
	Within Groups	353.265	497	.711		
	Total	353.288	499			
While shopping on internet I can find some products that are not easily available in physical stores	Between Groups	.081	2	.040	.051	.951
	Within Groups	396.087	497	.797		
	Total	396.168	499			
Online shopping enables me to accomplish shopping more quickly than traditional stores	Between Groups	.682	2	.341	.427	.653
	Within Groups	396.710	497	.798		
	Total	397.392	499			
It was easy for me to learn internet shopping.	Between Groups	.360	2	.180	.422	.656
	Within Groups	211.918	497	.426		
	Total	212.278	499			
The language used by online retailers is easy to understand.	Between Groups	.585	2	.292	.971	.379
	Within Groups	149.613	497	.301		
	Total	150.198	499			
Internet shopping websites are easy to use.	Between Groups	.563	2	.281	.575	.563
	Within Groups	243.187	497	.489		
	Total	243.750	499			
Information provided by online retailers help me to purchase product	Between Groups	1.393	2	.696	2.013	.135
	Within Groups	171.925	497	.346		
	Total	173.318	499			
It is easy to track orders placed online.	Between Groups	.030	2	.015	.010	.990
	Within Groups	714.162	497	1.437		
	Total	714.192	499			
It is easy to modify orders placed online.	Between Groups	.611	2	.306	.198	.821
	Within Groups	768.867	497	1.547		
	Total	769.478	499			
It is easy to cancel orders placed online.	Between Groups	.728	2	.364	.845	.430
	Within Groups	214.222	497	.431		
	Total	214.950	499			

It is easy to replace orders placed online.	Between Groups	.993	2	.496	.532	.588
	Within Groups	463.829	497	.933		
	Total	464.822	499			
I have resources necessary to use online shopping	Between Groups	.100	2	.050	.070	.932
	Within Groups	354.962	497	.714		
	Total	355.062	499			
I have knowledge necessary to use online shopping	Between Groups	.023	2	.011	.016	.984
	Within Groups	353.265	497	.711		
	Total	353.288	499			
Online shopping is compatible with other technologies I use	Between Groups	.081	2	.040	.051	.951
	Within Groups	396.087	497	.797		
	Total	396.168	499			
Shopping online is an exciting experience for me.	Between Groups	.076	2	.038	.040	.961
	Within Groups	476.266	497	.958		
	Total	476.342	499			
Shopping online is fun for me.	Between Groups	11.472	2	5.736	4.005	.019
	Within Groups	711.856	497	1.432		
	Total	723.328	499			
I feel shopping online is enjoyable.	Between Groups	4.307	2	2.153	1.604	.202
	Within Groups	667.443	497	1.343		
	Total	671.750	499			
Online products are reasonably priced	Between Groups	1.460	2	.730	.503	.605
	Within Groups	721.692	497	1.452		
	Total	723.152	499			
Online shopping provides me good value for money	Between Groups	.377	2	.189	.161	.852
	Within Groups	583.021	497	1.173		
	Total	583.398	499			
Online discounts and promotions offered are often attractive which provide me value for money.	Between Groups	4.307	2	2.153	1.604	.202
	Within Groups	667.443	497	1.343		
	Total	671.750	499			

People who are important to me think that I should do online shopping	Between Groups	.378	2	.189	1.631	.197
	Within Groups	57.644	497	.116		
	Total	58.022	499			
People who influence my behaviour think that I should continue online shopping	Between Groups	1.742	2	.871	1.208	.300
	Within Groups	358.458	497	.721		
	Total	360.200	499			
People whose opinions I value encourage me to do online shopping	Between Groups	1.534	2	.767	1.063	.346
	Within Groups	358.666	497	.722		
	Total	360.200	499			
I prefer to buy through cash on delivery(COD) mode of payment	Between Groups	.030	2	.015	.031	.969
	Within Groups	240.538	497	.484		
	Total	240.568	499			
I plan to pay through COD mode of payment.	Between Groups	.216	2	.108	.633	.531
	Within Groups	84.576	497	.170		
	Total	84.792	499			
COD mode of payment facilitates easy return of defected products	Between Groups	.046	2	.023	.177	.838
	Within Groups	64.402	497	.130		
	Total	64.448	499			
COD give me confidence for future repurchase of products	Between Groups	.078	2	.039	.279	.757
	Within Groups	69.539	497	.140		
	Total	69.617	499			

According to the results revealed in Table 4.5.2 it can be concluded that age groups carry a significant difference in the perception of 'Shopping online is fun for me' at $p<0.05$ for $F=4.005$, $p=0.019$. All the remaining items did not indicate any significant difference. Therefore, we can conclude that all the three groups having the same perception with respect to drivers to online shopping.

Table 4.5.3: **ANOVA Results of age and barriers to online retailing**

		Sum of Squares	df	Mean Square	F	Sig.
While online shopping the debit/credit card information may be stolen by others.	Between Groups	1.569	2	.785	.589	.555
	Within Groups	662.343	497	1.333		
	Total	663.912	499			
I might get overcharged if I shop online	Between Groups	.480	2	.240	.245	.783
	Within Groups	486.290	497	.978		
	Total	486.770	499			
I can't trust the online company	Between Groups	.918	2	.459	1.276	.280
	Within Groups	178.874	497	.360		
	Total	179.792	499			
I am not assured about the size of the product.	Between Groups	.462	2	.231	.269	.764
	Within Groups	426.488	497	.858		
	Total	426.950	499			
I can't judge the performance of product without touching.	Between Groups	1.284	2	.642	1.156	.315
	Within Groups	275.941	497	.555		
	Total	277.225	499			
Inability to try products before purchase makes me suspicious of its performance.	Between Groups	1.439	2	.719	.980	.376
	Within Groups	364.873	497	.734		
	Total	366.312	499			
Online shopping may affect the image of people around me.	Between Groups	1.220	2	.610	.914	.402
	Within Groups	331.568	497	.667		
	Total	332.788	499			
Online products may not be recognized by relatives or friends.	Between Groups	.147	2	.074	.070	.932
	Within Groups	519.603	497	1.045		
	Total	519.750	499			
Online shopping websites are not secure.	Between Groups	6.475	2	3.237	2.379	.094

	Within Groups	676.333	497	1.361		
	Total	682.808	499			
Posting my personal details online inhibits online shopping.	Between Groups	1.391	2	.695	.771	.463
	Within Groups	448.120	497	.902		
	Total	449.511	499			
Online shopping websites donot have adequate security measures.	Between Groups	1.693	2	.846	1.109	.331
	Within Groups	379.307	497	.763		
	Total	381.000	499			
Online shopping e-mail address may be abused by others.	Between Groups	.103	2	.052	.063	.939
	Within Groups	406.065	497	.817		
	Total	406.168	499			
My phone number may be abused by others.	Between Groups	.075	2	.038	.047	.954
	Within Groups	401.307	497	.807		
	Total	401.382	499			
My personal information may be disclosed to others.	Between Groups	.501	2	.251	.401	.670
	Within Groups	310.265	497	.624		
	Total	310.766	499			
My bank card may be stolen by others	Between Groups	.428	2	.214	.212	.809
	Within Groups	502.004	497	1.010		
	Total	502.432	499			
Buying a product online can involve a waste of time	Between Groups	.265	2	.133	.149	.862
	Within Groups	443.824	497	.893		
	Total	444.090	499			
Slow internet speed wastes my time (New scale item)	Between Groups	.307	2	.153	1.084	.339
	Within Groups	70.243	497	.141		
	Total	70.550	499			
Tiresome browsing through internet leads to wastage in time	Between Groups	.035	2	.017	.119	.888
	Within Groups	72.477	497	.146		

	Total	72.512	499			
Inapt query handling leads to wastage of time.	Between Groups	.009	2	.005	.037	.964
	Within Groups	61.623	497	.124		
	Total	61.632	499			

The results of the above table indicate viz., 18-30 years, 31-45 years and above 45 years donot carry significant differences with regards to barriers to online retailing. Thus, there is consensus with regards to barriers among different age groups.

4.6 Analysis of variance (ANOVA) for education qualification on website functionality, drivers of online retailing and perceived risk.

Problem 3: Do significant differences exist in the perception of undergraduates, graduates and post graduates for online retailing.

Hypothesis 8a: There exists a significant difference in the means of undergraduates, graduates and post graduates regarding website functionality.

Hypothesis 8b: There exists a significant difference in the means of undergraduates, graduates and post graduates regarding drivers of online retailing.

Hypothesis 8c: There exists a significant difference in the means of undergraduates, graduates and post graduates regarding perceived risk.

Table 4.6.1: **ANOVA results of education qualification and website functionality**

		Sum of Squares	df	Mean Square	F	Sig.
The websites have adequate security measures.	Between Groups	3.917	2	1.958	1.904	.150
	Within Groups	510.235	496	1.029		
	Total	514.152	498			
I feel safe while using my credit card/ debit card on the websites.	Between Groups	1.704	2	.852	.593	.553
	Within Groups	712.697	496	1.437		
	Total	714.401	498			
I trust that the websites will not give my personal details to other websites without my permission.	Between Groups	3.679	2	1.839	1.362	.257
	Within Groups	670.021	496	1.351		
	Total	673.699	498			
Online retailers offer user memberships for surfing on the password protected webpages	Between Groups	1.387	2	.693	.608	.545

within the website.	Within Groups	566.060	496	1.141		
	Total	567.447	498			
Pictures of products are downloaded quickly.	Between Groups	12.259	2	6.130	6.484	.002
	Within Groups	468.927	496	.945		
	Total	481.186	498			
The search function at the websites is helpful.	Between Groups	.264	2	.132	.280	.756
	Within Groups	233.528	496	.471		
	Total	233.792	498			
The websites allow easy return to the previous display pages.	Between Groups	1.776	2	.888	.964	.382
	Within Groups	456.629	496	.921		
	Total	458.405	498			
The websites make it easy to recognise key information.	Between Groups	1.221	2	.610	.976	.378
	Within Groups	310.310	496	.626		
	Total	311.531	498			
The attractive colour scheme of online retailing websites facilitates shopping.	Between Groups	15.017	2	7.508	7.868	.000
	Within Groups	473.320	496	.954		
	Total	488.337	498			
The graphics displayed in websites provide ease for ordering product.	Between Groups	16.756	2	8.378	10.825	.000
	Within Groups	383.905	496	.774		
	Total	400.661	498			
Shopping online is an exciting experience.	Between Groups	11.645	2	5.823	7.094	.001
	Within Groups	407.112	496	.821		
	Total	418.758	498			
I can customize my product before ordering.	Between Groups	.446	2	.223	.147	.863
	Within Groups	752.416	496	1.517		
	Total	752.862	498	F		
I can filter the contents I want to see.	Between Groups	6.758	2	3.379	4.187	.016
	Within Groups	400.296	496	.807		
	Total	407.054	498			

The results obtained exhibit that there exists a significant difference in perception of means of undergraduates, graduated and postgraduates in items 'Pictures of products are downloaded quickly' at $p<0.05$ for $F=6.484$, $p=0.002$, 'Shopping online is an exciting experience' at $p<0.05$ for $F=7.094$, $p=0.001$ and 'I can filter the contents I want to see at $p<0.05$ for $F=4.187$, $p=0.016$. Significant differences also existed in items 'The attractive colour scheme of online retailing websites facilitates shopping' at $p \leq 0.000$ for $F=7.868$ and 'the graphics displayed in websites provide ease for ordering product' at $p \leq 0.000$ for $F=7.868$. Remaining items did not indicate any significant difference.

Table 4.6.2: **ANOVA results of education qualification and drivers of online retailing**

		Sum of Squares	df	Mean Square	F	Sig.
Online shopping provide wide assortment of products useful in my daily life.	Between Groups	1.492	2	.746	1.049	.351
	Within Groups	353.570	497	.711		
	Total	355.062	499			
Online shopping helps me to find product information within the shortest time frame.	Between Groups	2.406	2	1.203	1.704	.183
	Within Groups	350.882	497	.706		
	Total	353.288	499			
While shopping on internet I can find some products that are not easily available in physical stores	Between Groups	2.508	2	1.254	1.583	.206
	Within Groups	393.660	497	.792		
	Total	396.168	499			
Online shopping enables me to accomplish shopping more quickly than traditional stores	Between Groups	1.878	2	.939	1.180	.308
	Within Groups	395.514	497	.796		
	Total	397.392	499			
It was easy for me to learn internet shopping.	Between Groups	.396	2	.198	.464	.629
	Within Groups	211.882	497	.426		
	Total	212.278	499			
The language used by online retailers is easy to understand.	Between Groups	1.698	2	.849	2.841	.059
	Within Groups	148.500	497	.299		
	Total	150.198	499			
Internet shopping websites are easy to use.	Between Groups	1.790	2	.895	1.839	.160

	Within Groups	241.960	497	.487		
	Total	243.750	499			
Information provided by online retailers help me to purchase product	Between Groups	.439	2	.219	.631	.532
	Within Groups	172.879	497	.348		
	Total	173.318	499			
It is easy to track orders placed online.	Between Groups	2.726	2	1.363	.952	.387
	Within Groups	711.466	497	1.432		
	Total	714.192	499			
It is easy to modify orders placed online.	Between Groups	2.413	2	1.207	.782	.458
	Within Groups	767.065	497	1.543		
	Total	769.478	499			
It is easy to cancel orders placed online.	Between Groups	2.554	2	1.277	2.988	.051
	Within Groups	212.396	497	.427		
	Total	214.950	499			
It is easy to replace orders placed online.	Between Groups	2.506	2	1.253	1.347	.261
	Within Groups	462.316	497	.930		
	Total	464.822	499			
I have resources necessary to use online shopping	Between Groups	1.492	2	.746	1.049	.351
	Within Groups	353.570	497	.711		
	Total	355.062	499			
I have knowledge necessary to use online shopping	Between Groups	2.406	2	1.203	1.704	.183
	Within Groups	350.882	497	.706		
	Total	353.288	499			
Online shopping is compatible with other technologies I use	Between Groups	2.508	2	1.254	1.583	.206
	Within Groups	393.660	497	.792		
	Total	396.168	499			
Shopping online is an exciting experience for me.	Between Groups	2.087	2	1.044	1.094	.336
	Within Groups	474.255	497	.954		
	Total	476.342	499			
Shopping online is fun for me.	Between Groups	.171	2	.086	.059	.943

	Within Groups	723.157	497	1.455		
	Total	723.328	499			
I feel shopping online is enjoyable.	Between Groups	2.164	2	1.082	.803	.448
	Within Groups	669.586	497	1.347		
	Total	671.750	499			
Online products are reasonably priced	Between Groups	1.925	2	.962	.663	.516
	Within Groups	721.227	497	1.451		
	Total	723.152	499			
Online shopping provides me good value for money	Between Groups	4.272	2	2.136	1.833	.161
	Within Groups	579.126	497	1.165		
	Total	583.398	499			
Online discounts and promotions offered are often attractive which provide me value for money.	Between Groups	2.164	2	1.082	.803	.448
	Within Groups	669.586	497	1.347		
	Total	671.750	499			
People who are important to me think that I should do online shopping	Between Groups	.022	2	.011	.093	.911
	Within Groups	58.000	497	.117		
	Total	58.022	499			
People who influence my behaviour think that I should continue online shopping	Between Groups	6.816	2	3.408	4.793	.009
	Within Groups	353.384	497	.711		
	Total	360.200	499			
People whose opinions I value encourage me to do online shopping	Between Groups	4.785	2	2.392	3.345	.036
	Within Groups	355.415	497	.715		
	Total	360.200	499			
I prefer to buy through cash on delivery(COD) mode of payment	Between Groups	.902	2	.451	.936	.393
	Within Groups	239.666	497	.482		
	Total	240.568	499			
I plan to pay through COD mode of payment.	Between Groups	.063	2	.032	.185	.831
	Within Groups	84.729	497	.170		
	Total	84.792	499			

COD mode of payment facilitates easy return of defected products	Between Groups	.295	2	.148	1.144	.319
	Within Groups	64.153	497	.129		
	Total	64.448	499			
COD give me confidence for future repurchase of products	Between Groups	.386	2	.193	1.386	.251
	Within Groups	69.231	497	.139		

Significant differences in perception of means of undergraduates, graduated and postgraduates have been observed in above table in items 'People who influence my behaviour think that I should continue online shopping' (F=4.793, p=0.009) and 'People whose opinions I value encourage me to do online shopping' (F=3.345, p=0.031) while remaining items did not showed significant difference indicating consensus in the group with respect to drivers of online shopping.

Table 4.6.3: ANOVA results of education qualification and barriers to online retailing

		Sum of Squares	df	Mean Square	F	Sig.
While online shopping the debit/credit card information may be stolen by others.	Between Groups	1.291	2	.645	.484	.617
	Within Groups	662.621	497	1.333		
	Total	663.912	499			
I might get overcharged if I shop online	Between Groups	.588	2	.294	.301	.741
	Within Groups	486.182	497	.978		
	Total	486.770	499			
I can't trust the online company	Between Groups	.834	2	.417	1.158	.315
	Within Groups	178.958	497	.360		
	Total	179.792	499			
I am not assured about the size of the product.	Between Groups	1.491	2	.745	.871	.419
	Within Groups	425.459	497	.856		
	Total	426.950	499			
I can't judge the performance of product without touching.	Between Groups	1.278	2	.639	1.151	.317
	Within Groups	275.947	497	.555		

	Total	277.225	499			
Inability to try products before purchase makes me suspicious of its performance.	Between Groups	1.604	2	.802	1.093	.336
	Within Groups	364.708	497	.734		
	Total	366.312	499			
Online shopping may affect the image of people around me.	Between Groups	1.803	2	.902	1.354	.259
	Within Groups	330.985	497	.666		
	Total	332.788	499			
Online products may not be recognized by relatives or friends.	Between Groups	6.709	2	3.355	3.250	.040
	Within Groups	513.041	497	1.032		
	Total	519.750	499			
Online shopping websites are not secure.	Between Groups	3.496	2	1.748	1.279	.279
	Within Groups	679.312	497	1.367		
	Total	682.808	499			
Posting my personal details online inhibits online shopping.	Between Groups	3.921	2	1.960	2.186	.113
	Within Groups	445.590	497	.897		
	Total	449.511	499			
Online shopping websites donot have adequate security measures.	Between Groups	1.304	2	.652	.853	.427
	Within Groups	379.696	497	.764		
	Total	381.000	499			
Online shopping e-mail address may be abused by others.	Between Groups	3.133	2	1.566	1.932	.146
	Within Groups	403.035	497	.811		
	Total	406.168	499			
My phone number may be abused by others.	Between Groups	.229	2	.115	.142	.868
	Within Groups	401.153	497	.807		
	Total	401.382	499			
My personal information may be disclosed to others.	Between Groups	1.178	2	.589	.945	.389

	Within Groups	309.589	497	.623		
	Total	310.766	499			
My bank card may be stolen by others	Between Groups	2.712	2	1.356	1.348	.261
	Within Groups	499.720	497	1.005		
	Total	502.432	499			
Buying a product online can involve a waste of time	Between Groups	1.113	2	.557	.624	.536
	Within Groups	442.976	497	.891		
	Total	444.090	499			
Slow internet speed wastes my time (New scale item)	Between Groups	.604	2	.302	2.147	.118
	Within Groups	69.946	497	.141		
	Total	70.550	499			
Tiresome browsing through internet leads to wastage in time	Between Groups	.217	2	.108	.745	.475
	Within Groups	72.295	497	.145		
	Total	72.512	499			
Inapt query handling leads to wastage of time.	Between Groups	.026	2	.013	.105	.901
	Within Groups	61.606	497	.124		
	Total	61.632	499			

The results obtained indicate that there is no significant difference in perception of means of undergraduates, graduated and postgraduates with respect to items of barriers to online retailing except 'online products may not be recognized by relatives or friends' at $p<0.05$ for $F=3.250$, $p=0.040$.

4.7 Analysis of variance (ANOVA) for income on website functionality, drivers of online retailing and perceived risk.

Problem 3: Do significant differences exist in the perception respondents of high, medium and low income group with respect to online retailing.

Hypothesis 8a: There exists a significant difference in the means of high, medium and low income groups regarding website functionality.

Hypothesis 8b: There exists a significant difference in the means of high, medium and low income groups regarding drivers of online retailing.

Hypothesis 8c: There exists a significant difference in the means of high, medium and low income groups regarding barriers to online retailing.

Table 4.7.1: **ANOVA results of income and website functionality**

		Sum of Squares	df	Mean Square	F	Sig.
The websites have adequate security measures.	Between Groups	5.574	2	2.787	2.718	.067
	Within Groups	508.578	496	1.025		
	Total	514.152	498			
I feel safe while using my credit card/ debit card on the websites.	Between Groups	4.289	2	2.144	1.498	.225
	Within Groups	710.112	496	1.432		
	Total	714.401	498			
I trust that the websites will not give my personal details to other websites without my permission.	Between Groups	1.466	2	.733	.541	.583
	Within Groups	672.234	496	1.355		
	Total	673.699	498			
Online retailers offer user memberships for surfing on the password protected webpages within the website.	Between Groups	.107	2	.053	.047	.954
	Within Groups	567.340	496	1.144		
	Total	567.447	498			
Pictures of products are downloaded quickly.	Between Groups	.344	2	.172	.177	.838
	Within Groups	480.842	496	.969		
	Total	481.186	498			
The search function at the websites is helpful.	Between Groups	.663	2	.332	.706	.494
	Within Groups	233.128	496	.470		
	Total	233.792	498			
The websites allow easy return to the previous display pages.	Between Groups	.967	2	.484	.524	.592
	Within Groups	457.438	496	.922		
	Total	458.405	498			
The websites make it easy to recognise key information.	Between Groups	1.793	2	.897	1.436	.239

	Within Groups	309.738	496	.624		
	Total	311.531	498			
The attractive colour scheme of online retailing websites facilitate shopping.	Between Groups	3.692	2	1.846	1.889	.152
	Within Groups	484.644	496	.977		
	Total	488.337	498			
The graphics displayed in websites provide ease for ordering product.	Between Groups	.843	2	.421	.523	.593
	Within Groups	399.819	496	.806		
	Total	400.661	498			
Shopping online is an exciting experience.	Between Groups	2.332	2	1.166	1.389	.250
	Within Groups	416.426	496	.840		
	Total	418.758	498			
I can customize my product before ordering.	Between Groups	15.817	2	7.909	5.322	.005
	Within Groups	737.045	496	1.486		
	Total	752.862	498			
I can filter the contents I want to see.	Between Groups	.985	2	.492	.601	.548
	Within Groups	406.069	496	.819		
	Total	407.054	498			

The results of above table show that there are no significant differences in perception of means of low, middle and high income groups in items of website functionality except 'I can customize my product before ordering' at $p<0.05$ for $F=5.322$, $p=0.005$.

Table 4.7.2: **ANOVA results of income and drivers to online retailing**

		Sum of Squares	df	Mean Square	F	Sig.
Online shopping provide wide assortment of products useful in my daily life.	Between Groups	1.167	2	.584	.820	.441
	Within Groups	353.895	497	.712		
	Total	355.062	499			
Online shopping helps me to find product information within the shortest time frame.	Between Groups	.772	2	.386	.544	.581
	Within Groups	352.516	497	.709		
	Total	353.288	499			

While shopping on internet I can find some products that are not easily available in physical stores	Between Groups	3.804	2	1.902	2.409	.091
	Within Groups	392.364	497	.789		
	Total	396.168	499			
Online shopping enables me to accomplish shopping more quickly than traditional stores	Between Groups	1.237	2	.619	.776	.461
	Within Groups	396.155	497	.797		
	Total	397.392	499			
It was easy for me to learn internet shopping.	Between Groups	1.516	2	.758	1.326	.267
	Within Groups	284.251	497	.572		
	Total	285.767	499			
The language used by online retailers is easy to understand.	Between Groups	.433	2	.217	.508	.602
	Within Groups	211.845	497	.426		
	Total	212.278	499			
Internet shopping websites are easy to use.	Between Groups	1.448	2	.724	2.418	.090
	Within Groups	148.750	497	.299		
	Total	150.198	499			
Information provided by online retailers help me to purchase product	Between Groups	1.117	2	.559	1.144	.319
	Within Groups	242.633	497	.488		
	Total	243.750	499			
It is easy to track orders placed online.	Between Groups	9.394	2	4.697	3.312	.951
	Within Groups	704.798	497	1.418		
	Total	714.192	499			
It is easy to modify orders placed online.	Between Groups	1.397	2	.698	.452	.037
	Within Groups	768.081	497	1.545		
	Total	769.478	499			
It is easy to cancel orders placed online.	Between Groups	.464	2	.232	.537	.637
	Within Groups	214.486	497	.432		
	Total	214.950	499			
It is easy to replace orders placed online.	Between Groups	.772	2	.386	.414	.585
	Within Groups	464.050	497	.934		
	Total	464.822	499			

I have resources necessary to use online shopping	Between Groups	1.167	2	.584	.820	.236
	Within Groups	353.895	497	.712		
	Total	355.062	499			
I have knowledge necessary to use online shopping	Between Groups	.772	2	.386	.544	.441
	Within Groups	352.516	497	.709		
	Total	353.288	499			
Online shopping is compatible with other technologies I use	Between Groups	3.804	2	1.902	2.409	.581
	Within Groups	392.364	497	.789		
	Total	396.168	499			
Shopping online is an exciting experience for me.	Between Groups	.594	2	.297	.310	.274
	Within Groups	475.748	497	.957		
	Total	476.342	499			
Shopping online is fun for me.	Between Groups	.251	2	.125	.086	.733
	Within Groups	723.077	497	1.455		
	Total	723.328	499			
I feel shopping online is enjoyable.	Between Groups	.031	2	.016	.012	.917
	Within Groups	671.719	497	1.352		
	Total	671.750	499			
Online products are reasonably priced	Between Groups	6.436	2	3.218	2.232	.956
	Within Groups	716.716	497	1.442		
	Total	723.152	499			
Online shopping provides me good value for money	Between Groups	7.533	2	3.766	3.251	.108
	Within Groups	575.865	497	1.159		
	Total	583.398	499			
Online discounts and promotions offered are often attractive which provide me value for money.	Between Groups	.031	2	.016	.012	.040
	Within Groups	671.719	497	1.352		
	Total	671.750	499			
People who are important to me think that I should do online shopping	Between Groups	.262	2	.131	1.127	.304
	Within Groups	57.760	497	.116		
	Total	58.022	499			

People who influence my behaviour think that I should continue online shopping	Between Groups	1.333	2	.666	.923	.325
	Within Groups	358.867	497	.722		
	Total	360.200	499			
People whose opinions I value encourage me to do online shopping	Between Groups	.198	2	.099	.137	.398
	Within Groups	360.002	497	.724		
	Total	360.200	499			
I prefer to buy through cash on delivery(COD) mode of payment	Between Groups	.180	2	.090	.187	.056
	Within Groups	240.388	497	.484		
	Total	240.568	499			
I plan to pay through COD mode of payment.	Between Groups	.628	2	.314	1.855	.830
	Within Groups	84.164	497	.169		
	Total	84.792	499			
COD mode of payment facilitates easy return of defected products	Between Groups	.532	2	.266	2.069	.157
	Within Groups	63.916	497	.129		
	Total	64.448	499			
COD give me confidence for future repurchase of products	Between Groups	.193	2	.097	.692	.127
	Within Groups	69.424	497	.140		
	Total	69.617	499			

The results of above table show that there are insignificant differences in perception of means of low, middle and high income groups except items 'Online discounts and promotions offered are often attractive which provide me value for money' (F=0.012, p=0.040) and 'It is easy to modify orders placed online' (F=0.452, p=0.037).

Table 4.7.3: **ANOVA results of income and barriers to online retailing**

		Sum of Squares	df	Mean Square	F	Sig.
While online shopping the debit/credit card information may be stolen by others.	Between Groups	.002	2	.001	.001	.999
	Within Groups	663.910	497	1.336		
	Total	663.912	499			
I might get overcharged if I shop online	Between Groups	.098	2	.049	.050	.951

	Within Groups	486.671	497	.979		
	Total	486.770	499			
I can’t trust the online company	Between Groups	1.336	2	.668	1.861	.157
	Within Groups	178.456	497	.359		
	Total	179.792	499			
I am not assured about the size of the product.	Between Groups	10.624	2	5.312	6.342	.002
	Within Groups	416.326	497	.838		
	Total	426.950	499			
I can't judge the performance of product without touching.	Between Groups	2.247	2	1.124	2.031	.132
	Within Groups	274.978	497	.553		
	Total	277.225	499			
Inability to try products before purchase makes me suspicious of its performance.	Between Groups	.848	2	.424	.576	.562
	Within Groups	365.464	497	.735		
	Total	366.312	499			
Online shopping may affect the image of people around me.	Between Groups	.686	2	.343	.513	.599
	Within Groups	332.102	497	.668		
	Total	332.788	499			
Online products may not be recognized by relatives or friends.	Between Groups	4.663	2	2.331	2.249	.107
	Within Groups	515.087	497	1.036		
	Total	519.750	499			
Online shopping websites are not secure.	Between Groups	1.219	2	.610	.444	.641
	Within Groups	681.589	497	1.371		
	Total	682.808	499			
Posting my personal details online inhibits online shopping.	Between Groups	1.974	2	.987	1.096	.335
	Within Groups	447.537	497	.900		
	Total	449.511	499			

Online shopping websites donot have adequate security measures.	Between Groups	2.950	2	1.475	1.939	.145
	Within Groups	378.050	497	.761		
	Total	381.000	499			
Online shopping e-mail address may be abused by others.	Between Groups	6.079	2	3.040	3.776	.024
	Within Groups	400.089	497	.805		
	Total	406.168	499			
My phone number may be abused by others.	Between Groups	3.467	2	1.733	2.165	.116
	Within Groups	397.915	497	.801		
	Total	401.382	499			
My personal information may be disclosed to others.	Between Groups	3.574	2	1.787	2.891	.056
	Within Groups	307.193	497	.618		
	Total	310.766	499			
My bank card may be stolen by others	Between Groups	2.440	2	1.220	1.213	.298
	Within Groups	499.992	497	1.006		
	Total	502.432	499			
Buying a product online can involve a waste of time	Between Groups	1.595	2	.797	.896	.409
	Within Groups	442.495	497	.890		
	Total	444.090	499			
Slow internet speed wastes my time	Between Groups	.651	2	.325	2.313	.100
	Within Groups	69.899	497	.141		
	Total	70.550	499			
Tiresome browsing through internet leads to wastage in time	Between Groups	.983	2	.491	3.415	.034
	Within Groups	71.529	497	.144		
	Total	72.512	499			
Inapt query handling leads to wastage of time.	Between Groups	1.004	2	.502	4.115	.017
	Within Groups	60.628	497	.122		

	Total	61.632	499			

The results of above table show that there are significant differences in perception of means of low, middle and high income groups in items 'I am not assured about the size of the product' (F=6.432, p=0.002), 'Online shopping e-mail address may be abused by others' (F= 3.776, p=0.002), 'Tiresome browsing through internet leads to wastage in time' (F=3.415, p=0.034) and 'Inapt query handling leads to wastage of time' (F=4.115, p=0.017).

4.8 Independent t-test for comparing perception of gender on customer satisfaction

In order to compare perception of gender on customer satisfaction towards online retailing, an independent samples t-test was run. Table 4.8.1 provides useful descriptive statistics for two groups that were compared including the mean and standard deviation.

***Table 4.8.1*: Group statistics**

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Customer satisfaction	Males	292	3.9503	.61036	.03572
	Females	208	3.8558	.57949	.04018

According to the results obtained from SPSS as shown in Table 4.8.2, we can summarize that males and females do not have a significant difference in perception of customer satisfaction because the value in the "**Sig. (2-tailed)**" row is more than 0.05. Males had slightly more mean than females. These results indicate that male online shoppers had statistically higher customer satisfaction t (498) =1.744 at equal variances and t (460) = 1.759, p>0.05. Thus, it could be assumed that the group is homogenous about customer satisfaction towards online shopping.

Table 4.8.2: **Independent Samples t-Test Table**

			Customer Satisfaction	
			Equal variances assumed	**Equal variances not assumed**
Levene's test for equality of variances	F		0.171	
	Sig.		0.679	
t-test for Equality of Means	T		1.744	1.759
	df		498	460
	Sig. (2-tailed)		0.082	0.079
	Mean difference		0.0945	0.0945
	Std. error difference		0.0542	0.0537
	95 % confidence interval of the difference	Lower	-0.01198	-0.01108
		Upper	0.20113	0.20022

4.9 Concluding remarks

This chapter analyzed the data collected from online shoppers as well as online retailers. The chapter analyses features of website functionality, drivers of online retailing as well as hindrance factors of online retailing. The chapter also focuses on key dimensions of supply chain management of online retailers in India. The chapter includes model development and validating the model. The chapter concludes by analyzing the influence of demographic factors on website functionality, drivers to online retailing and hindrance factors of online retailing.

CHAPTER V
CONCLUSION

Customer satisfaction is a key dimension of marketers to increase their performance and achieve an edge over competitors. Only those business houses that consider customer satisfaction a key element of their business strategy succeed in this present competitive era. The study summarises the role of website functionality and drivers to online retailing in increasing customer satisfaction thereby improving the performance .of online retailers in North India. Online retailers need to be competitive enough to survive and focussing on dimensions of Supply Chain Management will not only help to reduce the cost but also reach the customers in most efficient and effective manner there by fulfilling the market demand. The implementation of effective SCM is an exigent task as it requires selection of right suppliers, cooperation from suppliers and partners, providing the right information at right time to right person as well as technical infrastructure. A lot of exertion is required on the part of e-retailers in India to convince the customers to purchase and repurchase the products online. Customer satisfaction not only helps to identify unhappy customers but also assists in increasing revenue. It also helps the retailers to attract new customers by being salient indicator of differentiation.

Therefore, the study was conducted to develop a comprehensive model circumventing online retailing under Indian condition. The present research empirically analyzes website functionality, drivers of online retailing besides perceived risk which in-turn discourage online retailing. This research also studies important drivers of SCM which consequently increases the performance of online retailers. This research confirms the predictors of UTAUT2 in online retailing context. Furthermore, it also broadens the scale of drivers by including and validating ease of ordering and COD mode of payment.

The chapter deliberates on the experiences and observations that were gathered in the research, and reports the results of the study undertaken. Section 5.1 provides the major findings of the study, section 5.2 covers responses to the research questions by revisiting the objectives, and section 5.3 provides the implications of the study for practitioners, industry and academics. The limitations are reported in section 5.4 and the chapter concludes with suggestions for future study.

5.1 Major findings of the study

The important findings of the current research are highlighted in this section.

- The research model identified features of website functionality and empirically analyzed their relationship with customer satisfaction. Exploratory factor analysis was performed on 20 items of construct website functionality. For Exploratory factor analysis (EFA), the Principal Component Analysis (PCA) has been used covering varimax rotation with Eigen value greater than 1. For further confirmatory factor analysis (CFA) items with loadings greater than 0.5 were considered. The KMO (Kaiser-Mayer-Olkin) value of 0.843 at significance level of 0.000 was attained using Bartlett's Sphericity Test. This recommended that the inter-correlation matrix contained adequate common variance which helps to make factor analysis constructive. EFA divided the items into five factors namely security and privacy, navigation characteristics, website design, customization and consistency.
- CFA followed EFA and items with low factor loadings were removed. As a result, 12 items out of 20 were retained for further analysis. As a consequence, the consistency aspect items were removed. Further, this leads to exclusion of one item from website design (WD4) and one from NAV5 of navigation. As a result it was confirmed through CFA, that all the variables included had acceptable factor loadings.
- The examination through structural model revealed security and privacy and navigation characteristics as significant predictors of website functionality. Further, website design and customization also emerged as significant predictors. These findings indicated that that website functionality is a multi dimensional construct and reiterate these findings of Tandon *et al.,* (2016). The results of the studies reported by Nair, (2009), Prasad and Arysari, (2009), Gehrt *et al.,* (2012) and Guo *et al.,* (2012) also lend support to the findings of the present study. While consumers may be benefitted from online purchases but concerns about privacy and security are challenging issues demanding attention of online retailers. Navigation too emerged as an important factor for online transactions thereby leading to increased usability. This is supported by previous reported studies (Roy *et al.,* 2001; Calisir *et al.,* 2009). This further specifies that it is imperative for online retailers to ensure online security as a must to nullify the concerns about defective and poor quality products.
- Customization and navigation turned up as significant factors of construct website functionality. These have been corroborated by (Calisir *et al.,* 2010; Lee and Kozer,

2012). It further indicates that customers intend to locate information about products by means of graphics, hyperlinks and sequences and layout of websites (Tandon *et al.,* 2016). As revealed through the present research, inefficiently planned web pages, repetitious information, tiresome navigation, intricate language and exasperating check-out procedures contribute towards discarding online shopping.

- In order to understand important dimension of Supply Chain Management of online retailers, Confirmatory Factor Analysis was performed. Strategic supplier relationships, CRM, Information sharing and delivery dependability emerged key drivers of SCM of e-retailers.
- Moving ahead, as UTAUT2 is acknowledged as a widely accepted and validated framework to envisage technology adoption and therefore, it has been applied in present research as well. This research adopted and adapted the major drivers from UTUAT2 and analyzed them from online shopping perspective. These are: i) performance expectancy, ii) effort expectancy, iii) facilitating conditions, iv) social influence, v) hedonic motivation, vi) price value and vii) habit. These drivers have been supplemented with two new indicators namely ease of ordering and COD to validate their significance in developing countries.
- Items of construct Habit (HAB1, HAB2 and HAB3) were removed due to poor factor loadings. The performance expectancy and effort expectancy emerged as significant drivers and it is consistent with findings of earlier research (Lian and Yen, 2014; Sareen and Jain, 2014; Yaprakli *et al.,* 2013; Tandon *et al.,* 2016).
- The social influence relationship emerged significant and were cognizant with findings of Venkatesh *et al.,* (2012); Musleh *et al.,* (2015) and Hassan *et al.,* (2015). However, the results were different from those of Im *et al.,* (2011) and Dharmawirja and Smith (2012). This reflects that citizens of developing countries like India give due attention to the advice from their colleagues, friends and peers whom they eye as opinion leaders.
- The findings also confirmed facilitating conditions a significant driver of online shopping. This has been supported by Zhou *et al.,* (2010), yet there are many others namely Im *et al.,* (2011) and Sareen and Jain (2014) who contradict it. Price value didn't emerge as significant predictor. Thus, price saving is not a significant motivator of online purchase. Baptista and Oliveira (2015) also supported this view, and Venkatesh *et al.,* (2012) contradicted it.

- The study expanded the model by adding two more drivers of online shopping namely COD and ease of ordering. An important contribution of this research is empirical substantiation of COD as a construct with UTAUT2. COD mode of payment emerged a significant driver of online retailing. It specifies that COD mode of payment is duly important in increasing confidence in online retailing. In view of the fact that, COD is a favoured payment mode in emerging countries like India therefore, an attempt from e-retailers is entailed to widen its periphery covering utmost pincodes in country.
- Similarly, ease of ordering emerged as a significant driver which is in sync with the previous study of Tandon *et al.,* (2016). This finding reflects upon the fact that ease of ordering has its own significance for online customers. If the procedure for placing an order is complex and complicated and the consumers face difficulty in tracing the order, furthermore replacing and cancelling orders is more cumbersome, the customers in all possibility have no other option but to exit the website. A customers could be ensured a rejuvenating experience through virtual tours, better directives regarding payment and by augmenting information quality.
- Empirical findings through path analysis suggested that there exists a significant positive relation amongst the drivers of online retailing and customer satisfaction.
- Moving a step further, this study identified the facets of perceived risk as barriers to online retailing. The impact of perceived risk was also analyzed on customer satisfaction. The main dimensions of perceived risks were in the form of performance, financial, social, security, privacy and time risks.
- The study confirms financial risk as an important barrier to online retailing. It includes apprehension of overcharging, uneasiness of money loss along with disclosure of debit and credit card information. This finding is compatible with the findings of Masoud (2013), Tandon *et al.,* (2016) and Ueltschy *et al.,* (2004) where financial risk emerged as a major deterrent to online shopping.
- Product performance risk was also an important risk. As customers cannot touch and judge the quality they desist shopping online. Product performance factor| too emerged as a decisive barrier as indicated in previous studies like Masoud (2013), Kim and Forsythe (2010) and Tandon *et al.,* (2015).
- Social risk and privacy risk also emerged as significant barriers. Findings of Featherman and Pavlou (2003) and Thakur and Srivastava (2015) lend support to it. Lack of individual contact and interaction with sales executive, privacy concerns and

social contact dampen a person's spirit to shop online and act as a deterrent for shopping online.

- Notably, security risk had no significant relation with perceived risk possibly due to COD mode of payment which has significantly reduced the apprehensions among Indians about possible thefts related through credit/debit card details. This issue has been given due attention by online retailers by posting necessary guidelines about security and privacy policy on their websites.
- Path analysis confirmed significant negative relationship of perceived risks as barriers to online retailing with customer satisfaction.
- ANOVA was performed for analyzing the difference in means of males and females regarding website functionality, drivers to online retailing and perceived risks as barriers to online retailing. The results highlight that no significant difference was found in the group except 'Safety regarding use of debit card and credit card' at $p<0.05$ for $F=7.961$, $p=0.005$, Tiresome browsing through internet leads to wastage in time' at $p<0.05$ for $F=4.225$, $p=0.040$ and 'Posting my personal details online inhibits online shopping' at $p<0.05$ for $F=5.398$, $p=0.021$. This indicates that there is agreement in the group regarding website functionality, drivers to online retailing and barriers to online retailing.
- ANOVA was also performed for analyzing the difference in the means of different age groups regarding website functionality, drivers to online retailing and barriers to online retailing. According to the results revealed from SPSS, it could be concluded that age groups carry a significant difference in the perception of 'I can customize my product before ordering' at $p<0.01$ for $F=7.115$, $p=0.001$ and 'Shopping online is fun for me' at $p<0.05$ for $F=4.005$, $p=0.019$. This indicates that there is agreement in the group regarding website functionality, drivers to online retailing and barriers to online retailing.
- ANOVA results highlight a significant difference on the basis of education for four items of website functionality, two items of drivers of online retailing and one item of barriers to online retailing.
- The results of the income analysis are clearly indicative of the fact absence of significant differences on the basis of income, viz. for high, medium and low income except for 'I can customize my product before ordering' at $p<0.05$ for $F=5.322$, $p=0.005$, 'Online discounts and promotions offered are often attractive which provide

me value for money' (F=0.012, p=0.040), 'It is easy to modify orders placed online' (F=0.452, p=0.037), 'I am not assured about the size of the product' (F=6.432, p=0.002), 'Online shopping e-mail address may be abused by others' (F= 3.776, p=0.002), 'Tiresome browsing through internet leads to wastage in time' (F=3.415, p=0.034) and 'Inapt query handling leads to wastage of time' (F=4.115, p=0.017).

- An independent t-test was used to examine whether there existed any differences regarding customer satisfaction among males and females. Results of t-test indicate that males and females do not have a significant difference in perception of customer satisfaction as p-value is ≥0.05. Thus, it could be assumed that the group is homogenous about customer satisfaction towards online shopping.

5.2 Revising the objectives

It is critical to understand whether the study is able to fulfil the objectives for which it was conducted.

The first objective of the present research was:

*O1: To identify features of online retailing websites influencing performance of online retailers in North India***.**

Review of literature revealed that website functionality is a multi-dimensional construct comprising of security and privacy, navigation characteristics, customization, website design and consistency. For designing a model and to test the hypotheses formulated, SEM using AMOS 20 was employed. Table 5.1 summarizes the results of the hypotheses tested for this part of research.

Table 5.1: ***Hypotheses testing of Website functionality***

	Hypotheses	**Result**
****H1(a)***	***Website functionality is a multidimensional construct significantly predicted by security and privacy, website design, navigational characteristics, customization and consistency feature.***	**Partially accept**
****H2(b)***	***There is a significant positive association between website functionality and customer satisfaction.***	**Accept**

Thus, it was inferred that website functionality is a multi dimensional construct consisting of security and privacy, navigation characteristics, website design and customization feature. Performance of online retailers in this study has been examined through customer satisfaction. Further, these features are positively related to customer satisfaction towards online shopping. Focusing on these factors would improve the performance of online retailers in North India.

The second objective of the present research was:

O2: To identify the key drivers of SCM in selected online retailers in North India.

For the analysis of drivers of SCM, they were categorized into Strategic supplier relationship, delivery dependability, CRM and information sharing. SEM with AMOS 20 was employed to test the hypotheses and for designing of model. The results of the hypotheses tested for this part of research are shown through Table 5.2.

Table 5.2: ***Hypotheses testing of drivers of SCM***

	Hypotheses	**Result**
H2(a)	***Strategic supplier relationship, delivery dependability, CRM and information sharing are the drivers SCM of online retailers*.**	**Accept**
H2(b)	***There is a significant positive association between drivers of SCM and performance of online retailers.***	**Accept**

Thus, it was conclude that strategic supplier relationship, delivery dependability, CRM and information sharing are the drivers of Supply Chain Management.

The third objective of the present result was:

O3: To determine factors influencing customer satisfaction with respect to online retailing.

To determine the factors of customer satisfaction with respect to online retailing, constructs of UTAUT2 were chosen. UTAUT and UTAUT2 have been used extensively in M-commerce but very few studies have empirically examinedUTAUT2 in online retailing context. The drivers to online retailing considered are: i) performance expectancy, ii) effort

expectancy, iii) social influence, iv) facilitating conditions, v) Hedonic motivation, vi) Price value and vii) Habit. Added to these were new drivers viz., Ease of ordering and COD mode of payment were also considered to make the model suitable for India and other emerging countries. The same were validated through using CFA. The hypotheses were tested using AMOS 20. Results lend support and the study confirmed performance expectancy, effort expectancy, social influence, hedonic motivation, facilitating conditions, COD and ease of ordering as the major drivers in case of online shopping. Price value emerged non-significant driver of online shopping. The outcome of hypotheses testing has been shown through table 5.3:

Table 5.3: ***Hypotheses testing of drivers of online retailing***

	Hypotheses	**Result**
****H3(a)***	***Performance expectancy, effort expectancy, social influence and facilitating conditions are the drivers of online retailing.***	**Accept**
****H3(b)***	***Hedonic motivation, price value and habit are the drivers of online retailing.***	**Partially Accept**
****H3(c)***	***Ease of ordering and Cash-on-delivery mode of payment (COD) are drivers of online retailing.***	**Accept**
****H3(d)***	***There is a significant positive association between drivers of online retailing and customer satisfaction.***	**Accept**

On the basis of results , it was inferred that Performance expectancy, Effort expectancy, Social influence, Facilitating conditions, Hedonic motivation, Price value, Ease of ordering and Cash-on-delivery have positive relationship with customer satisfaction. Furthermore they emerge as significant predictors of customer satisfaction.

The fourth objective of the research is:

O4: To analyze hindrance factors of online retailing in North India.

Any study will be incomplete without covering the barriers and hurdles. Thus, the present study also tries to cover the barriers in online retailing. Steps to tackle these barriers will improve performance of online retailers. The barriers of online retailing have been examined through perceived risk. The results of Confirmatory factor analysis lend support to five risks, viz. product performance risk; financial risk; time risk; privacy risk; and social risk which are major constituents of perceived risk. Security risk never surfaced as a predictor of perceived risk. Perceived risk had a significant negative relationship with customer satisfaction. The results of hypotheses testing have been shown through Table 5.4.

Table 5.4: ***Hypotheses testing of hindrance factors of online retailing***

	Hypotheses	**Result**
****H4(a)***	***Perceived risk is a multidimensional construct and is significantly predicted by product performance risk, financial risk, time risk, security risk, privacy risk and social risk.***	**Partially Accept**
****H4(b)***	***The facets of perceived risk are negatively related with customer satisfaction.***	**Accept**

The fifth objective of the research is:

O5: To design a model for improving performance of online retailers.

To developing a model Structural Equation Modelling (SEM) was applied on all the constructs. Figure 4.3 depicts the hypothesized structural model with standardized weights. In case of Website functionality the path coefficient had a value of 0.46 and with R^2=0.21, p≤0.001). These results provide evidential support that it positively influenced customer satisfaction. Similarly, drivers of online shopping (path coefficient=0.740, R^2 = 0.55, p≤0.01) also emerged as important predictors of customer satisfaction related positively with it. Perceived risk was negatively related with customer satisfaction. The path coefficient had a loading of 0.768 with R^2=-0.58, p≤0.001). To evaluate the model fit indices used in the study include: Chi-Square, RMSEA, GFI, TLI, CFI, AGFI and NFI.

Thus, the present study has designed a structural model from online retailing perspective for improving customer satisfaction in relation to online retailing. The model developed in the study will help to reduce the perceived risk thereby strengthening the relationship with customers. This will enhance customer satisfaction which in turn will help to increase the performance of online retailers in north India. Understanding the factors of the website functionality and drivers to online retailing which have emerged significant in the study will assist online retailers to take remedial steps in areas where they are lagging behind. Investing in these areas will assist in encashing the benefits to survive in competitive environment. Thus, the suggested model provides an appropriate direction to online retailers in North India to have a holistic approach to e-retailing.

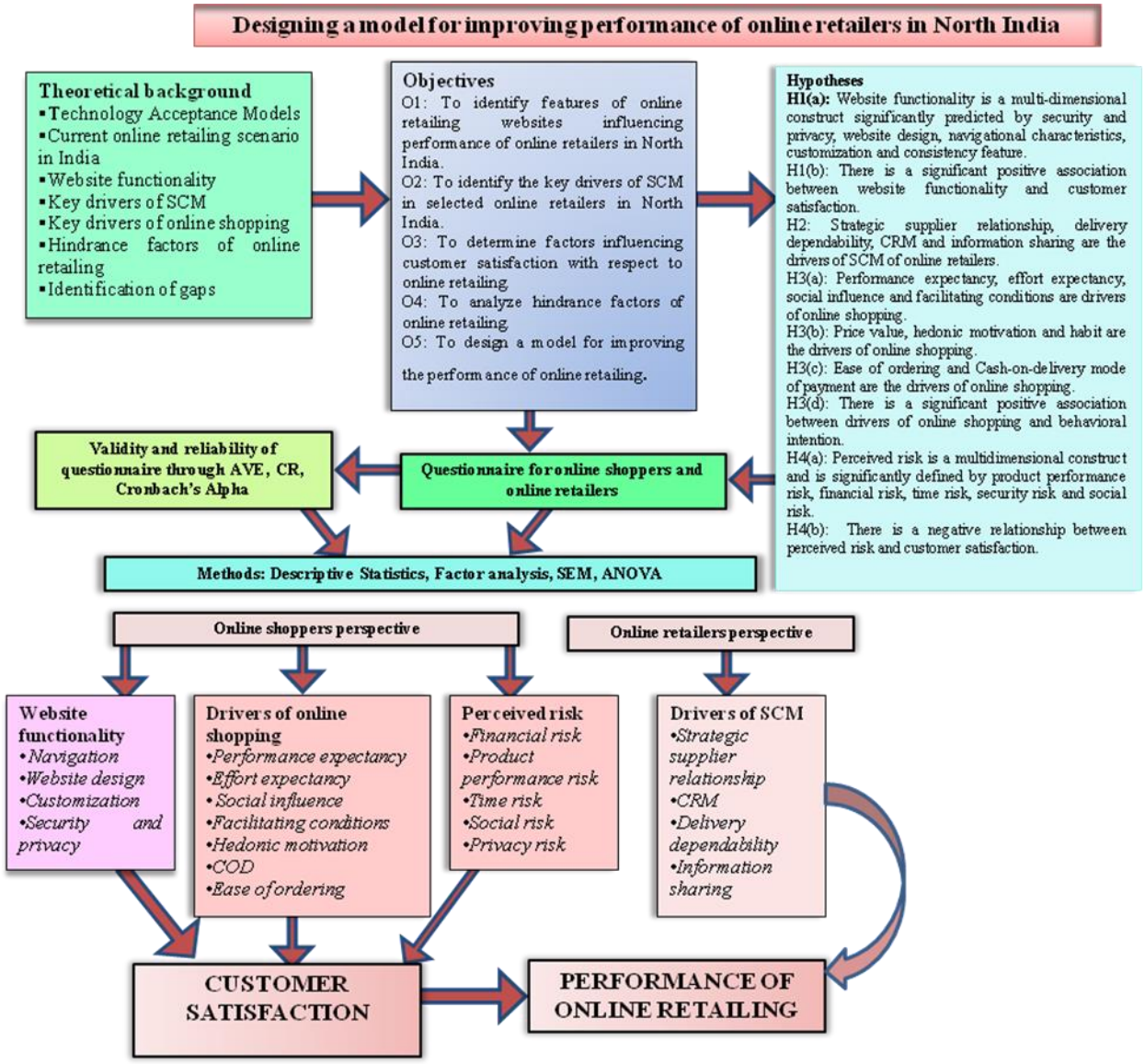


Figure 5.1: Complete overview of research

5.3 Theoretical and practical implications

This research has significance for academic community in addition to online retailers. The rationale of this study has been to come up with a detailed and an overall inclusive model covering online retailing in India which could increase their performance. The study incorporated website functionality, online shopping drivers and perceived risk dimensions that checked shopping online. The study further validated predictors of UTAUT 2 in online retailing perspective and modified the scale by including COD besides ease of ordering. The model developed and presented exhibits an exhaustive reflection of drivers, perceived risk and website functionality which help to improve the performance of online retailers in India.

5.3.1 Theoretical Implications

The research findings have not only added to the existing knowledge but deepened the same also in relation to online retailing in India. The model emerged from this research may have broader understanding of related factors inducing online purchases.

The main implication visualised in this study lies in integrating various website functionality features, perceived risk and drivers of online shopping which are pre-requisite for technology adoption .In this study, emergence of website functionality as a noteworthy factor points out that customers prefer to acquire information about the product through striking graphical depictions, hyperlinks and layout of websites. Customers do purchase the product online only when website of online retailer is simple and easy to operate upon. With appealing layout and striking graphics, purchasers can locate information regarding the product which in turn helps them save their time. This may probably result in diminishing perceived risk.

An added key academic contribution of this research is validating the predictors' namely Cash-on-delivery and ease of ordering to analyse their relation with customer satisfaction. Ease of ordering encompasses different issues related with placing an ordering, tracking and cancelling or modifying the order. The study attempts to empirically examine relationship of ease of ordering with customer satisfaction. At present, there is not much research reported on different methods of payment. Through this research, the role of COD method of payment also stands established as a trust-builder between buyers and online retailers in Indian online retailing scenario. Particularly, the impact of COD mode of payment is more significant in technologically deficient countries where online retailing got started later than most of the western countries. Therefore, COD mode of payment emerged as a significant factor leading to customer satisfaction. This study highlights that COD mode of payment needs to be

analyzed intensely and included in online retailing adoption models across diverse socio-economic -cultural scenarios.

In this study perceived risk emerged as a second order multidimensional construct. Social risk besides time and privacy risks emerged significantly noticeable indicators for perceived risk whereas financial risk as well as product performance also emerged significant but was with comparatively lower impact. Security risk was found insignificant in the present research. The implication for this is that due to increase in confidence people in India are adopting online shopping and with subsequent purchases the issue of security gets diluted. The study confirmed negative relationship of perceived risk with customer satisfaction. It calls for due emphasis to be given to lower perceived risk for enhancing shopping online.

5.3.2 Practical implications

Understanding the components in a developed research model requires due consideration from online retailers in India as well as those in less developed countries so that they may get new buyers in their folds besides retaining the existing ones also.

Indian e-retailers are required to generate awareness among customers about various benefits of shopping online besides its convenience and usefulness. They may improve channel enjoyment, excitement and entertainment besides providing quality products to increase customer satisfaction. Website functionality surfaced as an important predictor of customer satisfaction subsequently emphasizing that website features may be augmented to make them more customer friendly having strikingly alluring web pages which are hassle-free to upload. Satisfied and delighted customer will be retained for longer time and hence this will improves efficiency and performance. Thus, it will be win-win situation for both i.e. for online retailers and for customers too.

Online retailing turns out to be easy under the influence of drivers: i) performance expectancy, ii) effort expectancy, iii) social influence, iv) hedonic motivation, and v) facilitating conditions. This is indicative of the fact that customers are apprehensive about the responses from their community members. Online retailers ought to select frequent shoppers who may be taken as their opinion leaders and may act as role models in their specific marketing awareness campaigns.

The coming out of price value as an inconsequential factor signifies that the existing pricing pattern adopted by online retailers may not exhibit the relative value of the listed products. The e- retailers may lay particular emphasis not only on assured warrantee and guarantee of products besides prompt and effective post-sales service to boost and stimulate e-shoppers

confidence to influence them to expand shopping. Festive discounts may be added attraction for customers thereby promoting online retailing. Further, online chat forum and virtual tour through website may reduce the trepidation of customers and retain them.

The present study has substantiated a negative influence of perceived risk on customer satisfaction. The e- retailers are required to confer due social support to customers so that they can lessen their perceived risk thereby building confidence towards online shopping. Focusing on social, time, privacy, product performance and financial risk may help in projecting online retailing as less risky venture. Reliance on COD mode of payment may be relied upon overcome this fear. Significant emergence of time risk indicates that unlike in technically developed countries, internet connectivity continues to be a matter of concern for developing economies. This calls for an added endeavour from ISPs who need to provide internet facility at lower cost. Further, online customers need to be better acquainted with the replacement policy and query handling software. Proficient customer support executives well versed with regional languages and dialects may be engaged for providing a familiar touch.

A noteworthy implication of the study is validating COD mode of payment with UTAUT2. Majority of Indian population does not possess *Credit card* /*Debit card* and those who have, use the same to withdraw cash from ATM. Therefore COD mode of payment may be used for enhancing online shopping. Due to recent internet penetration, people in small towns have also started shopping online therefore, focusing on COD may offer online retailers a competitive advantage. Besides, all the overhead costs covering packing and transportation including shipping costs must to be exhibited clearly during the process of order placement. For trust in online shopping timely delivery may be assured. The online retailers must simultaneously focus on 3PL (Third party Logistics) or by developing their own transportation mechanism. Developing structural, technological and legal framework will improve security and assist smooth, safe and secure online transactions thus convincing the customers for repurchase.

5.4 Limitations and future research

The current research also has some limitations. These limitations also offer an opportunity to supplement research and also focus on additional research in allied areas. In the first instance, as the data collected represents North India only, the outcome may not be applicable for other parts of India due to difference in exposure. However, this study can be extended to neighbouring Asian countries to test the applicability of findings under diverse cultural perspectives. Constructs like payments through COD besides ease of ordering are suggested

for further investigation under different socio-ethno-economic scenario. Future research may include other drivers like trust to increase the relevant use of UTAUT 2 to a wide range of technologies. As online retailing is still in initial stages, therefore only website functionality was considered. Further studies on website quality can enhance the applicability of the model. Finally, in view of time limitations, the study concentrated on financial - product performance – social – time – privacy – security risks only. Nevertheless, additional variables like quality, delivery, after sales and psychological risks may also be studied to widen the scope. Further, this research has considered cross sectional survey method for collecting data which means the data was collected once but customer's satisfaction levels and perceptions may vary from time to time. A longitudinal research may be used for confirming the casual association among the selected factors in this study. Besides, the present study leaves significant space for researchers to concentrate on consumers in rural and semi-urban areas having limited access to technology adoption.

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ANNEXURE 1

Construct and measurement details of Website functionality

S.No	**Measurement items** **Source: (Wolfonbarger and Gilly, 2003; Lee and Kozer, 2012; Tandon *et al.*, 2015)**	
1	The layout of websites facilitates my search for products.	WD1
2	The attractive colour scheme of websites facilitates my shopping.	WD2
3	The graphics displayed in websites provide me ease for ordering product.	WD3
4	I find shopping online an exciting experience.	WD4
5	I can find what I am looking for with minimum number of mouse clicks.	WD5
6	The contents provided by websites are easily understood by me.	WD6
7	I feel that the website responds to customers' needs.	WD7
8	Pictures of products which I am looking for are downloaded quickly.	WD8
9	I can customize my product before ordering.	WD9
10	The search function at websites is helpful for me.	WD10
11	The online retailer's website repeats the same structure, components and overall looks across the pages to facilitate my shopping.	WD11
12	The web-pages which I am looking for can be reached through multiple tabs/windows.	WD12
13	The websites allow me for easy return to the previous display pages.	WD13
14	The websites make it easy for me to recognize key information.	WD14
15	I feel that the websites have adequate security measures.	WD15
16	I feel safe while using my credit card/ debit card on the websites.	WD16
17	I trust that the websites will not give my personal details to other websites without my permission.	WD17
18	Online retailers offer me user memberships for surfing on the password protected web-pages within the website.	WD18
19	Integrated of websites with social media like , twitter, youtube, facebook etc. that keeps me updated about new products.	WD19

Construct and measurement details of SCM practices of online retailers

Constructs	Measurement items Source: Hamister, 2012	Item
STRATEGIC SUPPLIER RELATIONSHIP	Our organization relies upon few dependable suppliers	**SS1**
	Our organization strives to establish long term relations with suppliers.	**SS2**
	We consider quality as top most criteria for selecting suppliers.	**SS3**
	We solve problems jointly with our suppliers	**SS4**
	We have continuous improvement programme for our suppliers	**SS5**
	We believe in collaborative decision making with our suppliers	**SS6**
	We always work for trust development among our supply chain members.	**SS7**
CUSTOMER RELATIONS MANAGEMENT(CRM)	Our organization frequently evaluates formal and informal complaints of customers	**CRM1**
	Our organization has frequent follow up with customers for service feedback.	**CRM2**
	We offer facilities like modification/cancellation/removal etc once the order is placed.	**CRM3**
	We keep customers informed with new arrivals and latest updates	**CRM4**
	We offer EMI for purchase of products	**CRM5**
	We keep customers updated with various offers and sales promotion programmes	**CRM6**
	We have an up-to-date segmentation of customers according to their requirements	**CRM7**
	Defective item is relpaced without delay	**CRM8**
	We provide flexibility in service quality to meet customer satisfaction	**CRM9**
	Online enquiry to response time is provided	**CRM10**
INFORMATION SHARING	Our suppliers regularly share pertinent information with us	**INFO1**
	We and our trading partners exchange information that helps in establishment of business planning.	**INFO2**
	Misunderstanding in communication is rectified quickly.	**INFO3**
	We tend to provide all important information on our website for customers and suppliers	**INFO4**
	Information sharing with our partners is reliable.	**INFO5**
	Information sharing with our partners is accurate.	**INFO6**
	Information sharing with our partners is complete	**INFO7**
	Right information is provided to the right supplier at right time.	**INFO8**
DELIVERY DEPENDABILITY	Our organization has entire e-fulfilment system design.	**DDEP1**
	We give top most priority to delivery on time.	**DDEP2**
	We tend to reduce order fulfilment costs by establishing SBU	**DDEP3**

	Purchase order processing in our organization is fast	**DDEP4**
	We notify customers about off-shipping delays and inventory emergencies	**DDEP5**
	We have a reliable courier service	**DDEP6**
	Our organization owns fleet of transport for timely and speedy delivery	**DDEP7**
	Our organization has 3PL for making reliable delivery	**DDEP8**
	We have vehicle route planning for multiple deliveries	**DDEP9**
	Our organization has central warehouse dedicate to home delivery	**DDEP10**
	We have stock -managing system which is connected to online stock availability.	**DDEP11**

Construct and measurement details of Drivers of online retailing

S.No	Measurement items and their source	Items
1	**Performance Expectancy (PE) (Venkatesh *et al.*, 2003, 2012, p.178; Tandon *et al.*, 2016, p. 434)**	
	Online shopping provide wide assortment of products useful in my daily life.	PE1
	Online shopping helps me to find product information within the shortest time frame.	PE2
	While shopping on internet I can find some products that are not easily available in physical stores	PE3
	Online shopping enables me to accomplish shopping more quickly than traditional stores	PE4
	Shopping online takes less time from search of products to transaction.	PE5
2	**Effort Expectancy (EE) (Venkatesh *et al.*, 2003, 2012, p.178; Tandon *et al.*, 2016, p. 434)**	
	It was easy for me to learn internet shopping.	EE1
	The language used by online retailers is easy to understand.	EE2
	Internet shopping websites are easy to use.	EE3
	Information provided by online retailers help me to purchase product.	EE4
3	**Ease of ordering (ORD) (Tandon *et al.*, 2015)**	
	It is easy to track orders placed online.	ORD1
	It is easy to modify orders placed online.	ORD2
	It is easy to cancel orders placed online.	ORD3
	It is easy to replace orders placed online.	ORD4
4	**Facilitating Conditions (FAC) (Venkatesh et al., 2003, 2012, p.178; Tandon *et al.*, 2016, p. 434)**	
	I have resources necessary to use online shopping	FAC1
	I have knowledge necessary to use online shopping	FAC2
	Online shopping is compatible with other technologies I use	FAC3
	I can get help from others when I have difficulties using online shopping	FAC4
5	**Hedonic Motivation (HM) (Venkatesh *et al.*, 2012 , p.178; Tandon *et al.*, 2016, p. 434)**	
	Shopping online is an exciting experience for me.	HM1

	Shopping online is fun for me.	HM2
	I feel shopping online is enjoyable.	HM3
	Shopping online is very entertaining.	HM4
6	**Price Value (PVA) (Venkatesh *et al.*, 2012, p.178; Tandon *et al.*, 2016, p. 434)**	
	Online products are reasonably priced	PVA1
	Online shopping provides me good value for money	PVA2
	Online discounts and promotions offered are often attractive which provide me value for money.	PVA3
7	**Habit (HT) (Venkatesh *et al.*, 2012, p.178; Tandon *et al.*, 2016, p. 434)**	
	The use of online shopping has become a habit for me.	HT1
	I am addicted to shopping online.	HT2
	Online shopping has become natural to me.	HT3
8	**Social Influence (SIA) (Venkatesh *et al.*, 2012 p.178; Tandon *et al.*, 2016, p. 434)**	
	People who are important to me think that I should ad0pt online shopping	SIA1
	People who influence my behavior think that I should adopt online shopping	SIA2
	People whose opinions that I value prefer that I use online shopping	SIA3
8	**COD mode of payment (COD) (Tandon *et al.*, 2016) (New scale items)**	
	I think COD is a reliable mode to payment	COD1
	I prefer to buy through cash on delivery(COD) mode of payment	COD2
	I plan to pay through COD mode of payment.	COD3
	COD mode of payment facilitates easy return of defected products	COD4
	COD give me confidence for future repurchase of products	COD5

Construct and measurement details of perceived risk as barriers

S.No	Measurement items and their source	Item
	Financial Risk (FR) (Tandon *et al.*, 2016, p.434, Masoud, 2013, Almousa, M. 2011)	
1	While online shopping the debit/credit card information may be stolen by others.	FR1
	I might get overcharged if I shop online	FR2
	I can't trust the online company	FR3
2	**Product Performance risk (PR) (**Tandon *et al.*, 2016, p.434, Forsythe et al., 2006)	
	Fear of faulty products	PR1
	I am not assured about the size of the product.	PR2
	I can't judge the performance of product without touching.	PR3
	Inability to try products before purchase makes me suspicious of its performance.	PR4
3	**Time risk (TR) (**Tandon *et al.*, 2016, p.434; Zhang et al., 2012)	
	Buying a product online can involve a waste of time	TR1
	Slow internet speed wastes my time (New scale item)	TR2
	Tiresome browsing through internet leads to wastage in time	TR3
	Inapt query handling leads to wastage of time (New scale item).	TR4
4	**Social risk** (Tandon *et al.*, 2016, p.434; Zhang et al., 2012)	
	Product purchased may result in disapproval by my family	SR1
	Online shopping may affect the image of people living around me.	SR2
	Online products may not be recognized by my relatives or friends.	SR3

	Online shopping may make others reduce my evaluation.	SR4
5	**Security risk (SECR)** (Tandon *et al.,* 2016, p.434, Kolsaker and Payne, 2002)	
	Online shopping websites are not secure.	SECR1
	Posting my personal details online inhibits online shopping.	SECR2
	Online shopping websites donot have adequate security measures.	SECR3
6	**Privacy risk (PRIV)** (Tandon *et al.,* 2016, p.434; Zhang et al., 2012)	
	Online shopping e-mail address may be abused by others.	PRIV1
	My phone number may be abused by others.	PRIV2
	My personal information may be disclosed to others.	PRIV3
	My bank card may be stolen by others.	PRIV4

ANNEXURE 2

Questionnaire 1

Dear Sir/Madam

Objective: In connection with my research project (Ph.D), entitled, " I wish to elicit some information about your experience with online shopping. Please take few minutes to fill up this questionnaire. You can answer questions by ticking (✓) against the correct responses.

The information obtained will be purely used for academic purpose and will be kept confidential. Your cooperation will be genuinely appreciated.

SECTION A

General Information about the Respondent

1 Name :..... City:.....

2 Gender: Male ☐ Female ☐

3 Age: a) 18-30 years b) 31-45 years c) More than 45

4 Education Qualification: a) Undergraduate b) Graduate c) Post Graduate

5 Nature of consumer: a) Student b)Self- employed c) Service

6 Income (Annual): a) Less than 3.5 Lakh b) 3.5-6 Lakh c) More than 6 Lakh

7 Do you shop online? Yes ☐ No ☐

If your answer is "Yes" please answer the following questions:

8 For how long you have been shopping on Internet?

a) Less than 1 year b) 1-3 years c) More than 3 years

9 How many hours do you spend for online shopping in a month?

a) Less than 2 hours b) 2-6 hours c) More than 6 hours

10 How many products have you actually purchased online in last 6 months?

a) Less than 2 b) 2-5 c) More than 5

11 What is your preferred mode of payment?

a) Cash-on-delivery b) Credit card c) Debit card d) Net banking

SECTION B. Website Functionality

Below are several website attributes that encourage you to do online shopping. Please rate the following statements on the basis of your experience.

Rate 1-5, 1= Strongly disagree and 5 = Strongly agree

1.	The layout of online retailing websites facilitates searching for products.	1	2	3	4	5
2.	The attractive colour scheme of online retailing websites facilitate shopping	1	2	3	4	5
3.	The graphics displayed in websites provide ease for ordering product.	1	2	3	4	5
4.	Shopping online is an exciting experience.	1	2	3	4	5
5.	I can find what I am looking for with the minimum number of mouse clicks.	1	2	3	4	5
6.	The contents provided by the websites are easily understood.	1	2	3	4	5
7.	I can filter the content I want to see.	1	2	3	4	5
8.	Pictures of products are downloaded quickly.	1	2	3	4	5
9.	I can customise my product before ordering.	1	2	3	4	5
10.	The search function at the websites is helpful.	1	2	3	4	5
11.	The website responds to customer needs.	1	2	3	4	5
12.	The online retailers' websites repeat the same structure, components, and overall looks across pages.	1	2	3	4	5
13.	The web pages which I am looking for can be reached through multiple windows/tabs.	1	2	3	4	5
14.	The websites allow easy return to previous display pages.	1	2	3	4	5
15.	The websites make it easy to recognise key information.	1	2	3	4	5
16.	The websites have adequate security measures.	1	2	3	4	5
17.	I feel safe while using my credit card/ debit card on the website.	1	2	3	4	5
18.	I trust that the website will not give my personal details to other websites without my permission.	1	2	3	4	5
19.	Online retailers offer user memberships for surfing on password protected web pages within the website.	1	2	3	4	5
20.	The websites are integrated with social media like youtube, twitter facebook etc that keeps me updated about new products.	1	2	3	4	5

SECTION C

Below are several drivers which encourage you to undertake online shopping and make your shopping convenient. Please rate the following statements on the basis of your experience.

Rate 1-5, 1=Strongly disagree and 5 = Strongly agree

1	Online shopping provide wide assortment of products useful in my daily life.	1	2	3	4	5
2	Online shopping helps me to find product information within the shortest time frame.	1	2	3	4	5
3	While shopping on internet I can find some products that are not easily available in physical stores	1	2	3	4	5
4	Online shopping enables me to accomplish shopping more quickly than traditional stores	1	2	3	4	5
5	Shopping online takes less time from search of products to transaction.	1	2	3	4	5
6	It was easy for me to learn internet shopping.	1	2	3	4	5
7	The language used by online retailers is easy to understand.	1	2	3	4	5
8	Internet shopping websites are easy to use.	1	2	3	4	5
9	Information provided by online retailers help me to purchase product.	1	2	3	4	5
10	It is easy to track orders placed online.	1	2	3	4	5
11	It is easy to modify orders placed online.	1	2	3	4	5
12	It is easy to cancel orders placed online.	1	2	3	4	5
13	It is easy to replace orders placed online.	1	2	3	4	5
14	I have resources necessary to use online shopping	1	2	3	4	5
15	I have knowledge necessary to use online shopping	1	2	3	4	5
16	Online shopping is compatible with other technologies I use	1	2	3	4	5
17	I can get help from others when I have difficulties using online shopping	1	2	3	4	5
18	Shopping online is an exciting experience for me.	1	2	3	4	5
19	Shopping online is fun for me.	1	2	3	4	5
20	I feel shopping online is enjoyable.	1	2	3	4	5
21	Shopping online is very entertaining.	1	2	3	4	5
22	Online products are reasonably priced	1	2	3	4	5
23	Online shopping provides me good value for money	1	2	3	4	5
24	Online discounts and promotions offered are often attractive which provide me value for money.	1	2	3	4	5
25	The use of online shopping has become a habit for me.	1	2	3	4	5
26	I am addicted to shopping online.	1	2	3	4	5

27	Online shopping has become natural to me.	1	2	3	4	5
28	People who are important to me think that I should ad0pt online shopping	1	2	3	4	5
29	People who influence my behavior think that I should adopt online shopping	1	2	3	4	5
30	People whose opinions that I value prefer that I use online shopping	1	2	3	4	5
31	I think COD is a reliable mode to payment	1	2	3	4	5
32	I prefer to buy through cash on delivery(COD) mode of payment	1	2	3	4	5
33	I plan to pay through COD mode of payment.	1	2	3	4	5
34	COD mode of payment facilitates easy return of defected products	1	2	3	4	5
35	COD give me confidence for future repurchase of products	1	2	3	4	5

SECTION D

Below are apprehensions which restrain shopping online. Based on your consideration please select the answer that prohibits you to shop online.

Rate the following statements on the basis of your experience.

Rate 1-5, 1= Strongly disagree and 5 = Strongly agree

S.No	**Barriers of online shopping**					
1	While online shopping the debit/credit card information may be stolen by others.	1	2	3	4	5
2	I might get overcharged if I shop online	1	2	3	4	5
3	I can’t trust the online company	1	2	3	4	5
4	Fear of faulty products	1	2	3	4	5
5	I am not assured about the size of the product.	1	2	3	4	5
6	I can't judge the performance of product without touching.	1	2	3	4	5
7	Inability to try products before purchase makes me suspicious of its performance.	1	2	3	4	5
8	Buying a product online can involve a waste of time	1	2	3	4	5
9	Slow internet speed wastes my time (New scale item)	1	2	3	4	5
10	Tiresome browsing through internet leads to wastage in time	1	2	3	4	5
11	Inapt query handling leads to wastage of time (New scale item).	1	2	3	4	5
12	Product purchased may result in disapproval by my family	1	2	3	4	5
13	Online shopping may affect the image of people living around me.	1	2	3	4	5
14	Online products may not be recognized by my relatives or friends.	1	2	3	4	5
15	Online shopping may make others reduce my evaluation.	1	2	3	4	5
16	Online shopping websites are not secure.	1	2	3	4	5
17	Posting my personal details online inhibits online shopping.	1	2	3	4	5
18	Online shopping websites donot have adequate security measures.	1	2	3	4	5
19	Online shopping e-mail address may be abused by others.	1	2	3	4	5
20	My phone number may be abused by others.	1	2	3	4	5
21	My personal information may be disclosed to others.	1	2	3	4	5
22	My bank card may be stolen by others.	1	2	3	4	5

ANNEXURE 3

DESIGNING A MODEL FOR IMPROVING ONLINE RETAILING PERFORMANCE: A STUDY OF SELECTIVE ONLINE RETAILERS IN NORTH INDIA

Objective: In connection with my research project (Ph.D.), I wish to elicit some information pertaining to your organisation related to the key components on Website functionality, Supply Chain Management and their effectiveness and barriers in the way of online retailing. Please take few minutes to fill up this questionnaire. You can answer questions by ticking (✓) against the correct responses.

The information being collected is purely for research and academic purpose and will be kept confidential. Your cooperation is appreciated.

SECTION A

General Information about the Respondent

1 Name of the respondent:

2 Job Title:
a) Director b) General Manager c) Manager
d) Any other please specify.....

3 Number of years of service in current organization:
a) Less than 1 year b) 1-3 years c) More than 3 years

General Information about the Organization

1 Name of the company:

2 Number of Employees:

3 Types of products delivered (Tick Multiple Items)
a) Fashion and Lifestyle b) Personal care products c) Electronic Gazettes
d) All the above

SECTION B

Specific Information about drivers of SCM

S.No	Drivers of SCM					
	STRATEGIC SUPPLIER RELATIONSHIP					
1	Our organization relies upon few dependable suppliers	1	2	3	4	5
2	Our organization strives to establish long term relations with suppliers.	1	2	3	4	5
3	We consider quality as top most criteria for selecting suppliers.	1	2	3	4	5
4	We solve problems jointly with our suppliers	1	2	3	4	5
5	We have continuous improvement programme for our suppliers	1	2	3	4	5
6	We believe in collaborative decision making with our suppliers	1	2	3	4	5
7	We always work for trust development among our supply chain members.	1	2	3	4	5
	CUSTOMER RELATIONS MANAGEMENT(CRM)					

1	Our organization frequently evaluates formal and informal complaints of customers	1	2	3	4	5
2	Our organization has frequent follow up with customers for service feedback.	1	2	3	4	5
3	We offer facilities like modification/cancellation/removal etc once the order is placed.	1	2	3	4	5
4	We keep customers informed with new arrivals and latest updates	1	2	3	4	5
5	We offer EMI for purchase of products	1	2	3	4	5
6	We keep customers updated with various offers and sales promotion programmes	1	2	3	4	5
7	We have an up-to-date segmentation of customers according to their requirements	1	2	3	4	5
8	Defective item is replaced without delay	1	2	3	4	5
9	We provide flexibility in service quality to meet customer satisfaction	1	2	3	4	5
10	Online enquiry to response time is provided	1	2	3	4	5
	INFORMATION SHARING					
1	Our suppliers regularly share pertinent information with us	1	2	3	4	5
2	We and our trading partners exchange information that helps in establishment of business planning.	1	2	3	4	5
3	Misunderstanding in communication is rectified quickly.	1	2	3	4	5
4	We tend to provide all important information on our website for customers and suppliers	1	2	3	4	5
5	Information sharing with our partners is reliable.	1	2	3	4	5
6	Information sharing with our partners is accurate.	1	2	3	4	5
7	Information sharing with our partners is complete	1	2	3	4	5
8	Right information is provided to the right supplier at right time.	1	2	3	4	5
	DELIVERY DEPENDABILITY					
1	Our organization has entire e-fulfillment system design.	1	2	3	4	5
2	We give top most priority to delivery on time.	1	2	3	4	5
3	We tend to reduce order fulfillment costs by establishing SBU	1	2	3	4	5
4	Purchase order processing in our organization is fast	1	2	3	4	5
5	We notify customers about off-shipping delays and inventory emergencies	1	2	3	4	5
6	We have a reliable courier service	1	2	3	4	5
7	Our organization owns fleet of transport for timely and speedy delivery	1	2	3	4	5
8	Our organization has 3PL for making reliable delivery	1	2	3	4	5
9	We have vehicle route planning for multiple deliveries	1	2	3	4	5
10	Our organization has central warehouse dedicate to home delivery	1	2	3	4	5
11	We have stock -managing system which is connected to online stock availability.	1	2	3	4	5

12	Focussing on effective delivery increases our performance	1	2	3	4	5
13	Right integration of information increases our performance	1	2	3	4	5
14	Long term supplier relations increase our performance	1	2	3	4	5

List of Publications

S.NO	Name of the Journal	Title of Paper	Status of Publication	Journal Coverage
1	Information Development	Customer satisfaction using website functionality, perceived usability and perceived usefulness towards online shopping in India, ,	Information Development, 32(5): 1657-1673.	*SSCI Impact factor= 1.691
2	Service Science	Understanding online shopping adoption in India: Unified Theory of Acceptance and Use of Technology (UTAUT2) with Perceived Risk Application	Service Science, 8(4): 420-437.	* SSCI Impact factor 1.158
3	Service Science	Customer Satisfaction as a mediator between website service quality and repurchase intention: An emerging An emerging economy case	Service Science, 9(2): 106-120 .	SSCI Impact factor 1.158
4	Information Systems and e-Business Management	The influence of website functionality, drivers and perceived risk on customer satisfaction in online shopping: an emerging economy case	Information Systems and e-Business Management DOI 10.1007/s10257-017-0341-3	SSCI Impact factor 1.7
4	Global Journals Inc.(US)	Analyzing deterrents to online retailing: A study of users and non-users in India.	Published in Global Business and Management Research: An International Journal, vol. 7, pp. 21-41, 2015.	Indexed in: ProQuest EBSCO .
5	International Journal of Electronic Marketing and Retailing	Analysing the complexities of website functionality, perceived ease of use and perceived usefulness on customer satisfaction of online shoppers in India	Published in International Journal of Electronic Marketing and Retailing, 7(2): 115-140.	Listed in ABDC "C" Category
6	Int. J. of Electronic Business (IJEB)	Understanding Barriers And Drivers To Online Shopping: An emerging economy case.	13(2/3): 216-243.	Listed in ABDC "C" Category
7	Nankai Business Review International	Analyzing Customer Satisfaction: Users Perspective towards Online Shopping	8(3):.266-288.	ESCI, Scopus.

Papers Presented in Conferences

S.No.	Author(s)	Year	Title of Paper	Name and Place of Conference
1	Tandon Urvashi, Kiran Ravi and Sah AN	December 2016	Innovative Supply chain management practices of online retailers	RREII, Thapar Universiy December 16-17, 2016
2	Tandon Urvashi, Kiran Ravi and Sah AN	January 2016	The Impact of Perceived Usefulness on Customer Satisfaction: An Analysis of Online Shoppers in North India	India Inc.: Trends and Opportunities through Emerging Disruptions. Indira Institute of Management, Pune, 15-16 January 2016.
3	Tandon Urvashi, Kiran Ravi	November 2105	Understanding Relation of Website Functionality with Behavioural Intention in Online Shopping Context	ICEHM, Canadian House of City universitaire de Paris, (Maison des Etudiants Canadiens), Paris, France, 25-26 November , 2015
4	Tandon, Urvashi, Kiran, Ravi, Sah, A.H	Jan 2015	Impact of perceived usability on repurchase intentions.	Business Strategies for Excellence in Emerging Economies ISBN No. 978-81-921957-9-7 Bhaddal Tech Publications Punjab, India
5	Tandon, Urvashi, Kiran, Ravi, Sah, A.H	March 2014	Customer Satisfaction towards online retailing in India; A theoretical perspective	International Conference at Thapar University, Patiala
6	Kiran, Ravi, Tandon, Urvashi	Nov 2013	Analysing impediments to online retailing in India	International Conference at IIM Bangalore