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The Role of Knowledge Share, Satisfaction, Social Commerce Usage Experience on Smart Mobile Device User's Purchase Intentions: Evidence from South Korean Consumers

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The Role of Knowledge Share, Satisfaction, Social Commerce Usage Experience on Smart Mobile Device User's Purchase Intentions:

Evidence from South Korean Consumers

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Abstract

This thesis analyses the factors that contribute to consumers' intention to make online purchases via smart mobile devices. To examine consumers' purchase intentions, frameworks described in the marketing and information system literatures were integrated, and a theoretical framework was then proposed. In total, 498 Korean consumers were recruited to participate in the study, and structural equation modelling was used to examine the proposed model. The results confirm that (1) consumers' mobile commerce usage experience positively influences their usage experience with social commerce sites, their satisfaction toward social commerce sites, and their intentions to share knowledge; (2) usage experience with social commerce sites has a significant impact on consumers' intention to purchase; (3) satisfaction toward social commerce sites has a positive influence on consumers' intention to purchase; and (4) consumers' intention to share knowledge positively influences their intention to purchase. Implications are drawn for both academics and practitioners, providing directions for future research.

Keywords: *mobile commerce, social commerce, satisfaction, knowledge sharing*

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Author's Declaration

"I declare that, except where explicit reference is made to the contribution of others, this dissertation is the result of my own work and has not been submitted for any other degree at the University of Westminster or any other institution"

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Kyung-Joon Kwon,

March 2018

Chapter 1 Introduction

1.1. Introduction

The online shopping environment is shifting into digital and social space for consumers. The share of electronic commerce in total global retail sales is increasing at a steady pace and is expected to reach approximately 14.6% by 2020, which is significant, as e-commerce represented just 7.4% of total sales in 2015 (Statista, 2016a). Online shopping has grown into an environment for consumers to not only simply shop and buy products onlinebut alsoto share their experiences, information, reviews, feedback and opinions sociallywith an online community or online social media and networks. Online sales in Europe grew by 86% in the 5-year period between 2011 and 2015 –an increase of approximately 83 billion euros (Mintel, 2016a) – while those in South Korea showed a 23% increase in the 1-year period between 2015 and 2016, and notably, mobile commerce (m-commerce) increased 40.5% in the same period. M-commerce has grown rapidly and now accounts for approximately 56% of total online sales (Statistics of Korea, 2016). South Korea is ranked first in the world in terms of the amount of active social network penetration within the population as a whole, with 76%; the UAE ranks second, with 68% (Statista, 2016b).This significant shift in consumers from the traditional retail market to the online market can be attributed to two main drivers. The first was the development of mobile technology and the creation of smartphones and tablet computers, which provides users withaccess to the Internet and mobile applicationsat any time and place. In 2015, during the major shopping days during Thanksgiving weekend in the US – which are known as Black Friday and Cyber Monday – final purchases made by mobile devices accounted for almost one-third (29%) of all sales (PwC, 2016). The second driver is the usage of online social networks. In 2010, the number of registered online social network users worldwide was approximately 1 billion; in 2016, the number of registered users reached approximately 2.3 billion (Statista, 2016b). When asked about their social media usage, consumers indicated that reviews and comments were the most influential factors. Receiving promotional offers was a close second (Statista, 2016b).

1.2. Mobile Technology and Social Media's Influence on the Retail Industry

Online retail sales have continued to grow since the introduction of e-commerce. A worldwide report by Statista (2016a) identified the most popular online shopping categories in 2015. Fashion-related products were the product type most frequently purchased by online shoppers, with 58% of respondents reporting online fashion purchases; travel products or services and stationery, including books, followed, with 55% and 50%, respectively. Laudon and Traver (2016) identified ubiquity, global reach, universal standards, richness, interactivity, information density, personalisation and social networks as the reasons leading consumers to shop online. Evidently, global reach and the use of online social networks encourage online shopping, as a total retail survey conducted by PwC (2016) identified that 65% of consumers are willing to purchase products from outside the country if foreign vendors offer better prices. The online environment enables online consumers to search and find the information they seek easily and, in most cases, tomake purchases without country barriers.

The use of mobile technology such as smartphones and tablets has contributed to online retail sales. These smart mobile devices provide users with a wireless connection at all times and places, and consumers even use these devices in retail shops to search for product information instead of asking a staff member, to look for promotional coupons, and to compare a price with the retailer's competitors in order to get the best deal (PwC, 2016). Globally, approximately 46% of consumers bought products or services on mobile devices in 2015 (PwC, 2016), and 41% of UK consumers purchased products or services using a smartphone (Mintel, 2016c).

Alongside the rise in mobile technology, the increase in social media and network usage has also contributed to online retail sales. Young generations often accesssocial networks only on mobile devices (Mintel, 2016c; PwC, 2016). Consumers use smart mobile devices not only for online shopping; they also spend increasing time on online social media and networks.

The online environment can be considered a consumer-driven landscape facilitated by social media and networks, which has caused academic researchers to take more interest in the topic of social media and undertake research projects or related studies on it (Holsing and Olbrich, 2012).

Individual users' level of social media and network usage often changes their online shopping behaviour. As users read reviews by other members, receive promotions and engage with particular advertisements, they are encouraged to purchase a product (Statista, 2016a). Social media and network platforms allow consumers to share their experiences, levels of satisfaction and expert knowledge with other members of social networks, online communities, blogs and forums.

1.3. Gaps in the Literature

The development of technology and of an online environment provided the freedom to access an online community based fundamentally on computer-mediated communicationand thus created the phenomenon of online social media. In the information technology sector, perceived ease of use and perceived usefulness are recognised as the most important determinants of an individual's use and acceptance of technology (Moon and Kim, 2000). Previous research on online shopping appliedthe Technology Acceptance Model (TAM), Theory of Reasoned Action (TRA) and Theory of Planned Behaviour (TPB) to related topics.

Previous literature on electronic commerce has examined mainly the main platforms, multimedia, buying and selling, and business-to-business(B2B) and business-to-consumer (B2C) activities (Grandon and Pearson, 2004). The rapid growth of m-commercehas led researchers from the marketing information systems sector to examine the benefits of m-commerce platforms for both retailers and consumers (Laudon and Traver, 2016). With the development of technology and user-generated content, products, group dynamics, and, more importantly, social media use, both m-commerce and social commerce (s-commerce) have risen (Curty and Zhang, 2011; Kim and Park, 2013).

Online social network users share their experiences based on their level of satisfaction with post-purchase behaviour. In the satisfaction literature, many researchers have focused on expectations, purchase intention, and attitude (Churchill and Suprenant, 1982; Bai et al., 2008; Bhattacherjee, 2002; Kim et al., 2006; Lee et al., 2008; Lee, 2010).However, there remains a gap in the current approaches; consumer behaviour studies including the use of m-commerce, the adoption of such technology, user satisfaction, and knowledge sharingfail to appropriately consider the relevance of consumer-to-consumer (C2C) relationships and the presence of online social platforms. Online social media, networks, and community platforms play integral roles in the marketing strategy for many retailers; hence, companies embrace the online social environment to enable interactive communication with their consumers. According to Fournier and Lee (2009), building a successful virtual brand community requires companies to align themselves with consumers and to have an effective virtual community platform. Studying the use of social media and network platforms –a key variable in building a successful online community – and building a new type of relationship between a retailer and consumers can help narrow the gap in the current literature.

Regarding satisfaction, social media, and knowledge sharing, this research examines the impact of s-commerce as consumers shift from the traditional organisational environment to an online community environment (Sharratt and Usoro, 2003). The fundamental needs of both environments are different, as the outcome of traditional knowledge sharing is more formal and driven by the organisation's ultimate goal (Kankanhalli et al., 2005; Wasko and Faraj, 2005), whereas the online community is driven by personal benefits (Davenport and Prusak, 1998; Alavi and Leidner, 2001; Lin et al., 2009).

To date, little research has examined the online social shopping environment and its impact on consumers' behaviour in terms of the intention to purchase. This study employ quantitative method approach to investigate the impact of s-commerce serves the purpose of this research study.

1.4. Research Aim and Objectives

This research aims to investigate the factors that contribute to consumers' intention to make purchasesvia s-commerce sites by exploring their usage experience with mobile devices, their satisfaction toward shopping on s-commerce sites, their s-commerce usage experience, and their intention to share knowledge.

The objectives of the study are as follows:

1. To develop a research framework to examine the factors contributing to consumers' intentions to make purchases on s-commerce sites using their smart mobile devices.
2. To examine the influence of smart mobile device usage experience on consumers' s-commerce site satisfaction, intention to share knowledge, and s-commerce site usage experience.
3. To examine how consumers' s-commerce site satisfaction, intention to share knowledge, and s-commerce site usage experience affect their intention to make purchases on s-commerce sites.
4. To examine the ability of users'usage experience with s-commerce sites to mediate the relationships between consumers' intention to share knowledge and their purchase intentions and between consumers' satisfaction withs-commerce sites and their purchase intentions.

1.5. Research Methodology

The methodology for this study is primarily quantitative in nature. In order to investigate the conceptual framework and mediation behaviour of online social media and networks through s-commerce, this study adopts Davis's (1989) modified TAM and adds other constructs to suit the modern online shopping environment. The quantitative method was conducted to measure and test any relationships between mobile commerce usage experience, social commerce usage experience, satisfaction, or knowledge sharingand consumers' intention to purchase. To enhance the response rate, an on-site survey method was used to collect the main study data. A total of 498 responses were collected, and statistical analysis – including exploratory factor analysis (EFA), confirmatory factor analysis (CFA), and structural equation modelling (SEM) – was conducted using SPSS and AMOS.

1.6. Structure of the Thesis

This thesis is organised into7 chapters.

Chapter one is the introductory chapter, which sets the background of the research. It justifies the reasonsfor conducting this study and covers gaps in the literature, this study's research aim and objectives, and its methodology, presenting an overall layout of the thesis.

Chapter two provides an overview of the existing literature and theoretical background, beginning with an introduction to the origins and growth of electronic commerce and its subset platforms. The second part of this chapter underlines the existing theoretical models and related theories to develop the framework for this thesis.

Chapter three outlines the conceptual framework for this study based on chapter two. The aim of this chapter is to identify the major variables affecting consumers' intention to purchase and to present relationships between major constructs to ultimately formulate hypotheses.

Chapter four builds on chapter three by outlining the research methodology chosen to achieve the objectives of the thesis. It includes an explanation of the research philosophy, data collection methods, and chosen statistical analyses.

Chapter five discusses the results of the data analyses using SEM results. The statistical analyses includethe final model fit for the proposed framework and the hypotheses test results.

Chapter six provides a discussion of the results and managerial implications of this study.

Chapter sevendraws conclusions on the results of the research. It also presents the limitations of the study and suggests an agenda for future research. Figure 1 illustrates the structure of the thesis.

| **Chapter One** |
| **Introduction to the Study** |

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| **Chapter Two** |
| **Literature Review** |

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| **Chapter Three** |
| **Conceptual Framework** |

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| **Chapter Four** |
| **Research Methodology** |

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| **Chapter Five** |
| **Data Analysis and Results** |

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| **Chapter Six** |
| **Discussion and Managerial Implication** |

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| **Chapter Seven** |
| **Conclusion, Limitation and Future Research** |
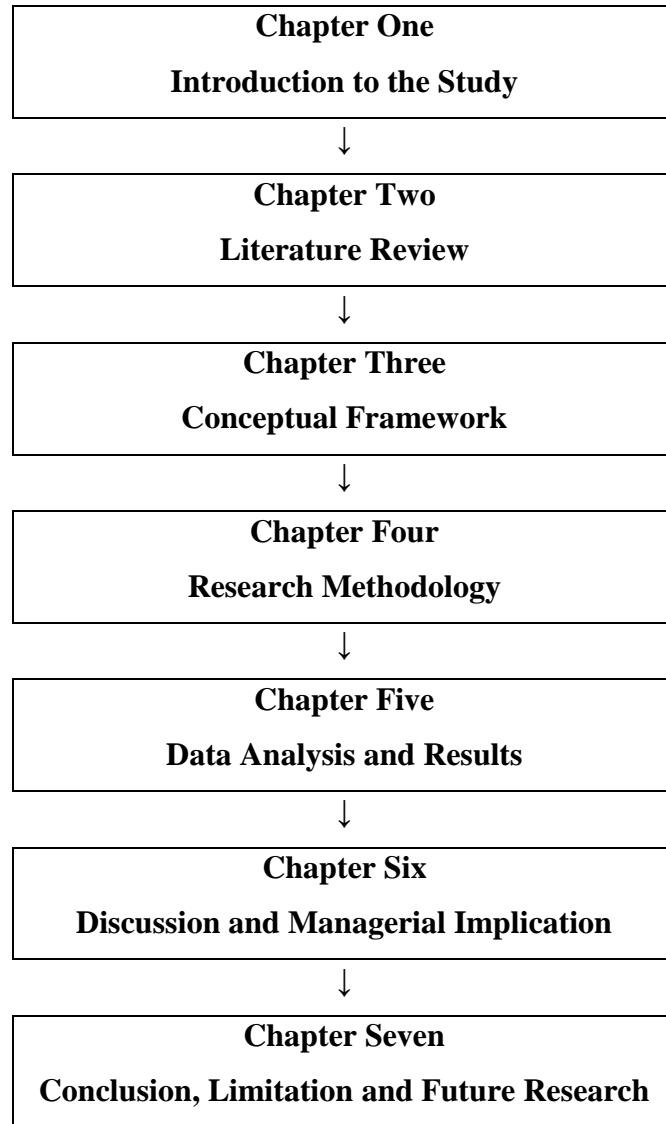
Figure 1.Structure of the Thesis

Chapter 2 Literature Review

2.1. Introduction

This chapter begins a review of the literature that underpins this study. First, the definitions of e-commerce, m-commerce, s-commerce, online social network site development and social media use are introduced. Then, knowledge management,knowledge sharing, and satisfaction are introduced. In the second section, overview of theoretical background and frameworks are explained. The following section illustrates theoretically relevant concepts of consumer behaviours, attitudes and intentions to purchase.

2.2. Electronic Commerce

In 2002, Peter Drucker forecasted the future impact of e-commerce (electronic commerce) in his book,*Managing in the Next Society*:*"The truly revolutionary impact of the Internet Revolution is… e-commerce –that is, the explosive emergence of the Internet as a major, perhaps eventually the major, worldwide distribution channel for goods, for services, and, surprisingly, for managerial and professional jobs. This is profoundly changing economics, markets and industry structure, products and services and their flow; consumer segmentation, consumer values and consumer behaviour; jobs and labour markets. But the impact may be even greater on societies and politics, and above all, on the way we see the world and ourselves in it"* (Drucker, 2002, pp. 3-4). E-commerce, a broadly used term in modern days, refers to a number of subset platforms and technologies, such as m-commerce, s-commerce, Internet marketing, online transaction processing, and electronic data interchange. The impact of e-commerce is significant, given the rise of mobile and s-commerce as subset platforms (Turban et al., 2012).

While it is based on modern technology and concepts, e-commerce dates back more than a half century, to the 1948 Berlin airlift: the first known attempt to exchange document data from one computer to another, that is,the first electronic data interchange (EDI) (Turban et al., 2002). Modern e-commerce evolved from its EDI originsthrough the establishment of the Internet in 1993.

Zwass (1996, p.3) stated, "*Traditional e-commerce, conducted with the use of information technologies centering on electronic data interchange over proprietary value-added network, is rapidly moving to the internet*".The Internet has become a prime driver of e-commerce, including a) computer networking and telecommunications; b) client/server computing; c) multimedia; d) information retrieval systems; e) electronic data exchange; f) message handling and workflow management systems; g) groupware and electronic meeting systems; and h) public key cryptography (Zwass, 1996).

Grandon and Pearson (2004) suggested that e-commerce is "*the process of buying and selling products or services using electronic data transmission via the Internet and the world wide web*" (p. 197) and that it benefits both the seller and the buyer, as sellers have access to specific target market segments on a global stage and buyers have access to more sellers with greater product availability at reduced costs. E-commerce provides more benefits because it includes any consumer-to-business (C2B) or B2C information transaction, including consumer e-mails and enquiries (Chaffey et al., 2009). Kraemer et al. (2005) further defined e-commerce by attributing to it a wide range of functions, such as serving customers online, collaborating with business partners to exchange business information and executing transactions over an electronic network. Based on the previous literature, e-commerce can be defined in this study as "any transaction activity of buying, selling, or transferring a product, service, and/or information using the Internet" (Grandon and Pearson, 2004, p.197).

Broadly, e-commerce includes any economic activity that is conducted electronically (Wigand, 1997) and involves new types of relationships between buyers and sellers, (Zwass, 1996) organisational units, and technologies (Turban et al., 2012). As e-commerce became a platform that is open to all users, the global use of e-commerce resulted in the creation of markets with flexibility and efficiency (Zwass, 1996). Turban et al. (2012) created a framework (Figure 1) to explain the structure and applications of e-commerce.

Electronic Commerce Applications
• Direct Marketing • Search Jobs • Online Banking
• E-government • E-purchasing • B2B Exchanges • C-commerce • Social Commerce
• E-learning • M-commerce • Auctions • Travel • Online Publishing • Consumer Services • Collaboration 2.0

People:
Buyers, Sellers, Intermediaries, Service, IS People, and Management

Public Policy:
Taxes, Legal, Privacy Issues, Regulations, Compliance, and Technical Standards

Marketing and Advertisement:
Market Research, Promotions, Web Content, and Targeted Marketing

Support Services:
Order Fulfillment, Logistics, Payments, Content, and Security System Development

Business Partnerships:
Affiliate Programs, Joint Ventures, Exchanges, E-marketplaces, and Consortia

Support Services

(1) Common business services infrastructure (security, smart cards/authentication, electronic payments, directories/catalogs, hardware, peripherals)

(2) Messaging and information distribution infrastructure (EDI, e-mail, hypertext transfer protocol, chat rooms) Web 2.0 tools

(3) Multimedia content and network publishing infrastructure (HTML, JAVA, XML, VRML)

(4) Network infrastructure (telecom, cable TV wireless, Internet, VAN, WAN, LAN, intranet, extranet) access, Wi-Fi, WiMax (cell phones)

(5) Interfacing infrastructure (with databases, business partners applications, Web Services, ERP)

Infrastructure

Management

Adapted from Turban et al. 2012 p. 41

Figure 2: A Framework of Electronic Commerce

As shown in Figure 2, e-commerce applications include various applications ranging from direct marketing, e-government, e-learning to consumer services applications. To execute these e-commerce applications, the correct information and support services must in place in order to act as a pillar of the structure. The e-commerce infrastructure is shown at the bottom of the framework. Infrastructure includes the hardware, software, and networks used in e-commerce. All five components require good management practices to build a sturdy foundation for the framework.

2.2.1. Consumers' attitudes towards e-commerce

E-commerce provides potential benefits, convenience and personally tailored services to individual consumers, maximising vendors' ability to increase productivity while decreasing transaction costs (Turban et al., 2012). Consumers have become smart consumers as a result of adopting new technology, such as the use of online websites or mobile applications to receive special offers and make purchases. E-commerce is now the preferred shopping method for a variety of products (Laudon and Traver (2016). Consumers' adoption and usage of technology influenced online retailing behaviour by adjusting ease of use functions, such as rapid presentation, uncluttered screens and simple search paths, resulting in enhanced attitudes toward online shopping, online purchase intentions and consumers' greater satisfaction with the shopping experience (Liu and Arnett, 2000). Online shopping gradually transformed from a novelty into a routine shopping method, and it may become substitute for conventional retailing channels (Yoo and Donthu, 2001). The growth of online shopping has created a powerful new rival to traditional retailers. In the US, department stores such as Sears and Kmart announced store closures and job cuts in 2017 after losingthe ability to continue operating against online competitors (Silverman et al., 2017). Consumers are shifting toward having positive attitudes toward online markets, which provide ease of use functions, competitive or cheaper prices, and higher-quality products (Business Insider.com).

2.2.2. Consumers' preference shift to e-commerce

Traditional offline retailers have adapted to the needs of smart consumers by establishing online sales platforms and competing both on and offline. Laudon and Traver (2016) listed eight unique features of e-commerce that explain why consumers' shift toward e-commerce is imminent.

2.2.2.1. Ubiquity

In traditional commerce, in order to transact, retailers must be present at a physical place that a consumer can visit. E-commerce, in contrast, provides a ubiquitous function because it is available regardless of time and place. This format liberates the consumer from the limitations of the physical market, which is restricted by opening

hours, and enables shopping from anywhere at any time the consumer wants to make a purchase. This ubiquity reduces transaction costs for consumers because they need to make fewer visits to the retailer's shop, travelling costs, and effort. Furthermore, e-commerce lowers cognitive energy. Humans generally seek to reduce cognitive energy (Shapiro and Varian, 1999), that is, the mental effort required to complete a task (Laudon and Traver, 2016).

2.2.2.2. Global Reach

Traditional commerce is local or regional. Transactions involve local or national merchants and occur through retailers. In contrast, e-commerce permits commercial transactions to cross cultural, regional and national boundaries far more conveniently. Laudon and Traver (2016) used e-Marketer's reports and data and added that the size of the e-commerce market is much larger than the traditional local or national markets, as the potential market size of e-commerce is equal to the size of the global online population.

2.2.2.3. Universal Standards

E-commerce assumes individual online consumers worldwide, lowering boundaries across cultures, regions and nations. It has created a single, global market platform by allowing firms to use unified regulations to enable online transactions worldwide. Laudon and Traver (2016) suggested that a unified global market benefits both the retailer and the consumer by lowering market entry costs and search costs. Retailers only have to pay the cost of bringing the goods to market,while consumers spend less effort finding a product that suits their needs.

2.2.2.4. Richness

Information richness refers to a message's complexity and content (Evans and Wurster, 1999). Consumers are used to receiving information through media advertising, such as television, radio, printed materials and salespeople. Although the traditional market has great richness of information, e-commerce platforms have the potential to offer considerably more information richness. The e-commerce platform

managed to break the golden rule of the trade-off between richness and reach (as the size of the audience reached increases, the richness of the message decreases) by achieving a larger audience with rich information.

2.2.2.5. Interactivity

Internet, e-commerce and social network platforms allow for highly interactive communication between retailers and consumers. Traditional communication methods were one-way and linear. Consumers could only receive what retailers created and tailored to deliver through mass media channels. In contrast, e-commerce involves two-way communication and accordingly allows for interaction between retailers and consumers. Social networks and the media enhance the opportunity for consumers to interact though their preferred platforms, such as Twitter, Facebook and other online forums and communities (Laudon and Traver, 2016).

2.2.2.6. Information Density

E-commerce platforms shifted information density, that is, the total amount and quality of information available on the market. E-commerce technology reduces the costs of information collection, storage, processing and communication. At the same time, it greatly increases the currency and accuracy of information. On e-commerce platforms, information is more plentiful, less expensive and of higher quality. Sinha (2000) explained that in e-commerce, consumers can find a variety of price ranges on the market and, furthermore, even the actual costs vendors pay for goods. At the same time, online retailers benefit from information about their consumers; they can create segmentation strategies for various target audiences within consumer groups. Retailers can target each group using differentiated strategies – either premium or price driven (lower cost) – to boost their online sales (Laudon and Traver, 2016).

2.2.2.7. Personalisation

E-commerce platforms allow firms to direct their marketing messages to specific individuals by tailoring messages to an individual's name, appeals and previous purchases (Laudon and Traver, 2016). This particular strategy is widely used in

various online shopping channels, from electronic products to daily grocery products, such as Amazon.com, Currys, Waitrose and Tesco. The technology also allows customisation based on the user's preferences, interests, previous behaviours and search history, whichis convenient for individuals, allowing them to save time and effort when they search online stores and make transactions by avoiding unnecessary information. Turban et al. (2009) explained that personalisation and customisation are key factors of retaining and attracting potential customers.

2.2.2.8. Social Networks

Online social networks add a new paradigm to e-commerce. As mentioned in terms of interactivity, social networks allow consumers to create user-generated content and to share information throughout the online community worldwide. The advertising and spread of information and sending two-way communications has created a unique many-to-many communication model. Participants are more willing to engage in e-commerce through interactive social networks (online social networking is discussed further in section 2.5.).

2.3. M-Commerce

M-commerce is a subset and extension of e-commerce (Turban et al., 2012) in which product purchase behaviour and technology use have shifted to mobile devices (Yeh and Li, 2009) that use wireless networks, such as smartphones and tablets. Turban et al. (2012) defined m-commerce as any business activity conducted over a wireless telecommunication network, including B2C and B2B commercial transactions, as well as the transfer of information and services. Chong et al. (2012, p.36) stated, "*m-commerce is an extension of e-commerce, whereby the transactions of businesses are conducted in a mobile environment using mobile devices*". Barnes (2002, p.92) defined m-commerce as "*any transactions, either direct or indirect, with a monetary value implemented via a wireless telecommunication network*". Based on previous literatures, m-commerce can be defined in this study as "any business activity conducted over a wireless telecommunication network using smart mobile devices" (Barnes, 2002, p. 92).

Consumers are driven to use m-commerce because it provides convenient functions, such as the delivery of electronic commerce capabilities directly into the consumer's hand via wireless technology, allows access to information, anytime, anywhere, and enables consumers to participate in online shopping through traditional web pages and new application-based channels (Yang, 2010).

Although m-commerce is viewed as subset of e-commerce, differentiation occurs in the mode of communication, type of Internet-enabled devices, and tools (Coursaris and Hassanein, 2002; Little, 2001). The development of technology has shifted consumers' activities from traditional e-commerce to m-commerce. Multimedia technology and innovations have turned mobile phones into smart mobile phones that have the majority of a computer's functions (Aldás-Manzanoet al., 2009). Little (2001) noted differences between e-commerce and m-commerce in four areas: communication mode; Internet-enabled devices; development of language and communication protocols; and enabling technologies. Internet-enabled devices have shifted from PCs to mobile phones and tablets. The development of language and communication protocols has introduced additional technological issues. PCs use Hyper Text Transfer Protocol (HTTP) and Hyper Text Mark-up Language (HTML), whereas wireless devices use Wireless Application Protocol (WAP).

Finally, enabling technologies deal with webpages within the Internet (JAVA and Active Server Pages), which had compatibility problems early on, but with the adoption of applications and development, wireless technology has adapted to reach the same level as PCs (Little, 2001). Coursaris and Hassanein (2002) adopted the definitions of m-commerce from Turban et al. (2002) to clarify and illustrate the role that contributes to the overall process in Figure 2.

Mintel's UK e-commerce (2014c) survey results show that 45% of respondents have made purchases from online retailers through mobile devices. This report expects online sales to reach £38.3 billion in 2014 and suggests that mobile devices such as smartphones and tablets contributed to this significant growth. Aldás-Manzanoet al. (2009) found that the consumer's familiarity and comfort with a mobile device and its applications are likely to encourage purchases. Turban et al. (2009) used data sources to predict that retail m-commerce in the UK will grow at a rate of 30% annually until 2019 (Laudon and Traver, 2016).

M-commerce originally focused primarily on digital and technical goods, such as music products, including streaming, videos, games and e-books. The rapid growth of the m-commerce market (Ngai and Gunasekaran, 2007) has revolutionised the business world by providing additional value to hard-to-reach end consumers (Siau et al., 2001). Consumers are driven by easy access to information, immediate purchase opportunities, and cheaper prices through vouchers, coupons, and/or promotions (Siau et al., 2001).

Consumers are increasingly multi-tasking with mobile devices, such as searching for people, places and things, as well as shopping. Mobile platforms attract both consumers and retailers with various benefits. Consumers are more driven by convenience, ease of use and ubiquity, whereas retailers find it easier and cheaper to advertise and engage with consumers through mobile platforms. Retailers are spending less than vendors in traditional market settings but are achieving a larger audience within their target segmentation (Laudon and Traver, 2016). Coursaris and Hassanein (2002) used value chains (Figure 3) to describe the highly fragmented m-commerce industry and how each party contributes to the overall m-commerce process in serial manner.

Research by Aldás-Manzanoet al. (2009) found that as the consumer's affinity with their mobile phone increases, their likelihood to purchase products using their smart mobile devices increases. However, a consumer who uses their mobile device primarily to contact people through calls and texts will be considered a minimal or very light user of m-commerce.

Aldás-Manzanoet al. (2009) suggested that retailers that use m-commerce applications or platforms as part of their multi-channel marketing strategy should offer more value, service and content to consumers/users than traditional/offline retail stores. This strategy will encourage consumers to use their mobile devices more often to visit the retailer and make purchases, thereby encouraging mobile shopping.

Technology Platform Vendors
↓
Infrastructure and Equipment Vendors
↓
Application Platform Vendors
↓
Application Developers
↓
Content Providers
↓
Content Aggregators
↓
Mobile Portal Providers
↓
Mobile Network Operators
↓
Mobile Service Providers
↓
Handset Vendors
↓
Customers
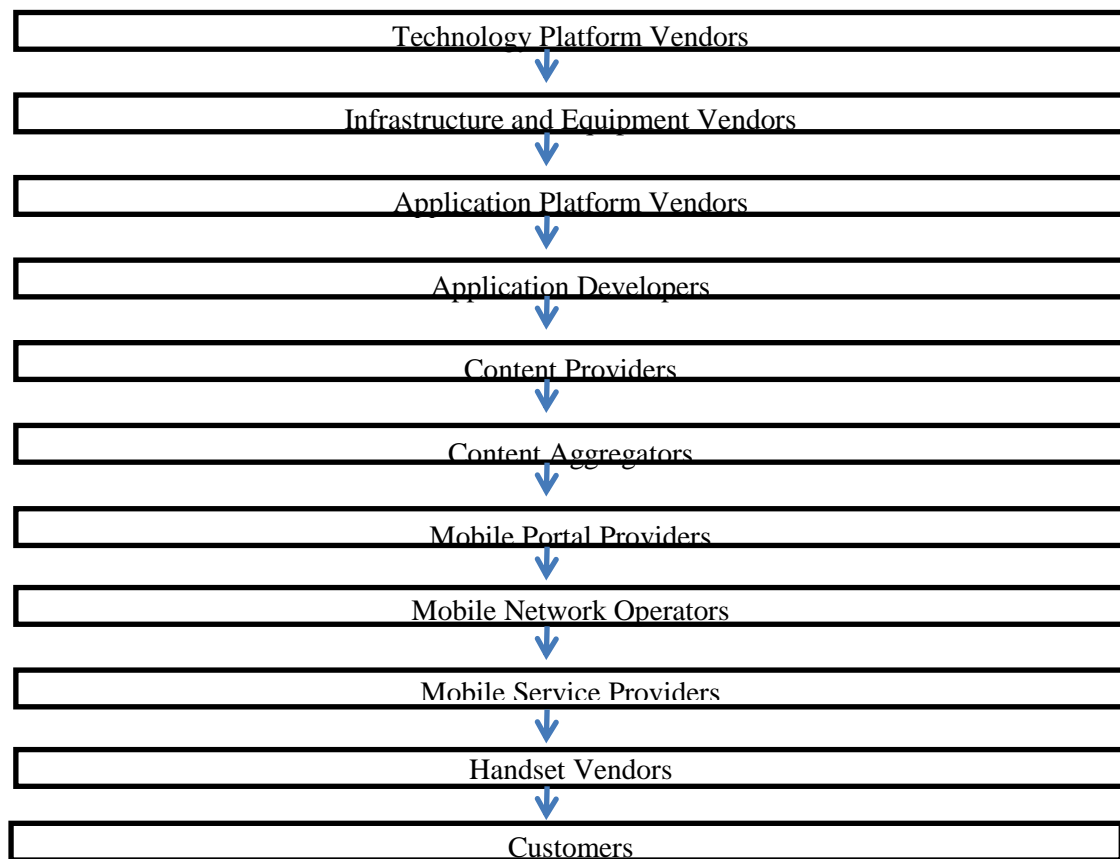
Adopted fromCoursaris and Hassanein (2002, p.8).

Figure 3: M-Commerce Value Chain

2.3.1. Mobile technology

Mobile technology can connect all devices that permit communication and exchange data with other individuals or systems, regardless of the time or place (Lim, 2008). The technology of mobile devices matches that of personal computers and allows consumers to access the Internet for any information they might seek (Aldás-Manzanoet al.,2009). Varshney and Vetter (2002, p.187) summarised the use of mobile technology applications in Table 1.Aldás-Manzanoet al. (2009) suggested that retailers that use m-commerce platforms as additional channels should offer more value and services to attract more consumers through mobile devices and to further enhance users' mobile shopping experience. Consumers are more driven to participate due to better services provided by retailers and better mobile shopping experiences, especially when they can save time and money as a result of various promotions (Yang, 2010). The characteristics of mobile technology and m-commerce can directly affect both the perceived ease of use and the perceived usefulness (Kim et al., 2010). The exponential growth of wireless and mobile networks has had a significant influence on m-commerce through mobile devices.

Table 1: Use of Mobile Technology Applications

Class of applications	Details	Examples
Mobile financial applications (B2C, B2B)	Applications where mobile device becomes a powerful financial medium	Banking, brokerage, and payments for mobile users
Mobile advertising (B2C)	Applications turning the wireless infrastructure and devices into a powerful marketing medium	User specific and location sensitive advertisements
Mobile inventory management (B2C, B2B)/	Applications attempting to reduce the amount of inventory needed by managing in-house and Inventory-on-move.	Location tracking of goods, boxes, troops, and people.
Product locating and shopping (B2C, B2B)	Applications helping to find the location of product and services that are needed	Finding the location of a new/used car of certain model, colour and features
Proactive service management (B2C, B2B)	Applications attempting to provide users information on services they will need in very-near-future	Transmission of information related to aging (automobile) components to vendors
Wireless re-engineering (B2C, B2B)	Applications that focus on improving the quality of business services using mobile devices and wireless infrastructure	Instant claim-payments by insurance companies
Mobile auction or reverse auction (B2C, B2B)	Applications allowing users to buy or sell certain items using multicast support of wireless infrastructure	Airlines competing to buy a landing time slot during runway congestion
Mobile entertainment services and games (B2C)	Applications providing the entertainment services to users on per event or subscription basis	Video-on-demand, audio-on-demand, and interactive games
Mobile office (B2C)	Applications providing the complete office environment to mobile users anywhere any time	Working from traffic jams, airport, and conferences
Mobile distance education (B2C)	Applications extending distance/virtual education support for mobile users everywhere	Taking a class using streaming audio and video
Wireless data centre (B2C, B2B)	Applications supporting large amount of stored data to be made available to mobile users for making "intelligent" decisions	Detailed information on one or more products can be downloaded by vendors

Adapted from Varshney and Vetter (2002, p.187).

2.3.2. Mobile consumer personalisation

Chae and Kim (2003) emphasized the role of the personalisation of mobile devices. Typically, a mobile phone is a single device in an individual's possession rather than a communal device, such as a computer in a household or at a workstation. Mobile phones – especially smartphones –can be personalised by an individual through downloading applications to fit the person's needs and services, including saving necessary personal information to an application.

Mobile device users are targeted by retailers using location-based m-commerce (Broeklemann, 2010). Location-based m-commerce is the delivery of m-commerce transactions to individuals in a specific location at a specific time (Turban et al., 2012) and includes GPS technology. Retailers can pinpoint individual consumers' needs and personalise their products and services to attract potential consumers (Yang, 2010).

Chang et al. (2009) addressed ideal smartphone features. Some of the key features that consumers seek and are currently using include the following. The first is music players and mobile TV –smartphones currently provide various music players and live streaming through the Internet. This capability took a large share of the MP3 market by pushing out various other music products, as consumers no longer needed an extra device to listen to music. The next feature is GPS and navigation functions. The majority of smartphones provide Google Maps and GPS as basic functions and include them with other applications. It appears that smartphones have conquered yet another industry. GPS functions provide every possible option for transportation, including walking, driving and the use of public transportation around the globe, in local languages and in English (Chang et al., 2009). The combination of technology development and the use of the Internet have made the above functions and advanced camera settings default specifications of smartphones.

2.3.3. M-Commerce characteristics

Yang (2004) proposed a conceptual framework for research and has empirically tested the relationship between m-commerce characteristics, perceived usefulness, perceived ease of use and attitude. The characteristics used in Yang's (2004) research are "*innovativeness, past adoption behaviour, knowledge, technology cluster, age, gender and specialization*".Kim et al. (2010) proposed a similar conceptual framework and

empirically tested it, finding that mobility, reachability, compatibility and convenience are the key characteristics of mobile payment and m-commerce.

2.4. Online Social Interaction

Computer-mediated social interaction began in the early stages of interlinked networks. Computers became networked through the development of the Bulletin Board System (BBS) in 1978 (Gilbertson, 2010), which was limited to simple text-based communication. The subsequent evolutions of Internet-based communication through technological development included Usenet, discussion platforms, chat rooms, forums, discussion boards and communities. In 2013, more than half of adult Internet users in the UK were active on social networks or media platforms (Dutton et al., 2013, p.39), while the Mintel report shows that in 2016, 81% of Internet users in the UK accessed social networks (Mintel, 2016c). These users – who are of a significant number – were attracted to online social network platforms because they have progressively integrated more media content and live streaming.

The establishment of Web2.0 enabled complex online interaction and allowed individual users to produce and consume content. Platforms such as Facebook, Flickr and MySpacepermit users to share statuses, photos, music and video content, Blogger and LiveJournal enable individuals to present their creative thoughts in context, YouTube provides a platform for users to create and share video content, and Twitter allows individuals to post limited-character messages to share their thoughts.

2.4.1. The Internet and computer-mediated communication

Michael Strangelove (1994) predicted the impact of the Internet in the early period of the computer development era, focusing on users who create communities in the virtual environment, currently, theonline environment.

> *The Internet is not about technology, it is not about information, it is about communication, people talking with each other, people exchanging e-mail…. The Internet is mass participation in fully bi-directional, uncensored mass communication. Communication is the basis, the foundation, the radical*

ground and root upon which all community stands, grows, and thrives. The Internet is a community of chronic communicators. (Strangelove, 1994, p.11)

Because the Internet enables communication through a computer-mediated environment, individual users have access to a mass audience. Watt et al. (2002) raised concerns about the security and safety of Internet-based communication and added that social psychology has generally presented computer-mediated communication as being less social then traditional face-to-face interaction.

2.4.2. Online community

What is the online community? The word "online" refers to being "*controlled by or connected to a computer*" (Oxford dictionary, 2016), even though it is now more commonly used to mean being connected to the Internet via smart mobile and/or computer devices. The term "community" is commonly used to refer to geographical proximity and face-to-face relationships. Zou and Park (2011, p.5) defined community as "*a constructed arena where multiple people with shared interests interact with each other*", whereas Bhattacharya and Sen (2004, p.12) definedit as a "*social configuration that possesses shared identity and norms*". According to these studies, communities are formed by groups of individuals who share similar interests and share social interactions. The establishment of the Internet and the development of technology have enabled individuals to create so-called online communities that transcend place and time. These so-called online communities provide attractive functions to individuals, allowing them to connect, communicate and build social relationships by removing and reducing the geographical constraints of a traditional community environment (Kang et al., 2006).

The terms "*virtual community*" and "*online community*" are often used interchangeably by scholars in academic literature. Even though the two terms have distinctively different meanings, this research decided to define both as a "*community through an Internet-based platform*", and henceforth, an "*online community*".

Rheingold (2000) suggested that online communities provide a broader opportunity for users to make friends and connections. Online communities enable users to establish a more narrowly defined group of fellow users to form a community,

conveniently enabling particular users to congregate based on similar interests. According to Ridings et al. (2002), traditional communities tend to depend on location and social relationships between members who are generally tied to the same regions, whereas online communities provide access regardless of location and time. Rheingold (2000) shared the following view of online group interaction:

> *In a virtual community we can go directly to the place where our favourite subjects are being discussed, then get acquainted with people who share our passions or who use words in a way we find attractive…. Your chances of making friends are magnified by orders of magnitude over the old methods of finding a peer group.* (Rheingold, 2000, pp. 11-12)

Ridings et al. (2002, p.273) defined online communities as "*groups of people with common interests and practices that communicate regularly and for some duration in an organised way over the Internet through a common location or mechanism*". Chiu et al. (2006, p.1873) added to that definition: "*Online communities are networks in which people with common interests, goals, or practices interact to exchange information and knowledge, and engage in social interactions*". Both definitions suggest that online communities are groups of people who share common interests and exchange information and knowledge. This research adapts the characteristics and definitions of online communities, as identified by Lee et al. (2003, p.51). The four characteristics are (1) cyberspace; (2) computer-based information technology; (3) communication and interaction as the main focus and content or topics of virtual community driven by the participants; and (4) relationships built after communicating. Online communities have evolved alongside other platforms, such as social networking sites (SNS), discussion forums and social media platforms.

2.4.2.1. The Role of Online Communities

In simple terms, online communities have two types of users: contributors (Hooff and Ridder, 2004) and seekers (Wang and Fesenmaier, 2004). Contributors are individuals who share information, opinions and experiences and respond to other community

members' questions or requests; seekers are those who search for needed information, browse or ask other members in the online community.

Kim (2000) examined the role of online community members and identified five types of community members from two online communities: (1) visitors; (2) novices; (3) regulars; (4) leaders; and (5) elders. Visitors are those who have no membership, who quickly browsesthrough the community and who have no connection or ties to the community. Novices are recent members of the community and need to learn about community regulations, culture and environment. Regulars would like to become key members of the community and participate frequently in community activities. Leaders are members who voluntarily run the community and have knowledge about it. Elders are considered to be regulars and leaders who share their knowledge to make the community lively and active (Kim, 2000). In practice, many online communities have different ranking systems to distinguish participants' levels and provide different functions accordingly. Additionally, Phang et al. (2009) found that knowledge contributors and seekers were significantly influenced by perceived sociability and usability. Usability is concerned primarily with users' interactions with technology, such as the ease of use and acceptance of technology. Sociability refers to the characteristics of an online community that make users' interactions with each other pleasant. Phang et al. (2009, p.728) noted the "*concept of sociality in online social networks that focuses on how actors relate to each other to organize their social practices and construe their identities, with the common purpose (e.g., knowledge sharing) being highlighted in sociability*". Sociability is particularly important for knowledge sharing in the computer-mediated online environment because users must feel comfort and trust in order to share knowledge and learn from each other (Phang et al., 2009). SNSallow users to create a trustworthy environment to connect, communicate and share knowledge among the group.

2.5. Social Commerce
The concept of s-commercesurfaced in the research literature in 2005. In s-commerce, Web 2.0 applications and social media facilitate interactions among individuals in online communities and social networks to support consumers' acquisition of products and services (Laudon and Traver, 2016). S-commerce consumers are allowed and encouraged to create content, which makes these platforms more user-

centric (Curty and Zhang, 2011). The popularity of social technologies and platforms such as SNShas been a driving force of the rise of s-commerce since its first appearance (Hajli, 2015).

Laudon and Traver (2016, p.59) defined s-commerce as "*e-commerce that is enabled by social networks and online social relationships*". Kim and Park (2013, p.319) defined s-commerce as "*a new business model of e-commerce driven by social media that facilitates the purchasing and selling of various products and services*". Liang and Turban (2011, p.6) suggested, "*Social commerce generally refers to the delivery of e-commerce activities and transactions via the social media environment, mostly in social networks and by using Web2.0 software*". In their research, Liang and Turban (2011) provided 22 definitions of s-commerce, with detailed subset properties; a majority of the definitions overlap in terms of fundamental knowledge and concepts: social media technologies, community interactions and commercial activities. Kim (2013) addressed previous literature on the practice of s-commerce, including such topics as buyer communities, group buying, purchase sharing, and social advice (Cavazza, 2012). Based on the previous literature, this research defines s-commerce as a "new stream and subset of e-commerce, which enables consumers to communicate and generate contents through use of social media".

Although s-commerce is subset of a e-commerce, the two platform types differ in many business and IT aspects, including motives, business and value creation models, challenges and issues, technologies, modes of interaction and communication, and platform design. The differences between e-commerce and s-commerce have been summarised in Table 2.

Table 2: The Differences between E-commerce and S-commerce

Perspective	Aspects	E-commerce	S-commerce
Business	Value creation and value chain	The design of the architecture that creates value and the corresponding coordination mechanisms is limited to the enterprise and / or its partners	New business values through user's attention
	Business models	Traditional business models	Value through participation and collaboration of large actors with rewarding motivation
		The architecture of the products or services and the modelling and design of the business processes are limited to the enterprise and / or its partners	Newer technologies, supporting social interactions, enable new business models, where many actors participate in the elaboration of the architecture of the products / services and the modelling and design of the business processes Business models are more and more social and customer oriented Group buying, social wish-list
Technology	Infrastructure and platform	Web 1.0 Web application	Web 2.0 Cloud computing Big data, mobile computing
Design	Building blocks and elements of design	Content, Structure, and Navigation	Individual, interactions, and community in addition to content, structure, and navigation
	Customer connection / communic-ation/ conversation	Content: Characteristics of the products / services, shopping cart, and to less extent customer profiles	User centred design, through interactive interface that enables identity, interactions, and communities

Design		Structure: Designed around the products / service and the shopping cart	User created / shared contents
		Navigation: use of discovery mechanisms such as links, search, and browsing	Social features: ●Rate/Rank/Recommended/ Review/Comment ●Search/Link/Author/Tag/Ext end/Signal ●Other common features such as Like/Share/Follow
		Shopping cart	Discovery mechanisms: search and browsing
	System interactions	The browsing is one-way	More social and interactive approaches that let customers express themselves and share their information related to a context with other customers as well as with the enterprise
		One way creation of content: from business to consumers	Community creation / sharing content related to a context
			Forums, blogs, and wikis

Adopted from Baghdadi (2016, p.100)

E-commerce deals only with consumers as individuals, whereas s-commerce addresses the community of consumers (Baghdadi, 2016). In the early stages of s-commerce, consumers were often offered group-buying options to receive discounts as masspurchases (Kim, 2013). The evolution of s-commerce now offers a variety of options to individual consumers by eliminating bulk or group buying.

E-commerce is enabled by Web 1.0, in which communication is one-directional, whereas s-commerce is enabled by Web 2.0, which supports SNS and allows multi-directional communication.

In s-commerce, user perceptions, preferences, and decisions are influenced by the content generated by interactions through social media applications (Baghdadi, 2016), and consumers are more educated and better organised through participation in online communities. Advanced technology development improved security and payment

systems (Rad and Benyoucef, 2011). The development of s-commerce and consumers' technology adoption may create a shift in power from retailers to consumers.

Linda (2010) claimed that various factors, such as information quality, communication, and word-of-mouth (WOM) effects, could make s-commerce trustworthy because it includes user-generated content, such as customer ratings, reviews, recommendations and referrals (Stratmann, 2010). Stephen and Toubia (2010) found that s-commerce is a customer-driven marketplace with personalised stores connected through a network of sellers and consumers in an online environment.

Table 2 shows the differences between e-commerce and s-commerce, and Rad and Benyoucef (2011, p.64) stressed the importance of consumer-centric platforms. S-commerce refers to both a "*network of sellers*" and a "*network of buyers*", as described in Figure 4, which illustrates the transitions from e-commerce to s-commerce.
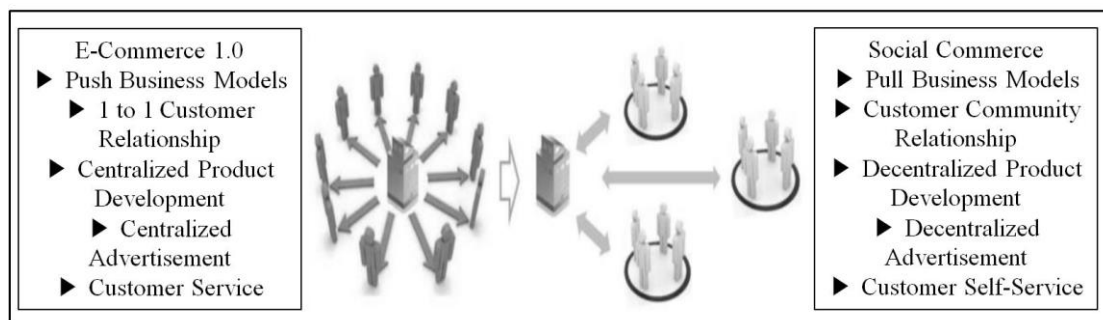
Adopted from Rad and Benyoucef (2011, p.73)

Figure 4: Transitions From E-Commerce to S-Commerce

Original e-commerce platforms provided mainly one-on-one relationships between a seller and a buyer and used a product-centric business model. S-commerce provides customer-centric platforms and products and uses Web 2.0 technology to create new shopping trendsin which customers leverage social networks to make more efficient and effective transactions (Rad and Benyousef, 2011).

However, s-commerce does not always have a positive impact on purchase intentions. Consumers' open access to negative reviews, feedback and stories of unpleasant experiences can discourage them from making purchases. Additionally, the "*minimalism*" trend from influential figures on social networks can compel consumers not to purchase (Rad and Benyousef, 2011). In s-commerce, consumers are more educated and their intention to purchase and decision-making process are much more complicated.

Curty and Zhang (2011) adopted s-commerce-correlated concepts from the previous literature and identified the most important characteristics of s-commerce as follows: a consumer-centric community (Leitner and Grechinig, 2008); crowdsourcing (Leitner and Grechinig, 2007; 2008); multichannel shopping (Leckner and Schlichter, 2005); revenue models (Leitner and Grechinig, 2008; Kang and Park, 2009); and user-generated content (Ghose and Ipeirotes, 2009). Cecere (2010) claimed that s-commerce makes use of various social technologies to allow customers to improve their shopping experience. S-commerce emerged from the integration of several fields, which are shown in Figure 5.
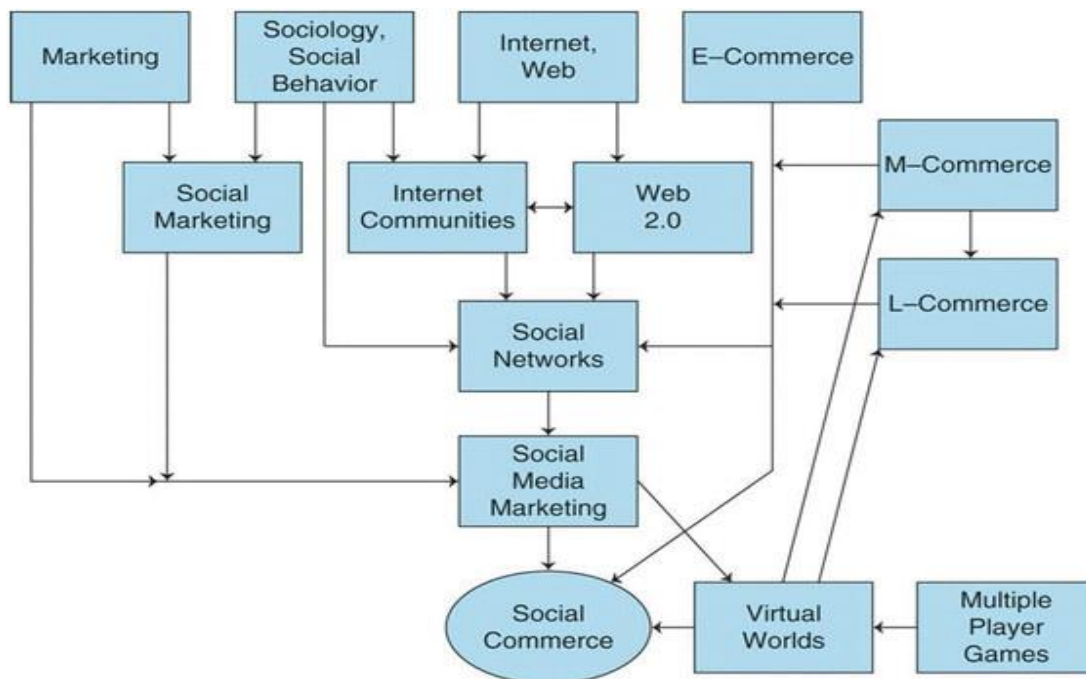
Adopted from Turban et al. (2012, p.339)

Figure 5: The Major Roots of S-Commerce

A major concept of s-commerce is e-commerce, which has m-commerce and l-commerce (location) as subset platforms. The development of Internet, Web 2.0 and Internet communities played an integral role in social networking's transition to social media marketing and s-commerce (Turban et al., 2012).

A consumer-centric community is "*a community which allows the use of the synergistic experience of crowds, characterized by intensive communication between potential customers and step by step aggregation of information about products, prices and deals*" (Curty and Zhang, 2011, p.2). This concept demonstrates the benefits of online social networking and communities by sharing knowledge between members and participants.

Crowdsourcing is the "*Combination of crowd and outsourcing [and was] coined by Jeff Howe in 2006 to represent the gap between professionals and amateurs, which has been diminished, and the importance of taking advantage of the talent of the public (the crowd)*" (Curty and Zhang, 2011, p.2).Crowdsourcing develops into crowdfunding, which has become a new trend for entrepreneurs in online communities and particular websites such as "*Kickstarter*". Participants receive information from the seller, who wishes to attract others to participate and invest funds in the project; these funds can be processed and the whole process tracked online.

User-generated content is "*The collection of content (comments, reviews, ratings) which represents the evaluation of online shopping experiences and consumers'/users' opinion about brand reputation as well as the tangible (product) and intangible (service) aspects of the shopping event*" (Curty and Zhang, 2011, p.2). This concept is often applied to discuss the people-based aspect,including individuals, consumers, communities and societies (Curty and Zhang, 2011).

2.5.1. Social media

Kaplan and Haenlein (2010, p.60) defined social media as "*a group of Internet-based applications that build on the ideological and technological foundations of Web2.0 and that allow the creation and exchange of User Generated Content*". Web 2.0 was designed to support new technology, such as mobile technology, social media and e-

commerce. Traditional e-commerce is based on Web 1.0, whereasWeb 2.0 is more collaborative and allows more interactive connections with users. Web 2.0 is considered more user-centric and encourages users to create content and context (Huang and Benyoucef, 2013). Huang and Benyoucef (2013, p.251) summarised the design principles of Web 2.0, which are illustrated in Table 3.

Table 3: Web 2.0 Design Principles

Design Principles	Characteristics	Business Objectives
Participation	User content creation	To encourage participants to generate content
	Information sharing	To motivate participants to share content
	Participation intensity	To allow participants to engage more often and on a continuous basis
	Incentives provision	To offer monetary and nonmonetary rewards based on participant performance
	Task creation	To enable participants to take on different roles, such as co-designer or co-creator
Conversation	Interaction	To encourage intense interaction among participants
	Communication	To build communication around topic
	Connection	To keep participants connected under both online and offline conditions
Community	Networking effects	To allow relationships to be established and a community to be built
	Collaboration	To provide collaboration among participants
System quality	Simplicity	To ensure simplicity in design and features
	Crowdsourcing	To foster open sources, open innovation and co-design
	User control	To provide control for participants over data

Adapted from Huang and Benyoucef (2013, p.251)

Safko and Brake (2009, p.6) suggested a more generalised definition of social media as "*activities, practises and behaviours among communities of people who gather online to share information, knowledge, and opinions using conversational media*".

Conversational media are Web-based applications that allow the creation and easy transmission oftext, picture, audio and video content.

Two particular definitions of social media (Kaplan and Haenlein, 2010 / Safko and Brake, 2009) indicate that social media terminology includes users' activities, practices and behaviours through social media platforms. In a recent definition, Hoffman et al. (2013, p.29) noted, "*Social media is the set of web-based and mobile tools and applications that allow people to create (consume) content that can be consumed (created) by others and which enables and facilitates connections*". Based on the previous literature, this study defines social media as "*applications, services, and systems that allow users to create (consume) content that can be consumed (created) by other users*" (Hoffman et al., 2013, p.29).

Consumers currently use various services – such as mobile applications and web-based communities and forums – to connect with other members. For example, travel agency websites (Expedia.co.uk), traditional travel company websites (ThomasCook.com), hotelwebsites (Hilton.com), all-in-one travel website (TripAdvisor), traditional media sites(BBC.co.uk), and online retailers allow user-generated content to be created and shared. These examples generally satisfy Kaplan and Haenlein's (2010) definition of user connections; more specifically, Safko and Brake (2009) referred to TripAdvisor as a platform that enables users to share information and opinions. The companies used as examples above provide user-created reviews and feedback,enabling and facilitating connections between users that satisfy Hoffman et al.'s (2013) definition.

Lang (2010) suggested that people spend more than one-third of their waking days consuming social media. Approximately 90% of American adults aged 18-29 years used social media in 2015 (Lau, 2017), and 24% of adolescents (13-17 years old) used it "almost constantly" (Lenhart, 2015, p.2). According to Forrester Research (Perez, 2017), Figure 6 illustrates that smartphone users in America spend 85% of their usage time in apps, and communication and social media apps account for the most time, with a combined 21% of all smartphone usage. Notably, as a category, social networks claim 14% of all smartphone usage,with Facebook alone taking 13%, followed by online search engine Google at 12%, and other big names, including

Amazon (3%), Apple (3%), Yahoo (2%), and Ebay (1%). In China, 77% of Internet users used social media and networks by the end of 2015 (Wei and Gao, 2016).
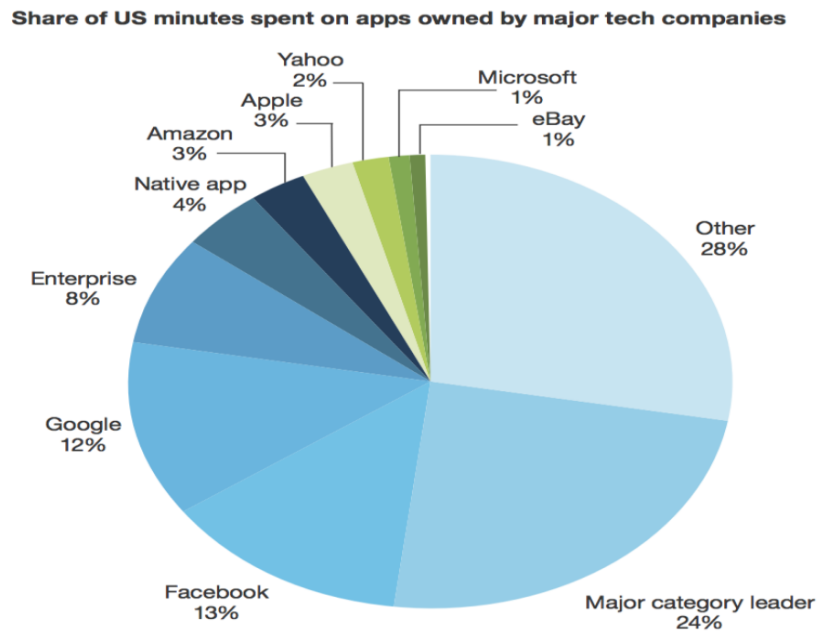
Adopted from Forrest Research, Perez (2017)

Figure 6: A Handful of Companies Dominate the Minutes Users Spend On Mobile Apps

Social media encompasses a wide variety of online, WOM, web blogs, user-generated sites such as YouTube, SNS such as Facebook or LinkedIn, and commerce communities. Table 4 shows examples of social media (Mangold and Faulds, 2009). Berthonet al. (2012) emphasised social media as a product of Internet-based allocations that build on the technological foundation of Web2.0.

In their research, Berthon et al. (2012) indicated that the establishment of Web 2.0 had several effects. First, Web 2.0 provided advanced mobile technology and convenience to users, causing a shift in the locus of activity from desktops to the Web. Second, Web2.0 shifted power from firms to consumers, as it provided a greater focus on consumers, shifting nodes to networks, publishing to participation, and intrusion to invitation. Many social media websites and platforms have been created, yet only a handful has survived over the years. The popularity of social media remains significant, and social media usage demonstrates exceptional growth year by year.

Mintel's report lists the social media platforms most frequently used in February 2014, with Facebook topping the list with 74% of usage, followed by YouTube, Twitter, Google+, LinkedIn, Instagram, Pinterest, Tumblr, Blogpost/Wordpress, MySpace and Path, respectively (Mintel report, 2014b).

By joining social media platforms, people fulfil their needs for belonging and for cognition with those who have shared norms, values and interests (Gangadharbhatla, 2008; Tardini and Cantoni, 2005). Previous research suggests that social network services meet a wide array of user needs, ranging from companionship and emotional support (Ellison et al., 2006; Joinson, 2008) to information sharing (Lampe et al., 2006). Users also use SNS to keep in touch with friends, update their statuses, follow events and maintain offline connections (Ellison et al.,2006; Stern and Taylor, 2007).

Table 4: Examples of Social Media

Type of Social Media	Examples
Social Networking Sites	MySpace, Facebook,
User sponsored blogs	Unofficial Apple Weblog, Cnet.com
Company sponsored websites/blogs	Apple.com, P&G's vocal point
Company sponsored cause / help sites	Dove's campaign for Real Beauty, Click2quit.com
Invitation only social networks	A small world.net
Business networking site	LinkedIn
Collaborate websites	Wikipedia
Virtual worlds	Second Life
Commerce communities	eBay, Amazon.com, Craig's list, iStockphoto
Podcasts	The Hobson and Holtz Report
News delivery sites	Current TV
Creative works sharing sites	Video sharing sites (YouTube) Photo sharing site (Flickr)
Social bookmaking sites	Digg, Newsvine, Reddit

Adopted from Mangold and Faulds (2009, p.358)

Social media usage refers to the multiplicity of activities in which individuals may participate online (Smith and Gallicano, 2015), as social media enables consumers to participate and provides access to information generated by other consumers (Kim and Srivastava, 2007). Mangold and Faulds (2009) discussed the argument for the importance of social networks and the Internet made by Sharma (2002) and Walter et al. (2008). Social media is becoming more important as an Internet marketing tool, given its wide range of users and new sources of online information, such as SNS, blogs, rating websites and open forums (Mangold and Faulds, 2009).

More specifically, firms can monitor and analyse valuable information about their users (communication, conversations, reviews and comments) on social media, including their preferences, social influence and types of social interactions, to understand how consumers view these firms (Felix et al., 2017). Many firms also try to reduce the risk of improper social media use by setting regulations and guidelines for social media use during working hours (Rokka et al., 2014).

Although the majority of the literature on social media focuses on consumer-centrism, user participation and sharing information through communities, companies and retailers seek opportunities to connect and participate with individuals and communities as a whole. Currently,most retailers have official social media and network accounts to communicate with consumers, and they value customer feedback and consumer satisfaction. Social media enables direct connections (Kaplan and Haenlein, 2010) and communication between firm and consumer, which are effective and efficient in the modern environment.

2.5.2. Social networks

The pioneers of social network analysis came from the fields of sociology, social psychology, and anthropology (Wasserman and Faust, 1994). "*The notion of a network of relations linking social entities, or of webs or ties among social units emanating through society, has found wide expression throughout the social sciences*" (Wasserman and Faust, 1994, p.10).

The "*network*" is based on the establishment of ties between individuals, groups of people, organisational departments or corporations that lead to the creation of social networks (Wasserman and Faust, 1994). Laudon and Traver (2016) adopted Hillery's (1955) definition of social networks, which involves (a) a group of people, (b) shared social interaction, (c) common ties among members, and (d) people who share an area for some period of time. Social networks are beneficial and valuable for network participants, whocan gain, provide and use resources (Gemunden and Heydebreck, 1997). A simple definition of a social network is a set of nodes or actors connected through a series of ties that generate patterns (Wellman et al., 2003).

There are nine key conceptsin network analysis: actors, relational ties, dyads, triads, subgroups, groups, relations, and networks (Wasserman and Faust, 1994). This study focuses on actors, relational ties, relations, and networksbecause these are essential factors to identify the dynamics of social connections. Actors are discrete individual, corporate, or social units and are referredto as social entities. Relational ties can be explained as a) one person's evaluation of another; b) transfers of material resources; c) association or affiliation; d) behavioural interaction; and e) physical connection. A specific group's collection of ties is called relations. Network consists of a finite set of actors and the relation or relations that define them (Wasserman and Faust, 1994).

Social networks can be modelled as graphs and visualised as node-edge diagrams or sociograms (Huang et al., 2007). Sociograms serve as a simple visual illustration of social networks. Figure 7 illustrates the formal organisational chart for an auditing group given in Krackhardt's (1996, p.163) "Social networks and liability of newness for managers". It is a simple chart that shows that each audit team has a leader. The four managers are represented by ellipses, the staff auditors are represented by diamonds, and the secretaries are given in boxes (Krackhardt, 1996).
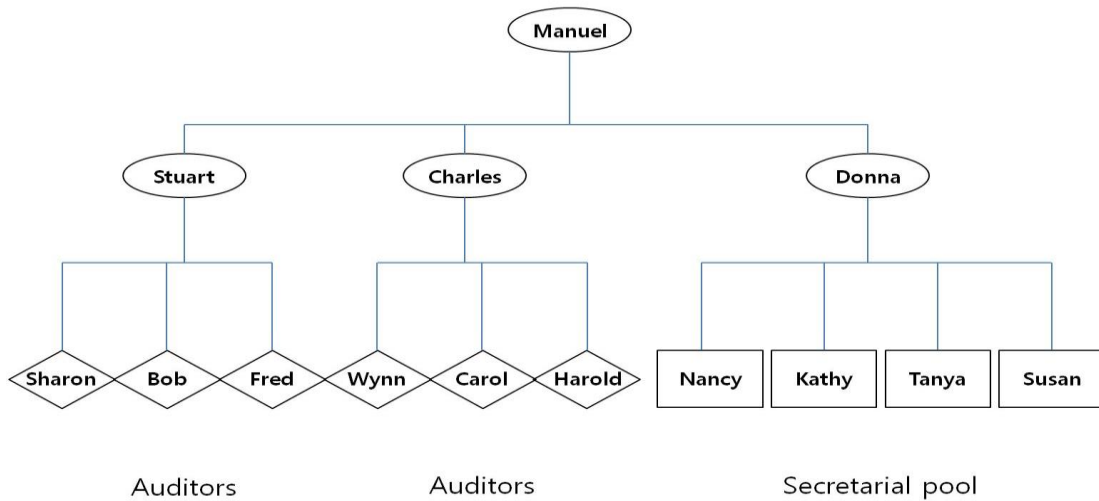
Figure 7: Formal Organisational Chart for an Auditing Group

David Krackhardt (1996) proposed conducting a network study by sending questionnaires to all members of staff, asking mainly to whom they typically went (or who came to them) for help or an advice when encountering a problem or a question. The results of this study illustrate and reveal an informal hierarchy (Figure 8).
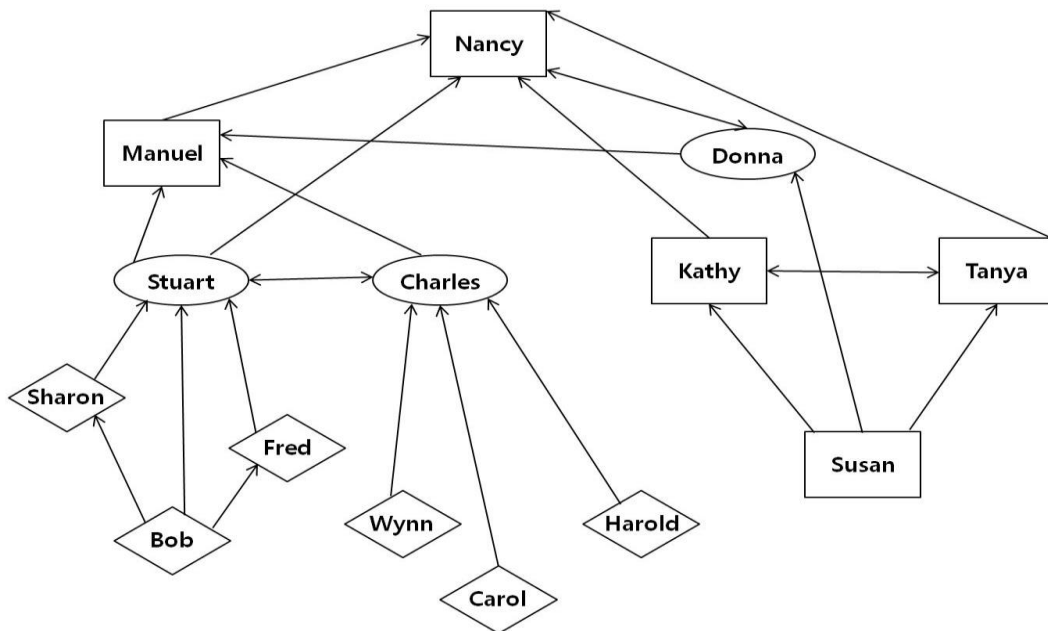
Figure 8: Advice Networks for an Auditing Group

Figure 8 shows that Manuel was not at the top of the sociogram, while Nancy was approached both by secretaries and by experienced secretaries. In this example, other staff members found Nancy more helpful in problem solving or in answering questions. The example used in Krackhardt's (1996) research is situated in an offline social network environment. This study's main objectives are based on the online environment, and it is important to distinguish between offline and online social networks. Marc Smith (1992) identified six characteristics of virtual space networks (online social networks) in his research, "Voice from the well: the logic of the virtual commons": 1) aspatiality, 2) asynchronicity, 3) acorporality, 4) bandwidth restrictions, 5) astigmatism, and 6) anonymity. Aspatiality explains how the physical location becomes less important in actions in online communities, given that online social network platformsare now places to socialise.

Asynchronicity is related to the duration of a response. In traditional social networks,a response or reply is almost instant or immediate,and on online networks, it may take time to receive feedback or a reply. Acorporality representsan individual's online profile used during an interaction, in the form of an actor or a nickname. Bandwidth refers to the accessibility of the Internet, which is spread widely, and with the development of technology and the use of mobile devices, users have no bandwidth restrictions. In an online environment, stigmas such as race, gender, and physical condition do not influenceinteractions between community members. Anonymity is the last characteristicidentified by Marc Smith (1992), as in many network platforms, users do not need to use their real identities or share personal information.

2.6.2. SNS

The term "social network sites"is commonly used; however, some researchers argue that a more appropriate term is "social networking sites" (Beer, 2008, p.518). Although both terms use SNS as an abbreviation,Beer (2008) believed that these sites should be defined distinctively as SNS because their main purpose is networking between users.Ellison (2007, p.1) definedSNS as *web based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system*".

SNS allow users to post and share whatever content they wish, whereas online communities are more narrowly focused on a common interest. Furthermore, Rau et al. (2008) stated that online communities are particularly designed to help people build an online presenceand social networks among users. Ellison et al. (2009, p.6) added that "*what truly distinguishes SNSs from earlier technologies is the articulated social network, which is at the heart of these systems*". A review of prior literature suggests that the theory behind "the need to belong" is human beings' need to form and maintain at least a minimum number of interpersonal relationships (Baumeister and Leary, 1995). According to this theory, Ma and Yeun (2011) suggested that people are naturally driven toward establishing and sustaining belonging and, hence, community.

Despite the advantages of SNS, such as being able to connect to friends at any time and place, share information with mass audiences and connect with strangers with similar interests, Boyd and Ellison believed that the majority of the connections made on SNS are with pre-existing offline connections or with people who are part of an extended extant offline connection social network (Boyd and Ellison, 2008). Boyd and Ellison (2008) stated,

> *What makes social network sites unique is not that they allow individuals to meet strangers, but rather that they enable users to articulate and make visible their social networks. This can result in connections between individuals that would not otherwise be made, but that is often not the goal, and these meetings are frequently between "latent ties"who share some offline connection.* (Boyd and Ellison,2008, p.211)

Boyd and Ellison (2008) did not rule out the potential advantages of meeting strangers through SNS; they acknowledged that a proportion of sites "*help strangers connect based on shared interests, political views, or activities*" (Boyd and Ellison, 2008, p.210). However, as observed in real life examples, SNS enable a mixture of pre-existing connections and connections with strangers. Academics attend conferences, lectures, seminars and other types of events and meet fellow academics and researchers, along with many other professionals.

They can make new connections through SNS such as Facebook or LinkedIn and create a group or community to share information and thoughts. When someone

invites a fellow researcher, he or she is exposed to all other members within a group, who could be total strangers but who share common interests. This new member now has the opportunity to connect with strangers in a group in which a pre-existing connection has initiated connections with strangers.

Online social network are showing significantly rapid growth year by year and have yet to reach their potential. Facebook alone had 1.35 billion monthly active users in September 2014, and 703 million users accessed the site via mobile devices (Facebook.com/Newsroom). Lin and Lu (2011) suggested that SNSare computer-mediated tools to accelerate group dynamics and influence between members. Online social network platformsfirst developed into a multi-functional platform that allows sharing photos and statuses between friends and eventually transformed into a large social community.

Information flow within a community has enabled more specific, detailed communication between the community members. Han and Windsor (2011) suggested that in order to encourage individuals to participate in SNS, consumers must have an appropriate platform. Then, they can write, share and discuss user-generated content throughout online social networks; Najjar (2011) highlighted functions such as "sharing" and "liking" on online social networks.

Online social network platforms provide not only emotional support through a network of friends but also entertainment and business activities, as marketers and retailers are also active users of these platforms (Phang et al., 2009). According to Mintel's (2014a) report, Facebook has begun to split its services by launching a messenger app, an app for sharing news and the Instagram app for sharing photos. This decision was made to cope with trends in social media and toremain highly competitive within the industry. The most significant growth in social networks was a 138% increase in the use of Pinterest and a 73% increase in the use of Tumblr during the same period as the use of smartphones and tablet devices rose (Mintel, 2014b).

There are several types of SNS in the online environment. Social networks have different types of sponsors and participating members (Laudon and Traver, 2016). For example, Facebook is focused on friends in a casual manner, whereas LinkedIn focuses on professional networking roles. Further, there are six types of online social

networks, as explained in Table 5. Each type of online social network is used worldwide, and a large number of participants use more than one type of network.

Table 5: Types of Social Networks and Online Communities

Type of social network	Description
General	Online social gathering place to meet and socialise with friends, share content, schedules, and interests. Example: Facebook, Pinterest, Instagram, Tumblr and Twitter
Practice	Social network of professionals and practitioners, creators of artefacts such as computer code or music. Examples: LinkedIn (business), Just plain Folks (music)
Interest	Community built around a common interest, such as games, sports, music, stock markets, politics, health, finance, foreign affairs, or lifestyle. Example: Debatepolitics.com (political discussion group), and Predictwallstreet (stock market site)
Affinity	Community of members who self-identify with demographics or geographic category, such as women, African Americans, or Arab Americans. Example: Black Planet (African American community and social network site) and healthboards.com (focusing on women's health issues)
Sponsored	Network created by commercial, government, and non-profit organisations for a variety of purposes. Example: Nike, IBM and political candidates

Adopted from Laudon and Traver (2016, p.700)

2.5.3. Online forums

An online forum is a Web application that allows Internet users to communicate with each other, although not in real time (Laudon and Traver, 2016). These forums can include message boards, bulletin boards, or a discussion group that provides online space for members to discuss or post an issue of interest. These forums require their own members to participate actively, as most forums are created by users and evolve through member participation.

2.5.4 Streaming media

Streaming media enables music, video and other large files to be sent to users in chunks so that when received and played, the file comes through uninterrupted

(Laudon and Traver, 2016). YouTube is one of the largest streaming media platforms and has over one billion users from more than 88 countries. YouTube allows users to upload user-generated content and to promote freedom of expression, information, opportunity, and belonging through their platform (YouTube.com). One-third of Internet users access YouTube channels and give/receive information. This platform streams video files through the YouTube webpage without allowing downloads (in principle). Notably, more than half of YouTube views come from mobile devices (YouTube.com).

2.5.5. Blogs

The term "blog" originated from the term "weblog" (Blood, 2000) and has given rise to the term "*blogger*", which became one of the most popular terms used on the Internet. A blog is a "*personal Web page that is created by an individual or corporation to communicate with readers*" (Laudon and Traver, 2016, p.180). A blog contains frequentlyor regularly updated entries consisting primarily of text but may also contain images, videos and direct links to other websites. The entries can vary from a personal diary or journal that conveys personal experiences to stories, thoughts, ideas expressed in an informal personal style, travel tips, or restaurant experiences and suggestions (Lin and Huang, 2010).

Blogs enable personal publishing through various platforms that encouragethe expression of feelings and the communication of ideas, thoughts and commentary. Blogs' intimacy, personalised tone and impression of spontaneity allow readers with similar interests as the blogger to have vicarious satisfaction and a sense ofproximity to the blogger (Safko, 2010). Most blogs serve C2C communications, but some blogs promote B2C, government-to-consumer (G2C), B2B and government-to-business (G2B) communications (Akehurst 2009). Blogs can be categorised into five types: (a) personal; (b) corporate; (c) topic or industry specific (e.g., travel blogs); (d) publication based (operated by journalists on behalf of traditional media); and (e) professional (Smudde, 2005).

Motivational factors that contribute to blogging include using the blog to document one's life, as a thinking tool, to provide social commentary, and as an outlet for feelings (Nardi et al. 2004),entertainment, self-expression, social interaction, passing

the time, professional advancement (Papacharissi 2002), and retailing. Hsu and Lin (2008) found that ease of use, enjoyment, altruism and reputation have the most significant influence on attitudes towards blogging, while social factors such as community identification significantly influence users' continued posting to blogs, explaining 83% of the variance in the intention to blog.

2.5.6. Micro-blogs

Kaplan and Haenlein (2011, p.106) defined microblogs as "*internet based applications which allow users to exchange small elements of content such as short sentences, individual images, or video links*". Microblogs have some similarities with blogs but use a more condensed and intensified number of words, such as Twitter. Their mission is "to give everyone the power to create and share ideas and information instantly, without barriers".In 2016, Twitter had more than 313 million monthly active users who sent 1 billion tweets monthly (Twitter 2016). Twitteruse occurs extensively on mobile devices: 82% of active Twitter users access the service through their mobile devices (Twitter 2016). Users' main intention in using Twitter is chatting about their daily routines, expressing thoughts and opinions, followed by conversing with other users, sharing and seeking information and URLs, and reporting news; thus,Twitter users can be classified into three categories: information sources, friends and information seekers (Java et al. 2007). Each Twitter user has his or her own webpage on which they post messages of up to 140 characters each. Other users can subscribe to a specific person or professional organisation, becoming "followers" or "*subscribers*" in order to receive their messages.

Followers can read, like, or even share messages they find interesting to their own followers. South Korea's politician Lee Jae Myung became a prominent figure through Twitter by posting messages about ways to solve issues in Seongnam city. These actionswere compared to actions in other cities and elicited high praise (Twitter.com/Jaemyung_lee, 2016).

As a form of social media, microblogs are positioned between traditional blogs and SNS because they are characterised by a "*high degree of self-presentation/self-disclosure and a medium to low degree of social presence/media richness*" (Kaplan and Haenlein 2011, p.106).

Microblogging platforms are different from common SNS. On microblogs, one's relationship with followers does not require reciprocation; any user can follow any other user without their approval, as posts are open to the public by default. Additionally, microblogs are more frequently updated and provide faster communication between users than traditional SNS (Java et al., 2007). Additionally, microblogs allow users to create communities around specific discussion topics at the touch of a button: typing # (hash tag) before any word transforms the word into a discussion topic that can be followed by other users.

2.5.7. Consumer review websites

Consumer review websites are social media applications that enable users to post reviews of their experienceswith products or services. Retailers provide a specific review page or section within a product information page with specific features, such as uploading pictures of the actual product, comments and ratings. Amazon product pages feature "*reviews*" posted by consumers who bought the product. Consumer review websites provide price comparisons, advanced search functions, price history charts, price alerts, sales alerts and more. Consumer review websites can take many forms:

• Standalone websites that have as a primary function – the collection and presentation of consumer feedback – such as Yelp, Epinions, Reevoo, TripAdvisor, Holidays- uncovered.co.uk.

• Embedded content within websites that have the sales of goods or services as a primary function but incorporate a substantial number of reviews to facilitate consumers' decision making, such as Amazon, eBay, and – within the tourism context – websites such as Expedia, Booking.com, and Travelocity, among others.

TripAdvisor-branded sites make up the largest travel community in the world, with 390 million average monthly visitors and more than 435 million reviews in 2016 (TripAdvisor 2016). Yelp had a monthly average of 2 million unique visitors through the mobile application and 72 million unique visitors in total and featured more than

115 million reviews in 2016 (Yelp, 2016). Many researchers studied impact of consumer reviews (Table 6).

Table 6: Some Studies of Consumer Reviews

Characteristics	Descriptions	Authors
Online review	Influence in purchase decision Recommendation by others makes positive influence	Senecal and Nantel (2004)
Critics review	Critics' influence on opening weekend box office revenue	Reinstein and Snyder (2005)
eWoM	Positive reviews encourage sales	Chevalier and Mayzlin (2006)
Ranking product reviews	Ranking reviews influence on sales	Ghose and Ipeirotis (2006)
Critics review	Some critics are especially influential	Boatwright et al. (2007)
Online review	Influence in other's purchase decision	Forman et al. (2008)
Quality of argument	Positive impact on purchasing intention Large number of coherent reviews show popularity	Lee (2009)
In-depth review	Review extremity, depth, and product type affect the perceived helpfulness of the review	Mudambi and Schuff (2010)
Online review	Consumer review attracts more universal acceptance than marketing variables	Chen et al. (2011)
Quality of review	Intention to purchase is depend on quality of other consumers' review	Lee and Shin (2014)
Trustworthiness	Trust computation for reviewers	Allahbakhsh et al. (2015)

For example, Chevalier and Mayzlin (2006) found that electronic word-of-mouth (eWOM) in the form of online book reviews has a causal impact (positive influence) on consumer purchasing behaviour (sales) from two leading online booksellers. Similarly, Ghose and Ipeirotis (2006) proposed two ranking mechanisms for product

reviews: a) consumer oriented and b) a manufacturer oriented. Consumers prefer to have more informative reviews, regardless of their origin. Forman et al. (2008) suggested that in the context of an online community, consumers prefer to have information created by other community members. Lee and Shin (2014) investigated whether review quality affects reviewers' evaluations and the e-commerce platform itself. Their findings indicated that the intention to purchase the product increases with high-quality reviews as opposed to low-quality reviews.

Allahbakhsh et al. (2015) proposed a set of algorithms for the robust computation of product rating scores and reviewer trust rankings. Trustworthiness positively influencesanother's intention to purchase. A further in-depth contextual analysis of eWOM is carried out in the knowledge management section.

According to Vogt and Knapman (2007, p.7), people are driven by "*the need for personal achievement or recognition, the need to be individual or creative, the need for friendship or belonging, the need to discover, explore or have new experiences and finally the need for sex and relationships*". Kelly et al. (2010) reinforcedthis statement by adding thatSNS provide people with the tools and opportunity to be a part of international communities that share opinions and content and that communicate directly with one another or with other large communities. SNS are integrated into daily life by members' own intentions and motivations for their benefit and enjoyment.

2.6. Knowledge
It is important to define and distinguish data, information and knowledge to distinguish these concepts and to avoid incorrect interpretations. In the online environment, these terms are used inter-changeably as a result of not clearly defining the correct terminology. The definitions of each term will provide a better and clearer understanding of knowledge-sharing issues. The previous literature shows that there is a lack of agreement on the definitions of data, information and knowledge. This misunderstanding of terminologies can lead to confusion. Therefore, it is necessary to identify the correct meaning of each term and how these terms are related to each other.

According to Davenport and Prusak (1998, p.2), "*Data is a set of discrete, objective facts about events*". Data can take the form of numbers, words and images if they are

considered facts about particular events. Roberts (2001, p.100) added that data are "*a series of observations, measurements, or facts in the form of numbers, words, sounds and/or images. Data have no meaning but provide the raw material from which information is produced*". Based on these studies, this research defines data as "*A series of observations about facts in various formats*" (Roberts, 2001, p.100).

Many researchers agree that information is a modified and polished set of data. Boisot (1998, p.20) defined information as "*data that modifies the expectations or the conditional readiness of an observer*", and Roberts (2001, p.100) agrees, defining information as "*Data that have been arranged into a meaningful pattern*".

This study agrees with the definition from Norris et al. (2003, p.2), "*Data that has been organised in such a way that it achieves meaning, in a generalised way*". Data can occur as numbers, words, images and sounds that do not make much sense to most people. However, when data have been generalised, polished or arranged in a way that others can understand, it is called information. Table 7 presents previous studies' definitions of knowledge.

According to Nonaka and Takeuchi (1995), there are two kinds of knowledge: explicit and tacit. Explicit knowledge is objective; it is the knowledge of rationality and equipped with theory. In contrast, tacit knowledge is subjective; it is the knowledge acquired through personal experience. Howells and Roberts (2000) suggested that explicit knowledge is unique because it can be documented and, hence, is tangible. Tacit knowledge is intangible because it is informally collected, shared and/or discussed through communication.

This study focuses on the influence of tacit knowledge behaviour from other consumers' experiences and informal communications in individuals' knowledge sharing. According to Gourlay (2002), tacit knowledge is know-how, which is based on people's experience and therefore exists in people's minds. Based on previous studies by Nonaka and Takeuchi (1995), Howells and Roberts (2000), and Gourlay (2002), this study takes tacit knowledge as an individual's personal experiences with and thoughts on particular products and services.

Table 7: Definitions of Knowledge

Author	Definition of knowledge
Nonaka and Takeuchi, 1995, p.58	Knowledge is a result of collaboration → Knowledge is a dynamic human process of justifying personal belief toward the truth → Knowledge is a function of a particular stance, perspective, or intention → Knowledge, like information is related to meaning → Knowledge is the collection and analysis of information
Norris et al., 2003, p.2	Information that is presented within a particular context, yielding insight on application in that context, by members of a community
Roberts and Roche 2001, p.100	The application and productive use of information
Davenport and Prusak, 1998, p.5-6	Knowledge is a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. Knowledge derives from information as information derives from data. If information is to become knowledge, humans must do virtually all the all work.

2.6.1. Knowledge management

Knowledge is defined as "*an awareness, consciousness or familiarity gained from experience or learning*" (Johnson and Scholes, 2002, p.10), as "*Information that is relevant, actionable and based at least partially on experience*" (Leonard and Sensiper, 1998, p.121), and as "*Information plus the causal links that help to make sense of this information*"(Sarvary, 1996, p.96). Tsoukas and Vladimirou (2001) suggested that knowledge is the individual ability to draw distinctions within a collective domain of action based on an appreciation of context or theory. This study adopts the definition from Davenport and Prusak (1998, p.5) that "*knowledge is a fluid mix of framed experience, values, contextual information, and expert insights*".

Experience and expert insights are key factors of knowledge sharing, helpingin content generation within online social networks and information sharing.

According to the definition of knowledge above, individuals should learn how to manage their own knowledge in order for it to be valuable (Turban et al., 2012). This process can be described as knowledge management. Davenport and Prusak (1998) said that in an organisational environment, knowledge management can draw from an organisation's existing resources, such as good information systems management, organisational change management, and human resources management practices. Because this research focuses on the individual level and on online communities rather than on organisations, knowledge management is described as managing, transporting and sharing knowledge between individual members. Therefore, this study adopts Plessis's (2007, p.21) definition of knowledge management: "*an umbrella term for a variety of interlocking terms, such as knowledge creation, knowledge valuation and metrics, knowledge mapping and indexing, knowledge transport, storage and distribution and knowledge sharing*".

Coleman (1988, p.95) defined the social capital of knowledge as "*a set of resources that are linked to membership of particular social group*", "*a resource that arises out of people's family relationships*", and "*trust and reciprocity between people that facilitates collective action in terms of economic and political development at regional and national levels*", leading to stronger relationships and potential access to a greater economic reward (Coleman, 1988).

Bourdieu (1986) viewed the network of relationships between actors as a product of strategies that could be "*individual or collective*" and that may be "*consciously or unconsciously aimed at establishing or reproducing social relationships*" that hold value for the actor in both the short and the long term.

Based on the definitions mentioned above, this study defines knowledge management as the various processes that control the creation, dissemination and utilisation of knowledge. Knowledge management is widely used in organisations working to attach knowledge as a resource for sustained competitive advantage (Kankanhalli et al., 2005). In the organisational environment, technology and tangible assets used to be competitive advantages; however,for the last decade, knowledge and intelligence have been recognised as crucial factors for organisations (Alavi and Tiwana, 2002).

Knowledge is now a critical organisational resource (Davenport and Prusak, 1998) and remains continuously evolving.

Advanced technologies such as the Internet, Web2.0 and convenient mobile devices created a new era of knowledge management and knowledge sharing. Companies cannot rely on their own knowledge and formal boundaries of intellectual knowledge because they cannot be controlled, nor can companies fully possess intangible assets.

According to Turban et al. (2009), the most common knowledge management practices can be divided into six areas: a) the process of sharing knowledge and best practices, b) implanting a culture that facilitates knowledge sharing, c) promoting and reusing best practices, d) producing and processing knowledge as a valuable product, e) driving knowledge for innovation and f) leveraging intellectual aspects.

This research argues that a) and b) from Turban et al. (2002), knowledge sharing practices and the use of online platforms form a newly established knowledge sharing culture.

Alavi and Leidner (2001) proposed that the selected perspective on knowledge management should concentrate on a) creating and handling knowledge stocks if knowledge is seen as an object or associated with information access, b) knowledge flow and the knowledge processes of creation, transferring, and disseminationif knowledge is considered a process, and c) building core competences, building intellectual capital and understanding the strategic value of know-how if knowledge is viewed as a capacity.

Alajmi (2011) suggested four dimensions of the essential features of knowledge management initiatives. The first dimension revolves around knowing what they know and where knowledge exists. First, knowledge should be recognised and understood in order to be leveraged to benefit individuals or communities. This dimension leads to finding out "who knows what". The second dimension is the ability to have access to knowledge, what people know and where knowledge exists.

Granovetter (1983) emphasised that the bridge between members will accelerate and intensify knowledge transformation. In this regard, this research considers online communities in which social networking serves as a bridge that allows members to communicate and share information and knowledge. The third dimension is the

individual's willingness to share knowledge, to engage in problem solving and to participate in decision making. Individuals decide to share their own unique, valuable and hard to find knowledge voluntarily. Individuals are encouraged to participate in online communities by overcoming obstacles (Bock et al., 2005).

The final dimension – the supporting culture that encourages mutual learning and innovation – continues from the third dimension. The encouragement to share knowledge is supported by effective reward systems, management support, organisational structures, technological facilities and mutual trust (Al-Alawi et al., 2007). Individuals in organisationscommonly share and transfer knowledge commonly.

Conway et al. (2001) provided a clear definition of networks, explaining that networks have three essential components: actors, links and flows. This study argues that knowledge is a resource that not onlyis passed along by actors but also flows through network linkages with appropriate content from the network. This process will enhance social capital and develop a prior level of knowledge (Anand et al., 2002). Knowledge sharing is the process of mutually exchanging knowledge and jointly creating new knowledge (van denHooff and de Ridder, 2004); it implies a synergistic collaboration among individuals who work toward a common goal (Boland and Tenkasi, 1995). Based on the above discussion, knowledge management is a broad concept involving a number of core concepts and integral activities. However, among these components of knowledge management, knowledge sharing is devoted the majority of this study's attention.

2.6.2. Knowledge sharing

Nonaka (1994, p.19) stated,"*knowledge is created through cycles of combinations, internalisations, socialisations and externalisations*". Knowledge is an intangible resource that exists within the mind of the individual (Sveiby, 1997).Alavi and Leidner (1999) stated that many researchers have studied knowledge sharing, knowledge transfer and knowledge flow as exchangeable terms. Knowledge sharing is preferred to other terms and is part of the knowledge management process. Knowledge sharing includes knowledge creation, acquisition, codification and sharing, which is similar to knowledge transfer (Alavi and Leidner, 2001; Bock and Kim, 2002;

Kankanhalliet al., 2005).Lee (2001) defined knowledge sharing as "*the activities of transferring or disseminating knowledge from one person, group or organisation to others*" (p. 323). In summary, and according to Bock et al. (2005), knowledge sharing occurs when knowledge and information are exchanged between employees or individuals within an organisation or online community.

Previously, many researchers have focused on knowledge sharing behaviour in organisational settings and considered knowledge sharing and transfer to be the biggest issues. In such an environment, knowledge sharing is considered the act of making the needed knowledge available to others within the organisation (Abzari et al., 2008). Knowledge sharing can influence employees' benefits (Jonsson and Kalling, 2007); the organisation's potential success and performance (Davenport et al., 1998); and the organisation's managerial demand (Ibragimova et al., 2012). Usoro et al. (2007) suggested that knowledge sharing behaviour occurs when two or more parties are involved in providing and acquiring knowledge through communication. This research follows Lee's (2001) definition of knowledge sharing: "*the activities of transferring or disseminating knowledge from one person, group or organisation to other*" (Lee, 2001, p.323)

Davenport and Prusak (1998) noted that knowledge sharing has two main related activities: absorption or acquisition and dissemination. Connelly and Kelloway (2003, p.294) defined knowledge sharing as a "*set of behaviours that involve the exchange of information or assistance to others*". McInerney (2002) noted that reading and listening to others could lead to knowledge acquisition.

This statement can be adapted for an online environment to say that the knowledge sharing process can be created through conversations between individual members in an online community (Sharratt and Usoro, 2003). Individuals can create posts to engage with others or reply to a post in order to engage with the author and to communicate, create and share knowledge. Sharratt and Usoro (2003) suggested in their research that people can post open questions or seek answers to solve problems. Other members can then respond with similar experiences, or experts can share their knowledge to help solve problems and have direct communication by sharing knowledge. Kwok and Gao (2005) emphasised formal knowledge sharing, such as

workshops, training, or formal classes,in contrast to informal conversation. These formal knowledgesharing opportunities are usually intended for organisations.

Previous research on knowledge sharing behaviour includes sociological theories (Jeon et al., 2011) and organisational theories (Chen and Chang, 2012). These studies have shown that knowledge sharing behaviour depends on an employee's circumstances, feelings and other personal preferencesbecause they believe that not all knowledge is important for others. Knowledge sharing through online communities raised concerns for a number of researchers because such acts of communication between individual members have had a positive effect on knowledge management (Kankanhalli et al., 2005; Wasko and Faraj, 2005). Lin et al. (2009) suggested that individuals seek, collect and distribute knowledge through online communities to attract advanced insights and to resolve any issues, problems and concerns.

The literature defines knowledge sharing as a type of social process that involves two or more people and that leads to two activities: the absorption or acquisition of knowledge. One of the two activities occurs when new knowledge is obtained between two individuals, and dissemination occurs when knowledge is shared with others, such as an online community (Davenport and Prusak, 1998).

Knowledge sharing behaviour exists in formal and informal contexts (Alavi and Leidner, 2001). Informal communication channels allow individuals to spread knowledge informally through, for example, informal workshops, meetings, and general chats or even "*coffee breaks*" (Alavi and Leidner, 2001, p.120). The informal context promotes socialisation among friends, colleagues (Holtam and Courtney, 2001) and online community members,which is of particular interest for this research. Formal context channels are workshops, training and formal classes, which are usually intended to ensure the distribution of a body of knowledge from one to the other in one direction (Kwok and Gao, 2005).

2.6.3. Motivation to share knowledge

This study's ultimate aim is to determine why people want to share s-commerce knowledge. Therefore, the investigation should begin by finding out what motivates

people to share knowledge in general.Elliot and Covington (2001, p.74) defined motivation as "*the energization and direction of behaviour to do something*". Based on this definition, Hew and Hara (2007) identified six types of motivators of general knowledge sharing in the online environment: reciprocity, personal gain, altruism, and commitment to the group, ease of technology use and external goals. This study aims to identify specific and extensive motivators in s-commerce shopping based on Hew and Hara's (2007) general motivators. When consumers share s-commerce knowledge, competition and rivalry are likely to increase because consumers compete for a limited stock of products and services.

Nowak and Sigmund (2000) suggested that there are two types of reciprocity: direct and indirect reciprocity. Direct reciprocity is reciprocal exchange between two individuals by both giving and receiving favours. Indirect reciprocity is a more generalised approach, as one individual is willing to help others even knowing that they may not receive favour from the same individual in return (Wasko and Faraj, 2000). In an online community, when someone posts open questions, members who write replies with expert opinions or personal experience in order to solve the problem do not typically expect the same from the author in return. Wasko and Faraj (2000) found that some members believe that it is only fair to help others if they themselves receive help from community members, which results in and encourages participation and maintains the flow of knowledge sharing throughout the community.

Personal gain can be achieved in many different ways, depending on the individual. Examples include payment, prizes, recognition and self-esteem enhancement, contributing to individuals' welfare (Hew and Hara, 2007). Wasko and Faraj (2005) found that knowledge sharing on an online network can enhance an individual's professional reputation.

Hars and Ou (2002) identified altruism as a motivator for an individual to increase others' welfare. Their research results showed that altruism was selected as an important factor by 16.5% of all participants. Batson et al. (2002) supported this statement by suggesting that altruism can be triggered by empathic emotion.

Commitment to the group is a strong motivator to share knowledge. People tend to form a group within the boundaries of common interests, feelings and emotional values. Group or community members are more willing to help other members to

increase their welfare, maintain good relationships and gain reputation (Hew and Hara, 2007). This commitment will also enhance the activity within a group or community and encourage other members to participate in the knowledge sharing or informationsharing environment.

Previous research studies have found ease of technology use as motivator for sharing information online (Wang and Fesenmaier, 2003; Teigland and Wasko, 2004). Ease of use can be ideally explained as user convenience. Teigland and Wasko (2004) found that participants who shared information online did so because of its convenience. In the same environment without technologies such as e-mail, mobile communication and SNS, participants neglected to share information, which would have involved moving from one place to another or additional physical or mental effort.

External goals tend to motivate individuals to share knowledge, especially when individuals share and receive information to purse their objectives. Beenen et al. (2004) experimented by posting projects and asking members to participate by rating a movie on a website. The results of this experiment were extraordinary and exceeded expectations, with voluntary participation increasing traffic.

Zhang et al. (2014) summarised the benefits of online knowledge sharing. Extrinsic benefits are "economic rewards" (Davenport and Prusak, 1998) and "social rewards" (Blau, 1964), while intrinsic benefits are "self-efficacy" (Cabrera and Cabrera, 2002) and "enjoyment" (Zhang et al., 2010).The relevant research question is, "What motivates individuals to share their knowledge?" Aliakbar et al.(2013) identified motivational factors for knowledge sharing (see Table 8): self-efficacy, compatibility and perceived advantage (Bock and Kim, 2001; Kankanhalli et al., 2005; Wasko and Faraj, 2005).

Table 8: Motivational Factors for Knowledge Sharing

Factor	Definition	Author(s)
Trust	Employees maintaining reciprocal faith in each other in terms of intention and behaviours	Lin, 2009; Chen, 2010; Zhao, 2012
Self-efficiency	Individuals attempting to improve others' perception of their competency	Bock and Kim, 2001; Kankanhali, 2005
Norm of Reciprocity	A set of socially accepted rules regarding a transaction in which a party extending a resource to another obligates the latter to return the favour	Wasko and Fraj, 2005; Lin, 2009;
Perceived relative advantage	A measure of the degree to which an action provides more benefit than its precursor	Lin, 2009; Chen, 2010
Familiarity	The extent to which individuals know each other, and it can be built up through interactions	Koh and Kim, 2004; Zhao, 2012
Sense of belonging	The experience of personal involvement in a system or environment so that persons feel themselves to be an integral part of that system or environment	Zhao, 2012
Perceived similarity	The common characteristics, such as interests, values, or goals, that one perceives with others	Zhao, 2012
Outcome expectations	The expected consequence of one's own behaviour	Bock and Kim, 2001; Kankanhali, 2005

Adopted from Aliakbar et al. (2013)

2.6.4. Individual attitudes

Attitude has been identified as a key factor of knowledge sharing and knowledge sharing behaviours. Prior studieson attitude and its relationship with knowledge sharing adoptedTRA and TAM (Fishbein and Ajen, 1975; Davis et al., 1989; Venkatesh et al., 2003). These two theoretical models demonstrate that individuals'

behaviour is determined by their beliefs and attitudes (Venkatesh et al., 2003). Fishbein and Ajzen (1975) suggested that an individual's attitude toward a specific behaviour is the result of an evaluation of either positive or negative feelings. Based on prior literature, this research follows the notion that positive attitudes towards knowledge sharing in online communities will lead to and encourage knowledge sharing in online communities.

Bock and Kim (2001) proposed a theoretical model (see Figure 9) to identify positive relationships between attitudes towards and intention to share knowledge. These factors were identified through literature on TRA, economic exchange theory, social exchange theory and social cognitive theory (Bock and Kim, 2001).
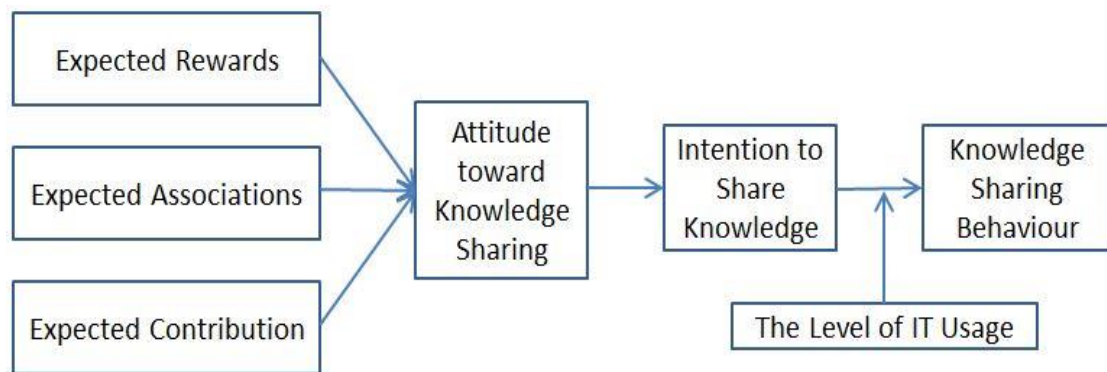
Adopted from Bock and Kim (2001, p.1113)

Figure 9: Relationship between Attitude and Intention to Share Knowledge

Bock and Kim (2001) found that the expected reward does not influence attitudes toward knowledge sharing; in contrast, it was negatively related. This is a very interesting finding to notebecause the majority of previous studies found that expected rewards were positively related to attitude (Bock and Kim, 2001). According to economic exchange theory, individuals will behave according to rational self-interest. Knowledge sharing will occur when rewards exceed costs, hence providing benefits to the individual who has the intention to share knowledge (Constant et al., 1994; Bock and Kim, 2001).

For example, in an organisational environment where employees believe they will receive extrinsic benefits such as pay increases, promotions and bonuses from

knowledge sharing, they are likely to develop a positive attitude towards knowledge sharing (Bock and Kim, 2001).

However, because these results suggest that expected rewards discourage the formation of a positive attitude towards knowledge sharing, this research argues that in an online community environment, individuals do not necessarily expect rewards from knowledge sharing. However, this study does not rule out the possibility thatrewards can be identified and used as a motivational factor for knowledge sharing in an online environment.

More importantly, Bock and Kim (2001) suggested that an individual's level of IT usage had a moderating effect in which IT use created a new phenomenon of knowledge sharing by providing new platforms, enabling individuals to share knowledge more frequently and conveniently (Bock and Kim, 2001; Davenport, 1997). In turn, there was a significant relationship between this attitude and the behavioural intention to share knowledge through expected association and expected contribution.

Based on the findings above, Bock and Kim took their study to the next level by including Robert Zmud and Jae-Nam Lee. Bock et al. (2005) examined the"roles of extrinsic motivators, social psychological forces and organisational climate" in their behavioural intention framework in knowledge sharing. They proposed a theoretical model that was further developed from previous research (Figure 10).

The results suggest that an individual's attitude toward knowledge sharing is driven primarily by anticipated reciprocal relationships (Bock et al., 2005). From the proposed theoretical model, the hypotheses on anticipated extrinsic rewards and sense of self-worth were "not supported". Subjective norms were considered the social pressure to perform or not perform behaviour (Ajzen, 1991), which, in this research, is knowledge sharing. The results indicate that subjective norms are likely to directly and indirectly affect behavioural intentions through attitudes. This significant result contributes to this research because social pressure plays a major role in knowledge sharing behaviour.
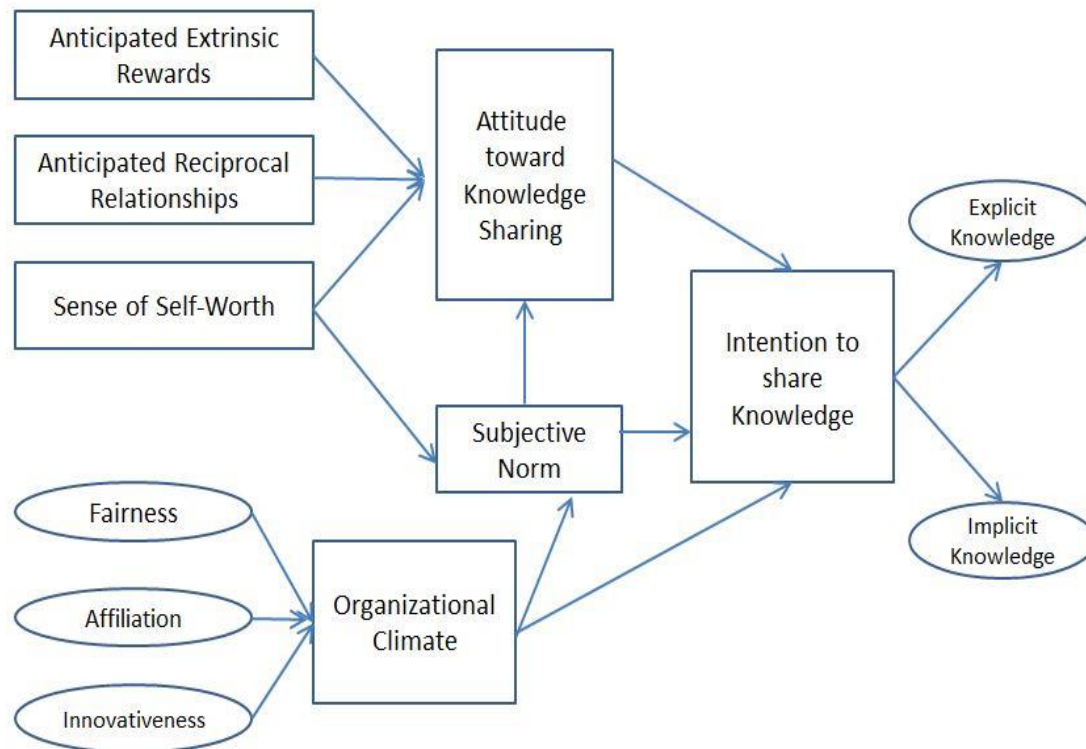
Figure 10: Theoretical Model Proposed by Bock et al. (2005)

2.6.5. Social relations

Because subjective norms positively influence knowledge sharing, it is necessary to look at the social relations between individuals. It is important to examine social relations because in an online environment, individuals have one-to-one and one-to-many social relations. Knowledge sharing typically involves providing knowledge to another person or people (Wu et al., 2007). The existence of social relationships encourages people to provide useful knowledge and boosts the willingness to share knowledge (Wu et al., 2007). Lin (2006) suggested that social interaction is a crucial factor of knowledge sharing and building trusted relationships. According to Bakker et al. (2006), trust is an important factor and motivator of knowledge sharing. Individuals were inclined to share knowledge with other team members who show honesty and fairness and who share the same principles. Bakker et al. (2006) identified that trust is not significant on its own but plays a significant role in building social relationships among members.

2.6.6. Word-of-mouth/Electronic word-of-mouth

WOM is defined as "*all informal communications directed at other consumers about the ownership, usage, or characteristics of particular goods and services or their sellers*" (Westbrook, 1987, p.261). WOM is considered as informalperson-to-person communication in which a person who receives information on a product or service from another perceives the information as non-commercial. The interaction between consumers influences consumers' behavioural responses because they receive either positive WOM (Moore et al., 2005) or negative WOM (Bougie et al., 2003). In early literature on WOM, Dichter (1996) identified three stages of informal communication between consumers. The first stage is product involvement, which occurs post-purchase after a consumer desires to talk about the product or service. The second stage is self-involvement, in which the consumer seeks to attract another's attention and achieve recognition by telling others about the purchase of the product or service. The last stage is other involvement, in which the consumer seeks to share the post-purchase experience to help others in their decision making regarding the product or service.

Wangenheim and Bayon (2004) examined the effect of WOM on consumer behaviour and found that WOM has an impact of switching decisions and perceived attitudes. Balter and Butman (2005) supportedthis impact and influence by examining WOM's influence on consumer decision making, preferences, loyalty and switching. Traditional sources of WOM are family and friends or individuals close to the decision maker who have more knowledge or experience (Duhan et al., 1997). However, in an online environment, consumers can exchange information with strangers and community members who share similar interests.

eWOM shares traditional WOM's core concept of informal communication; however,because it occurs in the online environment, consumer behaviour and responses to eWOM are different from those to WOM. Compared to traditional WOM, eWOM can reach a large audience through online platforms such as forums and communities. Blackshaw (2008) illustrated in his book title that "Satisfied customers tell three friends; angry customers tell 3000". Online platforms allow users to share either positive or negative experiences regarding a product or service, influencing many other customers in their decision making.

2.6.7. Barriers to sharing knowledge online

Hew and Hara (2007, p.2319) defined barriers to knowledge sharing as "*factors that reduce or diminish an individual's behavioural intention to share knowledge*". In extensive research, Hew and Hara (2007) found that despite the ease of sharing information through SNS, there are six types of possible barriers to information sharing: technology, lack of knowledge to share, competing priorities, community, personal attitudes and confidentiality considerations.

Gray (2004) cited technology-related barriers as the reason for a lack of knowledge sharing. Technology can provide ease of use, but at the same time, technology can create barriers. For example, individuals must navigate to a specific website to share or gain knowledge, and they must remember to log in regularly; these inconveniences candeter these users.

Another barrier to online knowledge sharing is a lack of knowledge on a particular subject; some individuals are hesitant to share what they know because they are afraid that what they contribute may not be completely accurate and thus may be misleading (Ardichvili et al., 2003). Additionally, individuals may be reluctant to share knowledge because they feel little identification with the community itself (Gray, 2004). Wasko and Faraj (2000) also found that some individuals did not want to share knowledge because of some arrogant and negative feedback from other members within the community. An individual's attitude can also be considered a barrier. According to Wasko and Faraj (2000), some people consider certain knowledge to be a form of leverage and competitive advantage and therefore are reluctant to share it with others.

Smith et al. (2012) suggested that most of the knowledge sharing literature focuses on the benefits and types of knowledge sharing. However, the study also mentioned that Internet use has brought forth new concerns regarding confidentiality. Knowledge is an intangible asset, and it is difficult to control the flow of knowledge sharing and to claim intellectual rights if needed. In organisational environments, employers use confidentiality agreements or similar arrangements, but even then, some firms havefaced problems in terms of security.

2.7. Satisfaction

Oliver (1981, p.27) stated, "*satisfaction is post-consumption evaluation based on a comparison between the pre-consumption expected value and the post-consumption value after the purchase or use of a service or product*". Cardozo (1964) adopted the notion of satisfaction in marketing research to measure customer satisfaction after a customer purchased a service or product. Positive disconfirmation and satisfaction exists if perceptions exceed a consumer's expectations (Oliver, 1981).Eggert and Ulaga (2002) considered satisfaction as a strong predictor of behavioural variables such as repurchase intentions, WOM recommendations or loyalty.

Many researchers have studied satisfaction and found adifference between consumer expectations and actual satisfaction and further determined how that satisfaction affects purchasing intentions (Bai et al., 2008; Bhattacherjee, 2002; Kim et al., 2006). LaTour and Peat (1979) suggested that satisfaction and attitudes are different factors of purchase intention; however, Hong et al. (2006) argued that attitudes include satisfaction. This study follows a previous study that measures satisfaction as an attitude.

Consumer satisfaction is believed to mediate consumer learning, such as complaining, WOM and repurchase intention (Westbrook and Oliver, 1981).

Oliver (1996, p.14) defined dissatisfaction as *"the consumer's fulfilment response. It is a judgement that a product or service feature, or the product or service itself, provided (or is providing) an unpleasant level of consumption-related fulfilment, including levels of under – or over* fulfilment". Oliver's (1996) research found that consumers were reluctant to complain about their dissatisfaction experience because it required time and effort and provided a low probability of a successful complaint encounter. In the modern environment of online communities, which lift restrictionson location and time, consumers are more willing to share their dissatisfaction on social networks, open forums and blogsand give direct feedback to the company.

Previous research shows that user satisfaction positively affects consumers' decision to repurchase products or continuously use services, including mobile Internet services, by proposing expectation confirmation models (Bhattacherjee, 2001).Thong

et al. (2006) further supported Bhattacherjee (2001) and confirmed that satisfaction had a significant effect on a consumer's intention to continuously use services.

Zeithaml et al. (1996) found that satisfied customers are likely to spread favourable WOM. Babin et al. (2005) explained positive effects between Korean restaurant consumers' satisfaction and positive WOM. Shiau and Luo (2012, p.2437) testedthe hypothesis that *"consumer satisfaction is positively associated with their intention to engage in online group buying"*,and their resultswere significant. Their research was conducted in an online group-buying environment, but it focused only on group buying purchase intentions instead of the relationship between s-commerce and the path as a whole.

An individual's degree of satisfaction with an experience is the key antecedent of WOM (Anderson, 1998). The relationship between satisfaction and WOM has been a popular research area for many scholars. For example, Bitner (1990) found that satisfied consumers generate positive WOM, Zeithaml et al. (1996) found that consumers who were satisfied with a service were likely to spread favourable WOM,and Yang and Preston (2004) found that loyal customers were inclined to disseminate positive WOM to others. Oliver (1996) added to his definition of satisfaction (Oliver, 1981)that the fulfilment of an individual task contributes to satisfaction. Thus, individuals can be satisfied based on their own perception of needs fulfilment. Oliver (1996, p.14) suggested, "*Over fulfilment can be satisfying if it provides additional unexpected pleasure; and under fulfilment can be satisfying if it gives greater pleasure than anticipated in a given situation*". The individual's satisfaction can be achieved in different cases and circumstances, as one individual could be satisfied and another dissatisfied with identical products or services.

The establishment of Web 2.0 and online communities has encouraged consumers to act and participate by sharing their own experiences, knowledge and expertise by providing feedback, using forums and SNS. Satisfaction and knowledge sharing are closely related and connected in the modern environment through both positive and negative WOM. Therefore, this study revealed both a direct and an indirect influence of knowledge sharing on consumer satisfaction.

In contrast to previous studies, this research treats satisfaction as "satisfaction knowledge and information shared by others". Satisfaction is defined in this study as receiving the knowledge of satisfaction from others who have experienced products and services. Blackshaw (2008) addressed the case of Dell computers in 2005:a high-profile blogger had an unsatisfactory experience with his purchase of a Dell computer. After failing to receive customer service, he shared his unhappy experience on his online blog. The one individual's voice created a significant campaign and affected millions of potential consumers of Dell computers. The consumers who had this information were disinclined to purchase Dell computers, and eventually, Dell had to act on consumer feedback, conduct after-sales services and improve its customer care quality (Blackshaw, 2008).

The relationship between knowledge sharing and satisfaction is an essential topic for this study because people share their experience, knowledge, expertise, satisfaction and dissatisfaction information with others.

2.8. Overview of Theoretical Background and Framework

The emergence of mobile technology and Internet access has enabled information searches and online shopping transactionsat any time and place (Al-Mowalad and Putit, 2012). Online networks, web sitesand virtual spaces areessentially a form of information technology (Gefan et al., 2003). Social media encouraged the new phenomenon of online social networking, and a large number of Internet users have utilisedthis technology for the purpose of socialising in a virtual environment (Al-Mowalad and Putit, 2012). Perceived ease of use and perceived usefulness are recognised as the most important elements of an individual's use and acceptance of information technology(Moon and Kim, 2001).

Fishbein and Ajzen, two social psychology scholars, introduced TRA to study behaviour and behavioural intentions. They constructed a theoretical model with two determinants: attitudes toward the behaviour and subjective norms (Fishbein and Ajzen, 1975). Despite the success of the theory – which many scholars have used – Ajzen revised TRA by adding perceived behavioural control, thereby introducing TPB (Ajzen, 1985). Later, Poss (2001) criticised TRA by emphasising the lack of explanation of behaviour. The additional elements aim to reinforce the original theory

by examining the impact of behavioural control on intention to perform the target behaviour.

Fred Davis empirically tested the acceptance of new end-user information technology systems in his PhD thesis in Massachusetts, 1985. TAM, which was derived from TRA and introduced in 1989, aims to "*provide an explanation of the determinants of computer acceptance which is capable of explaining user behaviour across a broad range of end-user computing technologies and user populations, while at the same time being both parsimonious and theoretically justified*" (Davis et al.,1989, p.985).

TAM comprises an information systems model that investigates how users decide to accept and use new technology. This research proposes a framework based on TAM to fit this purpose and applies additional theoretical links to support the framework:TRA (Fishbein and Ajzen, 1975), TPB (Ajzen, 1985), social exchange theory (Blau, 1964), knowledge sharing (Bock et al., 2005), TAM (Davis et al., 1989) and online purchase intentions (Shim et al., 2001).

This study is based on the TAM framework (Davis et al., 1989), and extended TAM (Venkatesh and Davis, 2000) revises the framework to create a new potential research model. This study creates a new research model as a contribution to the online consumer behaviour literature, as it draws together elements of m-commerce, consumer satisfaction and knowledge sharing through online social networks and s-commerce into a cohesive framework that can be empirically tested.

2.8.1. The Theory of Reasoned Action (TRA)

As noted earlier, the foundation of TAM was the theory established by Fishbein and Ajzen (1975), TRA. Fishbein and Ajzen introduced TRA to study behaviour in social psychology. TRA states that behaviour is stimulated by behavioural intentions, which are driven by two determinants: attitudes toward the behaviour and subjective norms. TRA became a popular theory among researchers, especially to understand factors affecting technology usage: e-commerce (Bosnjak et al., 2006); mobile chats (Nysveen et al., 2005); health beliefs (Poss, 2001) and knowledge sharing. Figure 11 shows the two constructs of TRA.
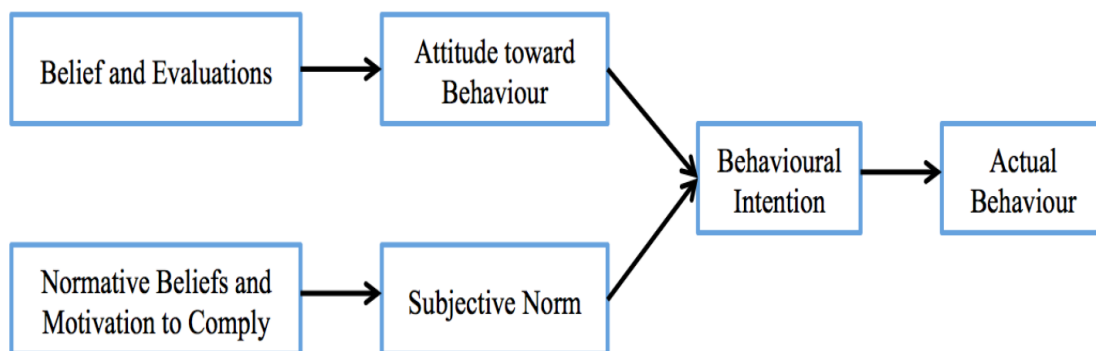
Figure 11: Theory of Reasoned Action

TRA attempts to explain a broad area of human behaviour:a person's performance of a specified behaviour is determined by his or her behavioural intention to perform behaviour, and behavioural intention is jointly determined by the person's attitude and subjective norm concerning the behaviour in question (Fishbein and Ajzen, 1975). Based on this theory, this study assumes that an individual's intention to act in a particular way depends on their intention as a function of the beliefs that a specific behaviour will lead to a particular outcome. TRA employs two main components to predict behavioural intention (as shown in Figure 11): attitudes and norms.

2.8.1.1. Attitude toward Behaviour

Fishbein (1967, p257) defined attitudes as "*learned predispositions to an object or class of objects in a favourable or unfavourable way*". In Fishbein's (1967) study, attitudes are a function of attitude that integrates social perceptions and experiences. Slocombe (1999) stated that attitude toward the behaviour is a major determinant of behavioural intention. An attitude towards the behaviour refers to "*the individual's positive or negative feeling about performing the target behaviour*" (Fishbein and Ajzen, 1975, p.216). Therefore, an individual's attitude can be distinctively dependent on the individual's feeling, which will create either a positive or a negative outcome.

2.8.1.2. Subjective Norms

Fishbein and Ajzen (1975, p.302) defined a subjective norm as "*the person's perception that most people who are important to him (/her) think he should not*

perform the behaviour in question". Subjective norms account for the normative expectations of other sources that are important to the person. If the person believes that most of these referents believe he should perform the behaviour, the perceived social pressure to perform it will increase to the extent that he is motivated to comply with each of these referents (Ajzen and Fishbein 1980).

Bright et al. (1993) suggested that in order to change an individual's subjective norms, there should be a change in the individual's perception of a particular group's need and willingness to comply with that group and that group's need. Donald and Cooper's (2001) resultsindicate that attitudes were more effective than subjective normsin predicting intention.

2.8.1.3. TRA's Limitations

Ajzen stated that TRA is limited in "*dealing with behaviours over which people have incomplete volitional control*" (Ajzen, p.181, 1991). Although TRA has proven to be successful in many studies, the theory works best when applied to behaviours that are under a person's volitional control (Ajzen, 1991). According to Taylor and Todd (1995), the theory allows no direct observation when applied; it is applied only with self-reported information, which is subjective.

2.8.2. The Theory of Planned Behaviour (TPB)

Ajzen (1991) developed TRA further by adding a third element – perceived behavioural control – to overcome the limitation of the original theory. TPB (See Figure 12) was introduced to predict behaviours in which individuals have incomplete volitional control. Ajzen (1991) suggested that behavioural intention can manifest in behaviour only if the individual has the required abilities and resources needed to perform the behaviour in question.
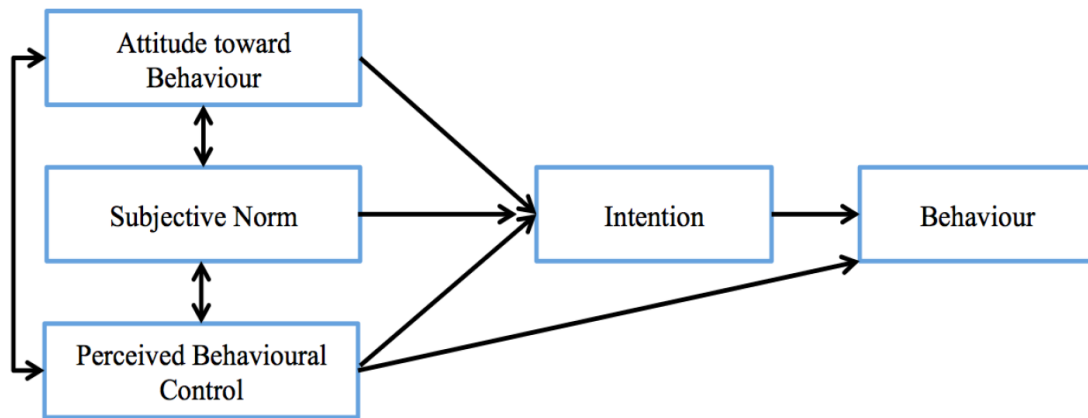
<div align="right">Adopted from Ajzen (1991)</div>

Figure 12: Theory of Planned Behaviour

Perceived behavioural control is "*the extent to which a person feels that the behaviour is easy to perform and under his or her control*" (Darker et al., 2007, p.94). Figure 7 illustrates how the effects of perceived behavioural control (possessing the skills, abilities and other resources to execute a specific action or behaviour), subjective norms (social environment) and attitude toward the behaviour jointly influence behaviour. An individual's beliefs about the power of both internal and external (situational) factors to inhibit or facilitate the behaviour are determined by control. Internal control refers to the individual's possession of the skills and capabilities required to perform the behaviour, while external control refers to the availability of resources and opportunities that facilitate the behaviour. The perception of behavioural control is a valid predictor of behaviour to the extent that it is realistic.

Mathieson et al. (2001, p.88) noted that TPB can be employed to "*predict a wide range of behaviours*". TPB has become one of the most frequently used theories to explain an individual's beliefs towards behaviours. TPB has been used successfully to investigate health behaviours (Courneya and McAuley, 1995), the adoption of voice mail technology (Benham and Raymond, 1996), understanding Internet purchases (Fogel and Schneider, 2010), the intentions to shop online (Kim and Park, 2005), and online shopping behaviours. TPB is similar to TAM in that it considers beliefs prior to the intention to predict behaviour such as antecedents to attitudes, subjective norms and perceived behavioural control.

2.8.2.1. TPB's Limitations

Despite the successful use of the theory in many areas, TPB works only when some aspects of the behaviour are not under volitional control and given the assumption that perceived behavioural control predicts actual behavioural control (Bright et al., 1993). Taylor and Todd (1995) identified that TPB requires an individual to be motivated to perform a specific behaviour, which they argued is a drawback of examining adoption behaviour. Additionally, TPB assumes that perceived behaviour control can be adapted to all situations despite the existence of non-controllable aspects of behaviour. Ajzen and Fishbein (2004) acknowledged these limitations and explained that the importance of these constructs might vary according to the situation, population and behaviour. Benbasat and Barki (2007) noted that TPB provides a useful lens for establishing TAM.

2.8.3. Technology Acceptance Model (TAM)

TAM (See Figure 13) was originally developed from TRA (Fishbein and Ajzen, 1975) and aims to examine why users' beliefs and attitudes affect their acceptance and rejection of information-communication technology. Davis et al. (1989) believed that usefulness and ease of use are the key determinants of information technology. Developed from TRA and TPB, TAM proposed identifying the relationshipsamong the determinants: perceived usefulness, perceived ease of use, attitude towards use, behavioural intention to use and actual usage. In TAM, behaviour can be predicted by measuring intention, which can be determined by the person's attitude toward using the technology. Perceived usefulness and perceived ease of use impact attitude (Davis et al., 1989).
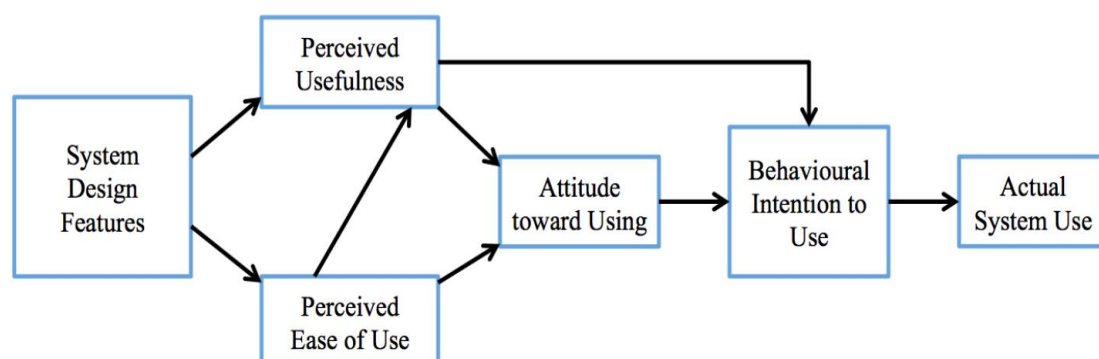
Adopted from Davis et al. (1989, p.985)

Figure 13: Technology Acceptance Model

TAM incorporates several important changes from the original TRA model.

a) TAM does not include subjective norms

b) Behavioural beliefs are treated as multidimensional

c) Neither usefulness nor ease of use is multiplied by the evaluation of outcomes

d) TAM postulates a direct link between usefulness and the intention to use

The purpose of TAM is "*to provide an explanation of the determinants of computer acceptance which is capable of explaining user behaviour across a broad range of end-user computing technologies and user populations, while at the same time being both parsimonious and theoretically justified*" (Davis et al., 1989, p.985).

The original TRA model defines beliefs by describing behaviour in terms of action, target, context and time, whereas TAM uses two constructs of beliefs: usefulness and ease of use. These constructs enable the researcher to explain attitudes toward the usage of different systems and those among various sets of users in a computer-mediated environment. In addition, the research results from Davis et al. (1989) showed that empirical evidence supported the direct influence of usefulness on behavioural intention.

TAM is the most influential research model in explaining users' information technologyadoptionbehaviour (Davis et al., 1989). TAM has been validated by various types of technology-related studies on various levels(see Table 9), such as theWorld Wide Web (Ledereret al., 2000), intranet (Horton et al., 2001), electronic commerce (Pavlou, 2003), technology used by online retailers (Kim and Forsythe, 2007), online shopping (Gefen, 2003; O'Cass and Fenench, 2003; Barkhi and Wallace, 2007; Chen and Tan. 2004), and mobile device interactions (Mallat, 2007; Ondrus and Pigneur, 2006; Cheong and Park, 2005; Liao et al., 2007).

The majority of these studies aim to examine the psychometric properties of the original TAM measurements and to retest hypothetical relationships accordingly. The research findings suggested that TAM is valid and reliable. Venkatesh and Davis (1996) found that perceived usefulness and perceived ease of use are significant antecedents of technology use, which makes TAM the most suitable for technology-related research studies. Additionally, Mathieson (1991) examined the performance of TRA, TPB and TAM, and found that TAM and TRA outperform TPB in explaining

technology acceptance and usage. Mathieson (1991) also suggested that TAM is easier to adopt and apply than other previous theoretical models, such as TRA and TPB.

Table 9: TAM Related Studies

Authors	Constructs / Area	Description
Lederer et al. (2000)	World Wide Web	To examine TAM for work related tasks with the World Wide Web as the application
Horton et al. (2001)	Intranet	To examine TAM in explaining intranet usage in UK organisations
Bock et al. (2005)	Attitude and knowledge sharing	To apply TAM that incorporates individual's knowledge sharing behaviour in organisational context
Pavlou (2003)	Electronic Commerce	To predict consumer acceptance of e-commerce by proposing a set of key drivers for engaging consumers in online transaction
Gefen et al. (2003)	Online shopping	To examine online trust by investigating vendor, safety mechanism at website and ease of use
Rauniar et al. (2013)	TAM and social media usage	To incorporate TAM, find drivers of social media usage behaviour
Park et al. (2014)	Social network games acceptance by player	To examine perceived mobility with perceived control as motivated factors
Lindsay et al. (2014)	Mobile policing	To examine the impact of mobile technology acceptance developed in single police force

More importantly, many studies have successfully adopted TAM to study the acceptance of Internet-related technology (Atkinson and Kydd, 1997; Chang and Cuhng, 2001; Lederer et al., 2000; Moon and Kim, 2001; Van der Heijden, 2003) and blog usage (Hsu and Lin, 2008). Therefore, using TAM as the basis for studying knowledge sharing behaviour in online social shopping is a highly valid approach.

2.8.3.1. Perceived Ease of Use

Perceived ease of use is "the degree to which a person believes that using a particular system would be free from effort" (Davis et al., 1989, p.985). In TAM, perceived ease of use and perceived usefulnessare important determinants of technology use (Davis et al., 1989; Mathieson, 1991).

Since Davis et al. (1989) suggested the importance of perceived ease of use, many studies have found that perceived ease of use has direct and indirect effects on perceived usefulness (Davis et al., 1989; Venkatesh and Davis, 1996; Agarwal and Prasad, 1999). Venkatesh and Davis (1996) suggested the importance of perceived ease of use, as a poor user interface impacts the rejection of information technology. Duray et al. (2000) found that in an online shopping environment, most of the process requires the consumer's involvement, and it is important to have a user-friendly interface.

To reinforce Duray et al.'s (2000) study of mass customisation, many research studies support that good online layout design, effective search engines and results, transparent navigational structures and user-friendly interfaces are conducive to usage (McKinney et al., 2002; Shim et al., 2001).

2.8.3.2.Perceived Usefulness

Perceived usefulness is "*the degree to which a person believes that using a particular system would enhance his or her job performance*" (Davis et al., 1989 p.320). Many researchers have studied perceived usefulness and address how external variables affect perceived usefulness. These external variables are computer training (Nelson and Cheney, 1987); social influence (Venkatesh and Divis, 2000); new technology in e-commerce (Gefen et al., 2003); computers in the workplace (Moon and Kim, 2001); e-service experience (Ku, 2014) and online learning (Saade and Bahli, 2005). Li and

Liu (2014) found that the perceived usefulness of an e-service has a positive effect on WOM, while Venkatesh and Davis (2000) proposed an extended TAM and found that social influence and cognitive instruments are important for increasing the user's perception of usefulness.

In TAM, perceived usefulness has been found to have a significant impact on attitudes toward online retailers (Kim and Forsythe, 2007). Users' intention to use an information technology is predicated, to a large degree, on the perceived usefulness of the system (Davis et al., 1989). Additionally, in the mobile technology literature, there is a certain amount of empirical evidence on users' intention to use mobile technology (Au and Kauffman, 2008; Mallat, 2007; Ondrus and Pigneur, 2006).

2.8.3.3. Perceived Enjoyment

Perceived enjoyment is "*the extent to which the activity of using the computer is perceived to be enjoyable in its own right, apart from any performance consequences that may be anticipated*" (Davis et al., 1992 p.113). Davis et al. (1992) found that perceived enjoyment was a significant determinant – alongside two others – of technology adoption.

Moon and Kim (2001) further supported this finding in their study, stating that perceived enjoyment is a key factor of a user's acceptance of the Internet. Additionally, Van der Heijen (2004) further noted the importance of perceived enjoyment, which is key factor predicting the intention to use. Many other research studies indicated the importance of perceived enjoyment and its influence on attitudes toward online retailers (Childers et al., 2001; Eighmey and McCord, 1998; Heijden and Verhagen, 2004). Kang and Lee (2010) considered SNSto be a pleasure-oriented information system in which users continue their use because an increase in perceived enjoyment increases motivation.

2.8.3.4. TAM's Limitations

Despite empirically proven results for the theoretical model, TAM has been criticised for its simplicity and lack of explanatory power due to a lack of reference to other variables (Bagozzi, 2007). TAM explained an equal amount of the variance; the model uses fewer variables because perceived usefulness and perceived ease of use

have proven key factors in explaining information technology usage.Additionally, Venkatesh et al. (2007) criticised TAM for its failure to examine the antecedents of perceived usefulness and ease of use. In later stages, further research on the determinants of usefulness and ease of use was conducted by Venkatesh and Davis (2000). By explaining those constructs, these authors managed to further develop TAM to establish a more complete theoretical model, TAM2. Then, Venkatesh and Bala (2008) extended TAM2 by including additional variables that act as antecedents to ease of use, creating TAM3.

Taylor and Todd (1995) indicated that excluding subjective norms weakens TAM's explanatory and predictive power, as the model ignores social influence in the acceptance of information technology. In TAM2, Venkatesh and Davis (2000) added to their theoretical model a social variable as an important construct. In first half of this chapter, this study emphasised the online community; the relationship between community members plays an essential role and influences behavioural decisions.

Social impact theory and social exchange theory explain consumers' behavioural factors in psychological terms, including emotions, beliefs, feelings and attitudes. Based on the above discussion of the usage of theoretical models, TAM appears as an appropriate theoretical basis for the proposed framework for this research. However, this study aims to investigate social influence, and therefore, TAM needs to be integrated with other external factors to serve the purposes of this research. The integration of other theories related to social influence will allow for a more complete understanding of the factors in this research.

2.8.4. Social Impact Theory

Social impact theory suggests that an individual's feelings, attitudes and behaviours can be influenced by the presence of others (Latane, 1981). Latane (1981, p.343) defined this theory as "any of the great variety of changes in physiological states and subjective feelings, motives and emotions, cognitions and beliefs, values and behaviour, that occur in an individual, human, or animal, as a result of the real, implied or imagined presence or actions of other individuals".Latane (1981) explained that feelings, motives and emotions, cognitions and beliefs, values and behaviours can influence an individual's psychological state, which is influenced by other individuals.

Traditional social impact theory argues that if one group of people is very close, then their physical distance must be close. However, in a modern online networking environment, distance is not a primary concern.

Social impact theory highlights three explicit dimensions: (1) strength, (2) immediacy, and (3) number. The conventional definition of strength includes age, socio-economic status, and title and can be used as a salient predictor of influence in human interaction. In addition to these traditional indicators, other characteristics that influence human interaction and communication have been identified: gender, race, social attractiveness, and body language (Miller and Brunner, 2008). Strength refers to the importance or social position of the source (Kwahk and Ge, 2012).

In an online community environment, several characteristics of strength are limited (Sproull and Kiesler, 1991). Immediacy is represented by a participant's contribution, which can be measured as the level of interaction. According to Miller and Brunner (2008, p.2977), "higher numbers of contribution and word totals will correspond with social influence", which illustrates that when users participate more in an online community, they are likely to have greater social influence within the group.

Finally, number is an independent variable in social impact theory and refers to the quantity of sources (Kwahk and Ge, 2012); it is simply defined as the number of sources of an impact relative to the number of targets of that impact (Latane, 1981) and is connected to group presence research. These three dimensions positively affect individuals' attitudes and behaviours in the offline environment.

Latane (1981) attempted to identify how other people in the social environment moderate impact. When Latane proposed social impact theory, the theory had its own limitation as a static theory in terms of the influence on an individual in a social environment (Nowak et al., 2000).However, the modern environment enables virtual communities that create new dynamics for individuals in a social environment. Social impact theory ties together the research results on various types of social influences, including conformity, compliance, obedience, and persuasion. The persuasions of the social impact have posited different processes to explain the effects of influence as majority versus minority influence (Levine and Hogg, 2009).

Kim and Srivasrava (2007) suggested that in the online environment, informational social influence is also found to affect individuals' decision making. Within an online social network group, consumers can obtain the necessary shopping information from others by observing shared experiences from early adopters and then deciding whether to make a purchase (Kim and Srivasrava, 2007). Consumers' awareness in online shopping involves the social environment, social media on which to share information and seeing others' experienceswith a product or service.

2.8.5. Social exchange theory

Social exchange theory was initially developed to analyse human behaviour (Homans, 1958). Individuals typically expect reciprocal benefits, such as trust, gratitude and economic return, when they act according to social norms (Blau, 1964). Social exchange theory proposes that social behaviour is the result of an exchange process whereby individuals weigh the potential risks and benefits associated with their social relationships (Blau, 1964). McFarland and Ployhart (2015) proposed a definition of SET in which risk is a cost and benefit is a gain within a relationship. The costs are resources that the individual provides, such as time and money, whereas gains are what individuals receive, such as friendship, support and fun.

The social relationship will be maintained over time when the gains outweigh the costs (McFarland and Ployhart, 2015).Many studies have used social exchange theory in related studies, such as e-commerce transactions (Salam et al., 1998), online social networks (Dwyer et al., 2007; Qin et al., 2011), buyer-supplier relationships (Hald et al., 2009) and online group buying (Tsai et al., 2011).

The social exchange model states that people and organisations interact to maximise their rewards and minimise their costs (Salam et al., 1998). SET's explanatory value influences social power (Molmet al., 1999), networks (Brass et al., 2004), psychological contracts (Rousseau, 1995) and leadership (Lidenet al., 1997).

The fundamental concept of social exchange theory is that relationships evolve over time into trusting, loyal and mutual commitments (Cropanzano and Mitchell, 2005). To achieve the relationshipsthey seek, people must follow certain "rules" of exchange. Emerson (1976, p.351) defined this particular situation ofexchange action as a "*normative definition of the situation that forms among or is adopted by the*

participants in an exchange relation". This exchange relation can lead to setting the "guidelines" for the exchange process (Cropanzano and Mitchell, 2005).

Gouldner (1960) suggested three types of reciprocity as the essence of social exchange theory: (1) reciprocity as a transactional pattern of interdependent exchanges, (2) reciprocity as a folk belief, and (3) reciprocity as a moral norm. This study reviews each of these traditional concepts of reciprocity in terms of the online knowledge sharing environment, as modern practices still share all three foundations of social exchange theory.

McFarland and Polyhart (2015) suggested that the traditional meaning and interpretation of social relationships evolved through social media and the online social environment. Social media enables technologically mediated platforms such as social networks, blogs and tweets (Boyd and Ellison, 2007; Valenzuela et al., 2009) and modifies the social context (McFarland and Polyhart, 2015). Smart mobile devices provide a convenient way to access online social networks regardless of time, place and money and thereby to maintain online social relationships. In terms of the gains in a relationship, individuals have greater access to and use of information, influence, social credentials and reinforcement of identity and recognition (Lin, 1999; McFarland and Polyhart, 2015). Motivated by SET, previous studies have developed several knowledge factors based on the notion that knowledge sharing and exchange can provide benefits (Davenport et al., 1998). In a study of blogs, the knowledge factor contributed significantly to user attitude (Hsu and Lin, 2008). In addition, social exchange theoryhas been used frequently in social networking research. Table 10 summarises prior studies that have used social exchange theory.

Table 10: Social Exchange Theory Related Studies

Authors	Constructs / Area	Purpose	Factors based on SET
Salam et al. (1998)	Electronic Commerce Transactions	To use social exchange framework to understand how trust economic incentive play roles in facilitation of electronic commerce over Internet	Trust
Gefen and Keil (1998)	Adoption of expert system	To examine the adoption of an expert system by a combined TAM and SET model where developer responsiveness was not only found strongly influenced both PU and PEOU, but also indirectly affected actual behaviour	Developer responsiveness
Hsu and Lu (2004)	Online game adoption	To apply TAM that incorporates social influence from SET and flow experience to predict users' acceptance of online games	Social norms
Dwyer et al. (2007)	Social Networking Sites	To compare perceptions of trust and privacy concern, along with willingness to share information and develop new relationships in social networking sites	Trust
Hsu and Lin (2008)	Acceptance of blog usage	To incorporate TAM, knowledge sharing and social influence factors to understand blog usages	Knowledge sharing factors, Social influence factors
Hald et al. (2009)	Buyer - seller relationship	To explores how firms are attracted to one another within buyer-supplier	Expected value Trust dependence
Tsai et al. (2011)	Online group buying acceptance	To examine the impact of technology acceptance factors and social factors on online group buying	Sense of virtual community, Trust in virtual community
Qin et al. (2011)	Online social networks	To investigate the determinants of user acceptance of online social networks, with attention given to the effects of social influence	Subjective norm

2.9. Critical Overview

Social commerce has quickly emerged as a new area of inquiry for both practitioners and researchers, suggesting the potential impacts of social media and social networking technologies and services via online platform. E-commerce is the main online platform subsidises mobile and social commerce as it holds such applications: direct marketing, online banking, e-government, e-purchasing, auction, online publishing, consumer services (as shown in Figure 2, p.10). Scholars have extensively studied e-, m-, and s-commerce. There are several frameworks that has been employed or expanded to outline and understand e-, m-, and s-commerce research. For example, Liang and Turban (2011) presented a framework that integrates six key elements. These include research themes, social media, commercial activities, underlying theories, outcomes, and research methods. The findings presents that social media and commercial activities are key elements and other elements are not significant as it gives new research directions.

Wang and Zhang (2012) use a four-component model to analyse the various facts of s-commerce revolution. The model emphasizes people, information, business, and technology by assuming people as the driving force for socialisation, commerce, technological advancement, and information creation. This study focuses on four elements and relationship between them.

Krackhardt's (1996) social network study is still widely used across social commerce literature. Sociogram serve as a simple visual illustration of social networks.

Additionally, most popular topic in social network services and media includes Facebook, by studying its features, user's behaviours and future trends (Baek et al., 2011). Facebook stands firmly top of online social network platforms and researchers have shown interest on user behaviour and motivation for linking on Facebook.

Zhou et al. (2013) have outlined the most frequent author keywords in the s-commerce literature. These keywords are branding, cash back, deals, discount, sales, selling, marketing, affordances, user interfaces, Facebook, mobile devices, shopping sites, information privacy, preference, customer satisfaction, social preference, and trust. The result from their study shows some evidence that previous studies focuses on topics such as "will s-commerce business models survive?" (Zhou et al., 2013, p. 65).

There are gaps in the literature of current approaches; consumer behaviour studies including the use of m-commerce, the adoption of such technology, user satisfaction, and knowledge sharing fail to appropriately consider the relevance of consumer-to-consumer (C2C) relationships and the presence of online social platforms.Previous literatures focus on each main stream of academic fields such as e-, m-, and s-commerce, user satisfaction and knowledge share. This research finds the gaps in the literature of finding relationships between each constructs, identifying the impact of s-commerce usage experience to both academics and practitioners.

2.10. Summary

This chapter begins with a review of existing studies relevant to e-commerce, m-commerce, online social interaction, s-commerce, knowledge sharing, and satisfaction. This study aims to develop a research framework to examine the factors that contribute to consumers' intention to purchase on an s-commerce site. Therefore, it is necessary to investigate key constructs that affect consumers' intention to purchase. This chapter discusses a review of existing studies related to m-commerce (smart mobile device usage), including the use of s-commerce, the role of social media, online community, satisfaction, and online knowledge sharing behaviour as key influencing factors.

The role of social media, networking sites and other platforms plays an integral role in the success of usage. Consumers are more driven to use online social communities as the development and usage of smart mobile devices increase. E-commerce continues to grow and poses a threat to traditional retailers, as the usage of m-commerce and s-commerce has significantly increased. Consumer participation has created a new phenomenon in the marketplace and has brought new challenges to the market. It is important to identify and examine key factors of this new market trend as consumers are moving to e-commerce and its subset platforms.

The second part of this chapter provides a theoretical background on the major concepts of the conceptual framework. This research reviews TRA, TPB, and TAM.

Chapter 3 Research Framework and Hypotheses

The following chapter reviews the proposed framework, its operational definitions and research hypotheses. Research framework constructs are explained and relating hypotheses are proposed.

3.1. Explanation of the Framework

Internet usage has evolved significantly from information searching to participating in virtual communities and a variety of shopping activities. The development of technology has encouraged users to use personalised mobile devices that enable instant Internet access and that make any transaction possible. Furthermore, users have a greater opportunity to build and maintain social relationships regardless of the time and place on devices and the online environment, as they require less effort than traditional face-to-face relationships.

When someone wants to purchase a product or service, they tend to search online to determine product information, price, reviews or feedback and delivery options.Consumers commonly read product reviews or feedback posted by others to help them make a decision. Not everyone prefers to write a review, but most would not mind readingabout others' post-purchase experience; therefore, retailers encourage consumers to leave feedback to benefit both parties.

The social media platform provides a virtual space to share, discuss and spread information. Posts and threads are created and shared by actual users, and information seekers are usually potential buyers. The information these potential buyers receive from other consumers can have an effect, and this information is only a few clicks away on an individual's smart mobile device. Others' post-purchase experiences can influence potential buyers, depending on whether those experiences are positive or negative, and the social media platform encourages consumers to act and to use s-commerce when they shoponline. This study aims to investigate why people prefer to share online shopping information, post-purchase product reviews and feedback in the online social environmenteven though they are not promised reciprocity. The role of social media and networks will be examined in connection with other users' satisfaction and knowledge sharing behaviour. The use of smart mobile devices will

positively influence other activities such as searching, writing, comparing, purchasing and sharing post-purchase experience because it provides consumers with convenience and mobility.The next section will examine how other consumers' opinions and experiences in the social environment – such as satisfaction/dissatisfaction – can influence one's intention to purchase.

3.2. Proposed Framework

In quantitative research, theory is often viewed as a scientific prediction. Kerlinger (1986, p.9) believed that a theory is "*a set of interrelated constructs (variables), definitions, and propositions that presents a systematic view of phenomena by specifying relations among variables, with the purpose of explaining natural phenomena*".

By this definition, theory is regarded as an interrelated set of variables that form propositions or that are linked by hypotheses, which specify the interrelationships among variables in terms of magnitude and direction. Creswell (2003) argued that the systematic view can be an argument, a discussion, or a rationale and aids in explaining or predicting phenomena that exist in the world.

Creswell (2003) argued that the development of quantitative research is different from that of qualitative research in terms of the use of language and focal points. A variable refers to a characteristic or attribute of an individual or an organisation that can be measured or observed and that varies among the people or organisations studied. Creswell (2003) believed that variables that are often measured in studies include gender, age, socio-economic status (such as race, social control, political power, and leadership) and attitudes or behaviours.

Creswell (2003) defined independent variables as variables that cause, influence, or affect outcomes or explain treatment, manipulated, antecedent or predictor variables. According to this definition, in this research, an independent variable such as m-commerce usage experience is thought to influence outcomes, such as purchase intention. Creswell (2003) explained intervening variables as variables that mediate the effects of the independent variable on the dependent variable. In this research, satisfaction, the use of s-commerce and knowledge sharing are intervening variables. After identifying the factors mentioned in the literature that affect online purchase

intention through online social networks, a theoretical framework can be developed using the hypotheses proposed in this research. A visual model is created to portray the relationships among these factors. This study proposes that a user's m-commerce usage experience will affect his or her s-commerce site usage experience, satisfaction toward s-commerce sites, and intention to share knowledge on s-commerce sites. In addition, it hypothesises that these factors will affect the user's intention to purchase on s-commerce sites using his or her smart mobile devices. Figure 14 shows this research's proposed framework.
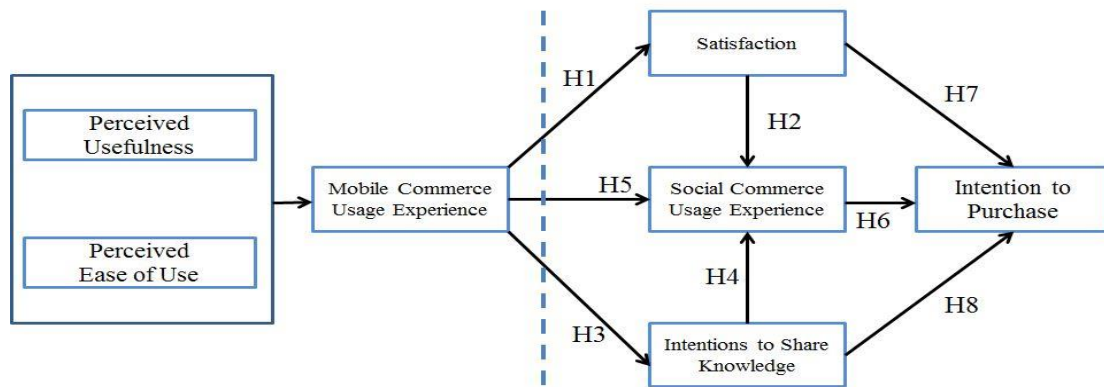
Figure 14: Proposed Framework

Table 11: Summary of Operating Definitions

Variables	Operating Definitions
Smart mobile device usage experience	Experience is defined as consumers' internal and subjective response to making contacts with their smart mobile device (Meyer and Schwager, 2007)
Satisfaction	Satisfaction is the result of a post s-commerce site usage and the evaluation of such sites when accessing them from smart mobile devices (Oliver, 1981)
Knowledge sharing intention	Knowledge sharing intention refers to an individual's desire todistribute acquired knowledge to others within an s-commerce community using his or her smart mobile device (Ryu et al., 2003)
S-commerce usage experience	S-commerce usage experience is defined as consumers' internal and subjective response to using their smart mobile devices to access s-commerce sites (Meyer and Schwager, 2007)
Intention to purchase	Purchase intention is defined as a user's desire to purchase from an s-commerce site via his or her smart mobile device (Deng and Li, 2004)

3.2.1. M-Commerceusage experience (perceived ease of use and perceived usefulness)

The first hypothesis this study examines the influence of smart mobile device usage experienceon consumers' satisfaction with an s-commerce site. Since 2011, sales of smart mobile devices such as smartphones and tablets have overtaken PC sales (Mintel report, 2014c); mobility and convenience are crucial as people rely more heavily on the Internet for tasks ranging from grocery shopping to social networking. The revolution of mobile applications and platforms has impacted consumers' usage of m-commerce and online social networks. M-commerce involves the sale of goods, services and content through the Internet and wireless connections (Au and Kauffman, 2008). In this study, users' mobile device usage experience is formed by their perceptions regarding mobile devices' perceived ease of use and perceived usefulness (Kim et al., 2010).

3.2.1.1. Perceived Usefulness

Perceived usefulness can be defined as the degree to which a consumer believes that using a particular mobile device will enhance the completion of a task, such as information gathering or performance (Davis et al., 1989). Scholars have studied perceived usefulness in different contexts, such as adapting e-commerce technology (Gefen et al., 2003), online booking (Kucukusta et al., 2015), and online shopping (Matute et al., 2016). The results of these studies suggest that perceived usefulness is an important antecedent of a user's satisfaction and attitudes toward a new technology. In other words, it is important for practitioners to ensure that potential users realise the benefits of a new technology, such as showing users how a mobile device can help them to obtain better deals and additional discounts.

3.2.1.2. Perceived Ease of Use

Perceived ease of use is defined as the degree to which a consumer believes that using a particular mobile device would be free from effort (Davis et al., 1989). Various studies have examined the effect of perceived ease of use, and the results consistently support that this factor can have a profound impact on a consumer's attitude toward new technology (Agarwal and Prasad, 1999; Davis et al., 1989; Venkatesh and Davis, 1996). For example, Duray et al. (2000) determined that in the online shopping environment, certain processes can be complex and challenging for users; therefore, it

is important to have a user-friendly interface to increase usage behaviours. A user-friendly interface includes a good online layout design, effective search engines, and transparent navigational structures(McKinnery et al., 2002; Shim et al., 2001).

3.2.2. Satisfaction

Cardozo (1964) adopted the concept of satisfaction in marketing research to measure customer satisfaction after the purchase of a service or product. Positive disconfirmation and satisfaction exist if a consumer's perceptions exceed their expectations (Oliver, 1981).Eggert and Ulaga (2002) considered satisfaction as a strong predictor for behavioural variables such as repurchase intentions, WOM recommendations, or loyalty. Oliver (1980) argued that marketing research adopted satisfaction as a measure of customers' post-purchase satisfaction.

Consumer satisfaction has a significant influence on purchase intentions (Bai et al., 2008; Kim et al., 2006) and plays an important role in determining end-user responses (Khalifa and Liu, 2003; Shiau and Luo, 2012). Devaraj et al. (2002) measured customer satisfaction in the e-commerce context and found that satisfaction is a key determinant for customers. Many researchers have studied satisfaction and demonstrated the actual difference between consumer expectations and actual satisfaction and, further, how satisfaction affects purchase intentions (Bai et al., 2008; Bhattacherjee, 2002; Kim et al., 2006).

LaTour and Peat (1979) suggested that satisfaction and attitudes are different factors of purchase intention; however, Hong et al. (2006) argued that attitudes include satisfaction, while Churchill and Suprenant (1982) and Lee (2010) argued that satisfaction is an attitude. This study follows previous studies that measured satisfaction as an attitude.

Agrebi and Jallais (2015) empirically tested hypotheses between TAM constructs (perceived ease of use, perceived usefulness and perceived enjoyment) and customer satisfaction in a mobile shopping environment. The results of the three constructs were significant, meaning that as the extent to which mobile purchasing is recognised as easy to use, useful and enjoyable increases, satisfaction increases.

This result confirms previous studies on the e-commerce context (Devaraj et al., 2002), mobile service context (Thong et al., 2006), information quality (Ghasemaghaei and Hassanein, 2015), transaction process, content reliability (Choi et al., 2008) and trust (Lin and Wang, 2006).

Based on the above literature, the following hypothesis is proposed.

H1: Consumers' smart mobile device usage experience will positively affect their satisfaction

The second hypothesis tested in this study is the relationship between s-commerce site satisfaction and consumers' s-commerce site usage experience. According to Hajli (2015), recommendations and referrals are important elements of s-commerce. In an online environment, customers rely on other consumers' experiences and satisfaction because they are unable to experience products or services prior to purchase (Senecal and Nantel, 2004; Hajli, 2015).

Giese and Cote (2000) suggested that satisfaction consists of three essential components: summary affective response, time of determination and satisfaction focus around product choice, purchase, and consumption. According to prior user satisfaction studies (DeLone and McLean, 2003; Giese and Cote 2000), satisfaction is a summary affective response tos-commerce activities and can vary in intensity.

According to Yu and Dean (2001) and Bennett and Rundle-Thiele (2004), the antecedents of satisfaction can be emotional or cognitive. Social interaction ties among members of an online social network or community have enhanced the intensity, frequency and breadth of the exchange of s-commerce usage experiences (Chang and Chuang, 2011). Strong social interaction ties likely originate from positive emotional reactions as a result of increasing online social community members' satisfaction through s-commerce use.

This study expects the relationship between satisfaction and s-commerce usage experience to be positive. Based on previous literature, this study proposes the following hypothesis.

H2: Consumers' satisfaction will positively influence their s-commerce usage experience

3.2.3. Knowledge sharing

The third hypothesis of this research addresses the relationship between consumers' smart mobile device usage experience and their intention to share knowledge on s-commerce sites via smart mobile devices.

Wang and Fesenmaier (2003) suggested that people could be less likely to interact and share knowledge if communication technology is confusing, technically demanding and difficult to use. Teigland and Wasko (2004) found that high participation in an online network was encouraged by the use of technology that allowed people to easily receive postings online, regardless of their physical location. Gray (2004) provided evidence that as the ease of technology use increases, the physical or mental effort needed decreases, and hence, the likelihoodthat people will use it to share knowledge increases.

The development of Web 2.0 based on the Internet contributed to a significant increase in the use of online social networks (Hajliet al., 2015). The development of mobile technology and the significant increase in smart mobile device use encouraged users to share knowledge via mobile devices.

According to Zhang et al. (2012), smart mobile devices increase the demand for users to use SNS and social media with multiple functions. Based on the literature reviewed, this study proposes that a consumer's smart mobile device usage experience will positively affect his or her intention to share knowledge via mobile devices.

H3: Consumers' smart m-commerce usage experience will positively affect their intention to share knowledge

The fourth hypothesis examined in this study addresses the effect of knowledge sharing intention on consumers' s-commerce site usage experience. Through the online community, users build strong relationships, a common vocabulary, the persistence of common meaning, a shared history and knowledge on a specific interest or community (Stanoeyska-Slabeva, 2002)..

According to McInerney (2002), knowledge can be acquired by reading and listening to others. In an online social network environment, individuals read posts and listen to others through smart mobile devices.

Sharratt and Usoro (2003) suggested that online conversations can occur through e-mail and online discussion forums. Pongsakornrungsilp and Schroeder (2011) added that s-commerce has transformed users'or participants'passive behaviour into active content creation, which encourages community members to share knowledge among themselves.

Erden et al. (2012) argued that the impact of online community on people's intention to share knowledge has not been a popular subject among researchers, and few studies have been conducted on the topic. To contribute to the literature, this study proposes that consumers will have better s-commerce site visitation experiences if they have stronger intentions to share knowledge on s-commerce sites when using smart mobile devices.

H4: Consumers' intention to share knowledge will positively influence their s-commerce usage experience

3.2.4. Use of s-commerce

The fifth hypothesis of this thesis addressesthe influence of smart mobile device usage experience on s-commerce usage experience. Animesh et al. (2011) found that interactivity in s-commerce platforms is a crucial element, suggesting that the use of social media, such as social networking and the adoption of technological features, are influential factors for s-commerce platforms.

In s-commerce, individual customers are exposed to various technological options and functions, including user-generated feedback, ratings and recommendations, which encourage consumers to continue their use of s-commerce (Zhang et al., 2014).

Nikou and Bouwman (2014) noted that the use of smart mobile devices to access online social networks enables individuals to build personal and professional relationships, communicate, share knowledge, and exchange e-mail and instant messaging with one another in real time. The same report found that by incorporating usage determinants with the TAM construct, the individual's intention to use mobile devices for online social networks and other platforms improves extensively. Based on the literature, the following hypothesis is proposed.

H5: Consumers' smart m-commerce usage experience will positively affect their s-commerce usage experience.

3.2.5. Purchase intention

The sixth hypothesis in this study relates to s-commerce usage experience and intention to purchase. Chang and Chen (2008) investigated purchase intentions in the online shopping environment and found that product quality and brand image influence a customer's final purchase intentions. These purchase intentions are closely attached to trust, which can be obtained through WOMon social media networks (Kim and Park, 2013).

S-commerce involves the use of social media that supports social interaction, communications, and user-generated content to assist in online transactions (Ng, 2013). Previous studies on s-commerce have shown that social media platform services (Curty and Zhang, 2013; Huang and Benyoucef, 2013), interactions (Leal et al., 2014), and relationships (Liang et al., 2011) positively influence consumers' purchase intentions.Furthermore, Balakrishnan et al. (2014) confirmed that social media usage experience can affect users' intention to make purchases on s-commerce sites. Based on the previous literature, the following hypothesis is proposed.

H6: Consumers' s-commerce site usage experience will positively influence their purchase intention

The seventh hypothesis of this study addresses satisfaction's influence on purchase intentions. Helson (1964) stated that a consumer's satisfaction depends not only on current objectives but also on his or her prior subjective experiences and expectations.

Based on previous studies (Bhattacherjee, 2001; McKinney et al., 2002), this research conceptualises satisfaction as an affective state representing the consumer's emotional reaction to m-commerce and s-commerce transactions. Kim et al. (2009) supported Oliver's (1999) finding that satisfied consumers exhibit a greater intention to use and repurchase from the same retailer, whileWOM reduces the risk of potential consumers looking for alternative products and services. Wen et al. (2011) also confirmed that satisfaction affects online repurchase intention. Based on the literature reviewed, the following hypothesis is proposed.

H7: Consumers' satisfaction will positively influence their purchase intention

This study's eighth hypothesis examines the effect of the intention to share knowledgeon consumers' intentions to purchase.

As mentioned above, knowledge sharing can occur on social media, discussion forums, and feedback or review pages.Many researchers found that on social media and online communities,WOM is not limited to passing on a message – it also alters consumer information processing (Castelevn et al., 2009; Kozinets et al., 2010).

Previous research by Chevalier and Mayzlin (2006) showed the significance of online WOM and its direct effect on purchase intention. Furthermore, Wang et al. (2012) and Kim and Park (2013) confirmed that knowledge sharing between users on social media positively influences purchase intentions. Based on the literature reviewed above, the following hypothesis is proposed:

H8: Consumers' intentions to share knowledge will positively influence their purchase intention

3.3. Summary

This chapter aims to develop a conceptual framework and to formulate a set of research hypotheses on the basis of the literature review in chapter 2. The theoretical model that modifies and expands TAM is adopted to better explain the determinants of consumers' intention to purchase, and eight relevant hypotheses are proposed based on the four constructs of smart mobile device usage experience, satisfaction, intention to share knowledge, and s-commerce usage experience. Then, the relationships between each hypothesis and the theoretical framework are discussed in detail.

Chapter 4 Research Methodology

4.1. Introduction

The following chapter aims to describe this thesis's methodology. It includes the research philosophy, survey design, sampling method and findings from the pilot study.

This chapter begins with a methodology review to illustrate the philosophical basis and posture of this research in the area of social science and knowledge of key methodological principles. It then elaborates on the present research's philosophical stance.

By addressing philosophical concepts and issues, this chapter will explore the philosophical paradigm that underpins the present study, its theoretical orientation and the need for appropriate research methods.

4.2. Research Philosophy

In academic research on marketing, research philosophies are important to validate resultant theories (Malhotra et al., 2012). Research philosophies refer to theories that relate to the ways of perceiving the world (Trochim, 2000), and they are necessary for indicating assumptions made about the nature of reality (ontology) and knowledge (epistemology); additionally, awareness of philosophical assumptions can both increase the quality of management and marketing research and enhance the creativity of the researcher (Easterby-Smith et al., 2015). Hussey and Hussey (1997) suggested that a paradigm provides a framework that includes an accepted set of theories, methods and ways to define data.

Gelo et al. (2008) noted that all research studies require a philosophical foundation and should select appropriate philosophies and approaches. Easterby-Smith et al. (2015) therefore suggested that understanding a research philosophy is very useful and significant to shape a study from its design to its conclusion. In the four rings model (including ontology, epistemology, methodology, methods and techniques), ontology and epistemology are central to the debate amongst philosophers (Easterby-Smith et al., 2015).

4.2.1. Ontology

Ontology means the theory of being,represents a specification of a conceptualisation and concerns the nature of reality and existence (Easterby-Smith et al., 2015). The subject of ontology is the study of the categories of things that exist or may exist in some domain (Huberman and Miles, 2002). In natural and social sciences, philosophers debate four types of ontological positions. Natural sciences concern the nature of reality lying between realism and relativism (Easterby-Smith et al., 2015), whereas social sciences cover the nature of social realities and people's behaviour, respectively labelled objectivism and constructivism (Bryman, 2015). However, these four ontology types are extremes. Therefore, Easterby-Smith et al. (2015) provided insight on four key ontology positions in continuum (see Figure 15).

Ontology positions of Natural

Ontology	Realism (Objectivism)	Internal Realism (Objectivism)	Relativism (Subjectivism / Constructivism)	Nominalism
Truth	Single truth	Truth exist, but is obscure	There are many truth	There is no truth
Facts	Facts exist and can be revealed	Facts are concrete, but cannot be accessed directly	Facts depend on viewpoint of observer	Facts are all human creations

Ontology positions of Social

Adopted from Easterby-Smith et al. (2015, p. 50)

Figure 15: Four Different Ontologies

Easterby-Smith et al. (2015) mentioned that the debate within natural sciences on the nature of reality focuses on realism versus relativism, but other philosophies narrowed realism to internal realism because it is never possible for a scientist to access reality directly; thus, internal realism was added to the continuum above. Social sciences primarily debate internal realism and nominalism.

First, realism addresses the view that laws and theories in the natural sciences are true, while science aims to provide proof of the truth (Ellis, 1988). Realism is compatible

with physicalism, emergent materialism, and dualism (Niiniluoto, 2002). In realism, the world is concrete and external, and the science can progress only through observation, meaning reality is questioned through absolute truths and facts determined by the laws of science (Easterby-Smith et al., 2015).

Second, internal realism assumes that a single reality exists with clear facts but without direct access. Easterby-Smith et al. (2015, p.48) used a 1950s "*bubble chamber*" experiment to illustrate a key element of internal realism. The experimental results can be seen only through an indirect approach. In internal realism, a single reality is perceived with facts; however, these facts may not be directly accessible (Putnam, 1987). In research, the only method to prove reality and existence is by obtaining indirect access; however, internal realism accepts that scientific laws, once discovered, are absolute and independent of further observation (Easterby-Smith et al., 2015).

Third, relativism is a position that suggests that scientific laws are created by people (Easterby-Smith et al., 2015) and that people hold different views and opinions that can be accepted by others. In relativism, truth can be found through debates and/or discussions between people. The development of theory is agreed upon through researchers' and others' subjective thoughts (Easterby-Smith et al., 2015).

Finally, nominalism is debated primarily among social scientists. As mentioned above, in the continuum model, nominalism states that there is no truth to explain the nature of social realities and those facts are created by people and with different social factors (Easterby-Smith et al., 2015).

4.2.1.1. Ontological Position Adopted in this Research

The ontological position underpinning the design of this study is internal realism. As stated in previous chapters, the purpose of this study is to investigate the contributions of online s-commerce users' responses, consumer satisfaction, and knowledge sharingto the intention to purchase behaviour. Users' experience is a subjective matter to every single individual; however, in marketing research, experiences by individual consumers are considered an objective matter. The internal realist approach argues

that the truth and nature of reality are grounded in common human nature (Ellis, 1988).

Part of this study also aims to identify any interlinking relationships between user satisfaction and knowledge sharing online and how they impact consumers' intention to purchase. Empirical studies on consumer satisfaction, knowledge sharing and s-commerce provide evidence of consumer behaviour and consumers' subsequent intention to purchase, dismissing the positions of relativism and constructivism, which are based on subjectivity (Easterby-Smith et al., 2015). Although experience is subjective to each and every individual, in marketing research, consumers' experiences with marketing stimuli are objective to the researcher.

4.2.2. Epistemology

Epistemology deals with how knowledge is required and seen by the researcher.Epistemology is a set of assumptions about the most appropriate methods to inquireon the nature of the world (Easterby-Smith et al., 2015); it is the branch of philosophy that studies knowledge. Epistemology investigates knowledge of knowledge and evidence to justify beliefs and truth about knowledge (Hannabuss, 2007), and along with ontological philosophy,it provides a useful foundation for research designs to improve the power to explain, predict and understand research outcomes (Malhotra et al., 2012). There are two primary epistemological paradigms (Malhotra and Birks, 2007), which differ in terms of their associations with either qualitative or quantitative methodologies (Bryman, 2015): positivism and interpretivism. Table 12 illustrates a summary of these two primary paradigms.

Table 12: Summary of Positivist and Interpretivist Characteristics

	Positivism	**Interpretivism**
Aim	Discovery	Invention
Starting Point	Hypothesis	Meanings
Reality	Objective	Subjective
Development of Theory	Deductive	Inductive
Outcome	Causality	Multiple Influences
Researcher and Participant	Independent	Interactive
Research Language	Formal	Informal
Value	Unbiased	Biased
Analysis / Interpretation	Verification	Descriptive and Subjective meanings
Data Collection Approaches	Quantitative	Qualitative
Research Design	Experiment, Controlled variables, Hypothesis testing	Case study, Observations
Structure	High structured	Low structure
Technique	Laboratory, Experiment, Surveys	Focus group, In-depth interviews

Positivism is a traditional epistemological philosophy, and a majority of scientists favour this paradigm in their research (Gartrell and Gartrell, 2002). Positivism assumes that the world exists externally, and its properties are measured using objective methods as opposed to subjective methods such as observation or intuition (Easterby-Smith et al., 2015). The positivist approach is scientific and objective, as it measures facts through statistical analysis or scientific laws (Gartrell and Gartrell, 2002). Positivist approaches employ quantitative methodologies to conduct statistical tests of the hypotheses, and the outcomes of thesetests imply a cause and effect relationship (Malhotra et al., 2012). Table 13 illustrates the advantages and disadvantages of positivism.

Table 13: Summary of Positivist Approach

Advantages of the Positivist	Disadvantages of the Positivist
Can be fast and economical	Methods tend to be inflexible and artificial
Can provide wide coverage of a range of situations	Not very effective in understanding processes or the significance people attach to actions
May be of considerable relevance to policy decisions especially when statistics are aggregated from large samples	Because they focus on what is this makes it difficult for policy makers to infer what future changes and actions should take place
	Not very helpful in generating theories

Adopted from Easterby-Smith et al., (2015)

In contrast to positivism, interpretivism proposes that reality does not exist in a concrete sense; however, it is the product of individuals' subjective and inter-subjective experience (Morgan and Smircich, 1980). Social sciences focus on personal values, experiences and subjective views instead of concrete facts and scientific laws (Gill and Johnson, 2012). Saunders et al. (2009) stated thatfeelings and attitudes cannot be measured or seen in reality and therefore must be interpreted. Unlike positivists, interpretivists believe that occurrences in the complex world cannot be generalised and reduced to numeric facts. Interpretivist approaches employ qualitative methodologies to make sense of meanings and to explain underlying reasons (Malhotra et al., 2012).

4.2.2.1. Epistemological Position Adopted

Malhotra et al. (2012) suggested that the ontological position selected by the researcher influences the researcher to make epistemological decisions because clear links are made between ontology and epistemology (Easterby-Smith et al., 2015). Table 14 illustrates the methodological implications of different epistemologies.

Table 14: Methodological Implications of Different Epistemologies

Ontologies	Realism	Internal Realism	Relativism	Nominalism
Epistemology / Methodology	Strong Positivism	Positivism	Constructionism	Strong Constructionism
Aims	Discovery	Exposure	Convergence	Invention
Starting Points	Hypotheses	Propositions	Questions	Critiques
Designs	Experiments	Large Surveys / Multi-cases	Cases and Surveys	Engagement and reflexivity
Data Types	Numbers and Facts	Mainly numbers with some words	Mainly words with some numbers	Discourse and Experiences
Analysis / Interpretation	Verification / Falsification	Correlation and regression	Triangulation and comparison	Sense making; Understanding
Outcomes	Confirmation of theories	Theory-testing and generation	Theory generation	New insights and actions

Adopted from Easterby-Smith et al. 2015, p.54

Internal realism was the ontological position adopted for this research, as outlined in section 4.2.1, and realist ontologies best fit positivist epistemologies (Easterby-Smith et al., 2015). Because these positions cannot be directly accessed, this research must indirectly infer the nature of this reality by conducting a survey with large samples. A positivist approach is adopted in this study because the data will normally be expressed in quantitative form, allowing propositions to be tested. Additionally, among the various epistemologies, positivism is a potentially fast and economical approach (Easterby-Smith et al., 2015).

4.2.3. Deductive and inductive reasoning

Malhotra et al. (2012) noted that theory development in research is determined by deductive or inductive reasoning. Table 15 illustrates a summary of deductive and inductive reasoning.

Table 15: Summary of Deductive and Inductive Reasoning

Deductive	Inductive
Scientific principles	Gaining an understanding of the meanings human attach to events
Moving from theory to data	In-depth knowledge of the topic
The collection of quantitative data	The collection of qualitative data
Highly structured approach	More flexible structure to change research emphasis

Adopted from Saunders et al. (2011)

Deductive reasoning can be defined as "*a study in which a conceptual and theoretical structure is developed and then rested by empirical observation. So, the deductive method is referred to as moving from the general to the particular*" (Collis and Hussey, 2013, p.8). Malhotra et al. (2012, p.197) defined deductive reasoning as "*a form of reasoning in which a conclusion is validly inferred from some premises, and must be true if those premises are true*". Therefore, conclusions about phenomena, events and realities are acquired by testing hypotheses and measuring facts (Gill and Johnson, 2010), which aligns with the positivist approach described above. The first step of the research study is to use theory to create a research hypothesis, which can lead to data collection, findings and the confirmation or rejection of the proposed hypothesis through the statistical results (Bryman and Bell, 2015).

Inductive reasoning is defined as "*a study in which theory is developed from the observation of empirical reality. So it involves moving from the specific to the general*" (Collis and Hussey, 2013, p.8). Inductive reasoning begins with the observation of the subject or topic in question, the collection of data and then seeking answers (Saunders et al., 2011). An important factor of inductive reasoning is that the researcher does not imply any prior thoughts or theories on what they may discover and examine before embarking on research. Theory is generalised through grounded theory to analyse data and to generate new theories (Malhotra et al., 2012).

4.2.3.1. Research Approach Adopted in this Research

It is important that the researcher avoid suggesting or guidingtoward any biased path, and he or she can use only the findings from the observations (Bryman and Bell, 2015).

This research will employ deductive reasoning to facilitate behavioural model development through exploring inter-relationships between factors such as consumer satisfaction and online knowledge sharing. This research aims to apply a structural equation model and requires the collection of quantitative data, which are suitable to use for deductive reasoning.

4.3. Data Sources

This research employed two data sources: primary and secondary data. Both forms of data are important in research practice because they provide researchers with different insights, knowledge and information to achieve research aims and objectives (Saunders et al., 2011). The following sections review the primary and secondary data employed in this research.

Primary data are collected by the researcher to assist the research project (Malhotra and Birks, 2007)for the specific purpose of a particular study (Kotler and Armstrong, 2004), and they may not have been collected before (Bryman and Bell, 2015). After the researcher has collected and thoroughly analysed secondary data, he or she can select the appropriate approach for primary data collection. Primary data are importantbecause there may not be existing data available to address a specific research area or problem directly. These data can be collected by selecting different approaches, such as observation, experimentation and questionnaire (Kotler et al., 2003), which shows that the data can be quantitative or qualitative depending on the approach used by the researcher. The most common method of primary data collection is the survey method (Malhotra and Birks, 2007), which often requires participants. According to Creswell (2003), the most significant advantages of primary data are their fitness and accuracy relative to secondary data. However, primary data collection is considerably more costly and time consuming (Malhotra and Birks, 2007).

Secondary research is a fundamental element of a successful research project (Malhotra and Birks, 2007) because it assists in defining the research topic and allows a research approach to be developed (Saunders et al., 2011). Secondary research produces data that are collected by other researchers and that are readily available to others (Malhotra et al., 2012).

In conducting research, it is necessary toreview similar studies conducted by other scholars; existing typologies and statistical results could save time and effort because the researcher will not needcollect identical or similar primary data (Malhotra and Birks, 2007). The dataset can be qualitative or quantitative. According to Saunders et al. (2011), the data can be raw data – that is, original data collected by a researcher that have been processed little – or processed data, which have been summarised or reviewedby other scholars.

The key advantage of using secondary data in research is their ease of use and accessibility for the researchers; these data are readily available at any time and place through online platforms and are inexpensive to obtain (especially for journals, reports and financial data), leading to time and money savings for the researcher (Malhotra et al., 2012; Saunders et al., 2011). However, researchers must be aware of the reliability and accuracy of research data (Malhotra et al., 2012). Data collection must be carried out from credible sources such as government books, journals, commercial marketing firms or databases created by organisations (Creswell, 2003), interview transcripts, media content, census surveys and organisational publications (Saunders et al., 2011). Although the Internet provides access to an enormous amount of information and is used significantly, as in the case of Wikipedia, its credibility is questionable because information found onlineis often user-generated information (Flanagin and Metzger, 2011; Pirolli et al., 2009). Finally, the secondary data collected may not fit the research purpose perfectly, or only a small portion of the data can be used because the research problems, objectives and ultimate aims are different (Malhotra et al., 2012). Therefore, it is important to collect data that are relevant for the research purpose. When a researcher undergoesa rigorous review of the related literature to collect secondary data, the researcher is equipped with prestige knowledge in that research area (Saunders et al., 2011).

Literature reviews and primary data are two important data sources for this research. Both data sources have advantages and disadvantages. To achieve this research's objectives and its ultimate aim, it is essential to employ both data sources to strengthen its findings, increase the validity and reliability of the final results (Malhotra et al., 2012; Saunders et al., 2011), and improve the understanding of the relevant literature and data with relevant knowledge. Therefore, this study uses both primary and secondary data sources.

The types of secondary data sources used in this study include industrial reports, e.g., Mintel, Korean National Statistics for mobile subscriptions and online shopping annual reports, and information from social network service platform websites, which will help define the research context from the industrial perspective; additionally, academic journals and relevantstudies will provide theoretical insights and findings to help formulate the research design, which will help validate and justify the outcomes with necessary support. The primary data will be quantitative data; an offline survey questionnaire will be conducted to measure and test the hypotheses of this study.

4.4. Research Design

The research design is the framework for conducting a study (Malhotra et al., 2012). Tull and Hawkins (1993, p.184) defined research design as "the specification of procedures for collecting and analysing the data necessary to help identify or react to a problem of opportunity, such that the difference between the cost of obtaining various levels of accuracy and the expected value of the information with each level of accuracy is maximised". An exemplary research design seeks to minimise cost and maximise data accuracy. The research design will clarify the details in depth and guide the researcher to achieve the ultimate goal of the research. The procedure to select an appropriate research design can depend on whether the research aims to test, discover or create theory (Gill and Johnson, 2010).

Gill and Johnson (2010) illustrated a successful research design process in detail, as summarised in Table 16.

Table 16: Research design process

Steps	Design Process
1	Delineate carefully the questions or problems the research is attempting to tackle -> Must identify what is known as the "theoretically dependent variable"
2	Identify the phenomena or factors whose variation, according to the theory or hypothesis that research is testing, explains or causes changes in research's dependent variable
3	Operationalize dependent and independent variables -> Allows researcher can observe, vary or manipulate if necessary
4	Neutralize or control the effects upon the dependent variable, "extraneous variables"

Adopted from Gill and Johnson (2010)

The above basic four-step research design process helps develop research that aims to test hypotheses generated from theory through data collection,determining whether the theory survives attempts to falsifyor disprove it (Gill and Johnson, 2010).

Cassell and Symon (1994) stated, "the validity is attained if the researcher instigates a continuous process, integrated with theory, requiring the researcher to continuously assess assumptions, revise results, re-test theories and models and reappraise the limitations of the research methodology". However, the research design described above is a more general design of the research study. Therefore, this research decided to follow the research design established by Malhotra et al. (2012), who suggestedthat there are two broadly classified research design categories: exploratory research and conclusive research (see Figure 16).
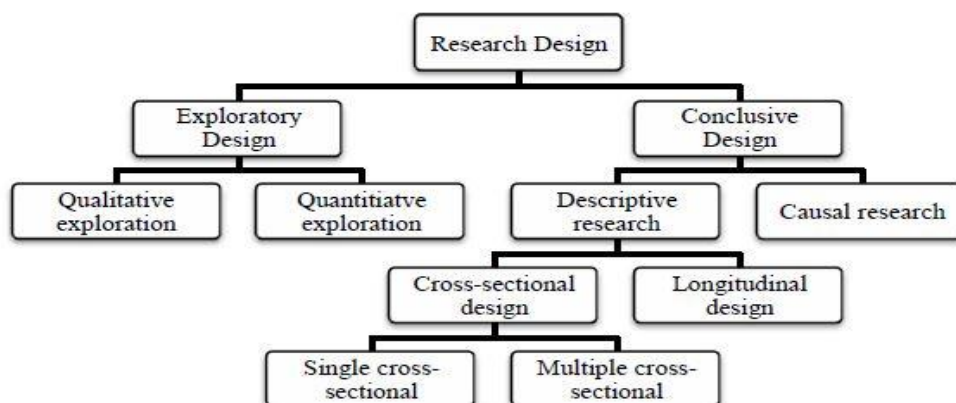
Adopted from Malhotra et al. (2012, p.87)

Figure 16: Classification of Research Designs

The following sections review the two broad categories and indicate the design adopted for this research.

4.4.1. Exploratory researchVS Descriptive Research

Exploratory research primarily provides insightson and an understanding of marketing phenomena (Malhotra et al., 2012). In general, an exploratory research design in which the subject of the study cannot be measured with quantitative methods is used (Malhotra et al., 2012). However, the research design model above shows that exploratory research can employ both qualitative and quantitative methods. Exploratory research is meaningful in any situation in which one does not have enough understanding or background knowledge to proceed with the research subject. Table 17 summarises the exploratory design.

Table 17: Summary of the Use of Exploratory Research Design

No	Steps
1	To obtain some background information where absolutely nothing is known about the problem area
2	To define problem areas fully and to formulate hypotheses for further investigation and / or qualification
3	To identify and explore concepts in the development of new product or forms of marketing communications
4	During preliminary screening process such as in new product development, in order to reduce a large number of possible projects to smaller number of probable ones
5	To identify relevant or salient behaviour patterns, beliefs, opinions, attitudes, motivations, and to develop structures of these constructs
6	To develop an understanding of the structure or beliefs and attitudes in order to aid the interpretation of data structure in multivariate data analyses
7	To explore the reasons that lie behind the statistical differences between groups that may emerge from secondary data or surveys
8	To explore sensitive or personally embarrassing issues from the participants' and / or the interviewer's perspective
9	To explore issues that participants may hold deeply, that are difficult for them to rationalise and that they may find difficult to articulate
10	To data-mine or explore quantitative data to reveal hitherto unknown connections between different measured variables

Adopted from Malhotra et al., 2012, p.89

Conclusive research primarily describes specific marketing phenomena, tests specific hypotheses and examines specific relationships (Malhotra et al., 2012). Panneerselvam (2004) noted that conclusive research focuses on drawing definite conclusions for implementation. In contrast to exploratory research described in Figure 11, conclusive research breaks down into more details of research, either descriptive or causal, and descriptive research designs may be either cross-sectional or longitudinal (Malhotra et al., 2012). In conclusive research, researchers need to describe market characteristics, measure marketing phenomena, use a large sample and make specific predictions (Malhotra et al., 2012). Table 18 summarises the conclusive design.

Table 18: Summary of the Uses of Conclusive Research Design

No	Steps
1	To describe the characteristics of relevant groups, such as consumers, salespeople, organisations, or target market
2	To estimate the percentage in a specified population exhibiting a certain form of behaviour
3	To count the frequency of events, especially in the pattern of consumer behaviour
4	To measure marketing phenomena to represent largest populations or target markets
5	To be able to integrate findings from different sources in a consistent manner, especially in the use of marketing information systems and decision support systems
6	To determine the perceptions of product or service characteristics
7	To compare findings over time that allow changes in the phenomena to be measured
8	To measure marketing phenomena in a consistent and universal manner
9	To determine the degree to which marketing variables are associated
10	To make specific predictions

Adopted from Malhotra et al., 2012, p.90

4.4.3. Research design adopted in this research

A summary of the characteristics of the exploratory and conclusive research designsis presented in Table 19. The table presents comparisons of the two research designs in terms of their objectives and characteristics (Malhotra et al., 2012).

Table 19: Differences between Exploratory and Conclusive Research

	Exploratory	**Conclusive**
Objectives	To provide insights and understanding of the nature of marketing phenomena	To test specific hypotheses and examine relationships
	To understand	To measure
Characteristics	Information needed may be loosely defined	Information needed is clearly defined
	Research process is flexible	Research process is formal and structured
	Samples are small	Sample is large
	Data analysis can be qualitative or quantitative	Data analysis is quantitative

Adopted from Malhotra et al., 2012, p. 87

Based on its nature and the philosophies underpinning the research, this study adopts a conclusive research design. Tull and Hawkins (1993) suggested that the ideal research design consists of six stages: a) literature review; b) definition of objectives and hypothesis building; c) choice of research instrument; d) primary data collection; e) data analysis and f) reporting. This research's ultimate aim is to test hypotheses and examine the proposed framework through quantitative analysis; therefore, a conclusive research design is the appropriate selection.

4.5. Data Collection Approaches

Qualitative and quantitative approaches are the two main data collection methods. Researchers choose a data collection approach based on the nature of their research (Malhotra et al., 2012). In some cases, researchers need either one approach or the other or a hybrid form of data collection, which can be referred to as a mixed methods approach (Saunders et al., 2011). The decision to adopt either qualitative, quantitative or mixed methods approaches can be made by considering the researcher's research philosophies and adopted philosophical positions (Easterby-Smith et al., 2015).Table 20 illustrates three methodological approaches.

Table 20: Summary of Data Collection Methods

Quantitative	Mixed	Qualitative
Pre-determined	Both predetermined and Emerging methods	Emerging methods
Instrument based questions	Both open and closed ended questions	Open ended questions
Performance data, Attitude data, Observational data, and Census data	Multiple forms of data drawing on all possibilities	Interview data, Observation data, Document data, and Audio-visual data
Statistical analysis	Statistical and text analysis	Text and image analysis
Statistical interpretation	Across databases interpretation	Themes, patterns interpretation

Adopted from Creswell (2003)

4.5.1. Quantitative approach

Quantitative research focuses on collecting numerical data to analyse and test the proposed hypotheses and thereby to qualify research findings (Saunders et al., 2011). Quantitative research is an approach to testing objective theories by examining the relationships among variables (Creswell, 2014). These variables can be measured, typically with instruments, such that numbered data can be analysed using statistical tools (Creswell, 2014). Quantitative methods have been found to be effective in conducting consumer surveys (Malhotra et al., 2012). The quantitative research approach reflects positivist epistemologies by taking a deductive approach to theoretical reasoning. Therefore, the research findings can be tested and re-tested for

validity and reliability (Bryman and Bell, 2015). Based on the literature and on this study's philosophical stance, this research adopted a quantitative approach.

4.6. Surveys

Surveys are the main quantitative method employed in existing research and is defined as "*using a structured questionnaire administered to a sample of a target population, designed to elicit specific information from participants*" (Malhotra et al., 2012, p. 327). Churchill and Iacobucci (2002, p.122) explained that "surveys… rely on a sample of elements from a population of interest that are measured at a single point in time". The survey strategy is usually associated with the deductive approach and is commonly used in business management research. Therefore, it tends to be used for exploratory and descriptive research (Saunders et al., 2011). Questionnaires may ask participants about their behaviour, intentions, attitudes, awareness, motivations, and demographic and lifestyle characteristics (Malhotra et al., 2012), and surveys allow researchers to collect data that can be analysed quantitatively using descriptive and inferential statistics. These statistical analysis results can be used to suggest possible reasons for particular relationships between variables and to produce models of these relationships (Saunders et al., 2011).

Malhotra et al. (2012) classified survey methods into four major modes: online, telephone, face-to-face and postal surveys. Surveys are self-completed questionnaires (Bryman, 2015), and in most questionnaires, respondents select from a predetermined set of fixed responses (Malhotra et al., 2012).

Online surveys continue to grow in popularity amongst researchers because the online survey experience can be personalised to individual participants and is much cheaper and faster to administer than other survey methods (Malhotra et al., 2012). Face-to-face survey methods are declining in popularity mainly because of the cost involved; however,in face-to-face surveys, the response rate can be higher than that of other methods, and it is more efficient for the participant to meet with interviewer, especially in surveys conducted on the street (Malhotra et al., 2012).

The purpose of using a survey approach in this study is to examine and explain relationships between variables, particularly cause and effect relationships (Saunders et al., 2011). In surveys, the response rate is important because many studieshave

achieved low response rates, such as 18, 21 or 25%, which are unacceptable (Bryman and Bell, 2015). Therefore, this research employed a face-to-face survey method because higher efficiency and return ratesfor the questionnaires were considered a priority.

4.6.1. Questionnaire Design

The key to success in designing a self-completed questionnaire is to make it simple, easy to understand and easy to answer. Easterby-Smith et al. (2015) suggested five principles of good questionnaire design. The first rule of thumb is listed below.

1. Each item should express only one idea
2. Avoid jargon and colloquialisms
3. Use simple expressions
4. Avoid the use of negatives
5. Avoid leading questions

Adopted from Easterby-Smith et al. (2012, p.239)

Brace (2004) suggested that all questionnaires translate the information needed into a set of specific questions that the respondents can and will answer. According to Webb (2002) and Dillon et al. (1994),survey questions should be formulated in a thorough research of the literature, and the answers should contribute to the research objectives.

Crask et al. (1995) argued that a quantitative research method can offer two types of response formats: open- and closed-ended questions. Closed-ended questions are more commonly used because they may save respondents time in completing the questionnaire by selecting answers from given options rather than writing freely in an answer column. The general questions should be introduced first, followed by more specific and topic-related questions (Webb, 2002), which should be worded simply and logically placed (Crask et al., 1995). Malhotra et al. (2012) furtherstated that the questionnaire format andthe spacing and positioning of questions can have a significant effect on the results of self-administered questionnaires. The questions are selected from the related literature shown in Table 21.

The questionnaire was printed in four pages, with a consent form included on the front page. This consent form included a description of the purpose of this research

study and the contact details for the researcher and supervisor team. The survey was printed on both sides of A3 paper, folded into A4 paper, and presented as a booklet.

The questionnaire was divided into two sections. The first section addressed the screening process, including the use of smartphones. The second section related to the proposed model constructs, such as m-commerce, satisfaction, knowledge sharing, the use of s-commerce and the intention to purchase. The final section dealt with demographic characteristics, including gender, age group and occupation.

Sekaran (2006) suggested that five- and seven-point Likert scalesare most commonly used in surveys; this research employed a five-point scaleto study the respondents' behaviour in relation to these factors, where 1 indicates "Strongly disagree" and 5 indicates"Strongly agree".

Table 21: Questionnaire

Measure	No	Questions	Reference
Smart mobile devices usage experience	1	Mobile technology offers me the ability to receive information and perform transaction from virtually any location at anytime	Yen et al. (2010)
	2	Mobile technology can be personalized to represent information in ways appropriate to me	
	3	Mobile technology providers can disseminate the relevant information for a particular location based on profile data built on my situation, profile and location	
	4	Mobile technology offers opportunities to expand a client-based by providing value-added services to me heretofore difficult to reach	
	5	I believe the use of smart mobile devices would improve my performance when participating in s-commerce activities	Yen et al. (2010)
	6	I believe the use of smart mobile devices would enhance my effectiveness when participating in s-commerce activities	
	7	I found mobile technology useful when participating in s-commerce activities	
Satisfaction	8	When using smart mobile devices… I feel very satisfied with my overall shopping experience on s-commerce site X in general	Shiau and Luo (2012)
	9	I feel very pleased with my overall shopping experience on s-commerce site X in general	
	10	I feel very contented with my overall shopping experience on s-commerce site X in general	
	11	I feel absolutely delighted with my overall shopping experience on s-commerce site X in general	

Measure	No	Questions	Reference
Satisfaction	12	I feel safe when I use s-commerce site X	Morgan-Thomas and Veloutsou (2013)
	13	S-commerce site X's developers are genuinely committed to my satisfaction	
	14	Shopping information by s-commerce site X gives me a feeling of trust	
	15	I have trust in s-commerce site X's online community	Shiau and Luo (2012)
	16	S-commerce site X's online community gives me a trustworthy impression	
Intentions to share knowledge Intentions to share knowledge	17	Sharing my information on s-commerce site X improve my image	Shiau and Luo (2012) Hsu and Lin (2008)
	18	People in our life who share their information s-commerce site X have more prestige than those who does not	
	19	Sharing information on s-commerce site X improves others recognition to me	
	20	I earn respect from others by sharing my information on s-commerce site X	
	21	When I share my information about s-commerce site X, I believe that I will receive other information from online group buying vendors	Shiau and Luo (2012)
	22	When I share my information about s-commerce site X, I believe that I will receive other information from online group buying vendors	
	23	When I share my information about s-commerce site X, I expect to get respond when I need from online group buying vendors	
	24	I find that my participation in the sharing of information on s-commerce site X can be advantageous to me and from online group buying vendors	
	25	I think that participating in the sharing of information on s-commerce site X can improve the reciprocal benefit	

Measure	No	Questions	Reference
Intentions to share knowledge	26	I like to share practical knowledge or skills with others on s-commerce site X	Baek et al. (2011)
	27	I like to express myself freely on s-commerce site X	
	28	I like to provide information on s-commerce site X	
	29	I like to share information that might be useful to others on s-commerce site X	
	30	I like to share information about my special interests on s-commerce site X	
	31	I like to share information that might be entertaining to others on s-commerce site X	
	32	I like to get feedback on information I have found on s-commerce site X	
	33	I like to share news on s-commerce site X	
	34	I like to share hard to find information on s-commerce site X	
	35	I try to share knowledge with online community members	Erden et al. (2012)
	36	I plan to share knowledge with online community members	
	37	I openly share information that I gained from news, magazines and journals with other online community	
S-commerce usage experience	38	Searching on s-commerce site X improve my ability to find what I want	Morgan-Thomas and Veloutsou (2013)
	39	It is very convenient to search for information on s-commerce site X	
	40	Searching on s-commerce site X provides speedy answers to my questions	

Measure	No	Questions	Reference
S-commerce usage experience	41	I feel the product information given on s-commerce site X is storing	Prendergast et al. (2010) and Kim and Park (2013)
	42	I feel the product information given on s-commerce site X is convincing	
	43	I feel the product information given on s-commerce site X is persuasive	
	44	I feel the product information given on s-commerce site X is powerful	
	45	I find s-commerce site X is very useful	
	46	I find s-commerce site X is very easy to use	
	47	I find s-commerce site X is very reliable	
Intention to purchase	48	I am likely to purchase products / service on s-commerce site X	Kim and Park (2013)
	49	Given the opportunity, I would consider purchasing product on s-commerce site X in near future	
	50	It is likely that I will actually purchase product on s-commerce site X in the near future	
	51	Given the opportunity, I intend to purchase products on s-commerce site X	
	52	I would like to recommend s-commerce site X to my friend	

4.6.2. Sampling

Sampling is an important part of the research process (Malhotra et al., 2012). In this study, the population of interest comprised of smart mobile device users in South Korea, including smartphone and mobile tablet users. Hussey and Hussey (1997) described a sample as a subset of a population, and Henninket al. (2010) suggested that in a research study, a small sample of a population can be chosen to generalise to the population as a whole. Kothari(2009. P. 152) suggested, "*sampling is a process of obtaining information about an entire population by examining only a part of it*", while Malhotra et al. (2012) argued that sampling techniques are broadly classified into non-probability and probability techniques, as illustrated in Figure 17.
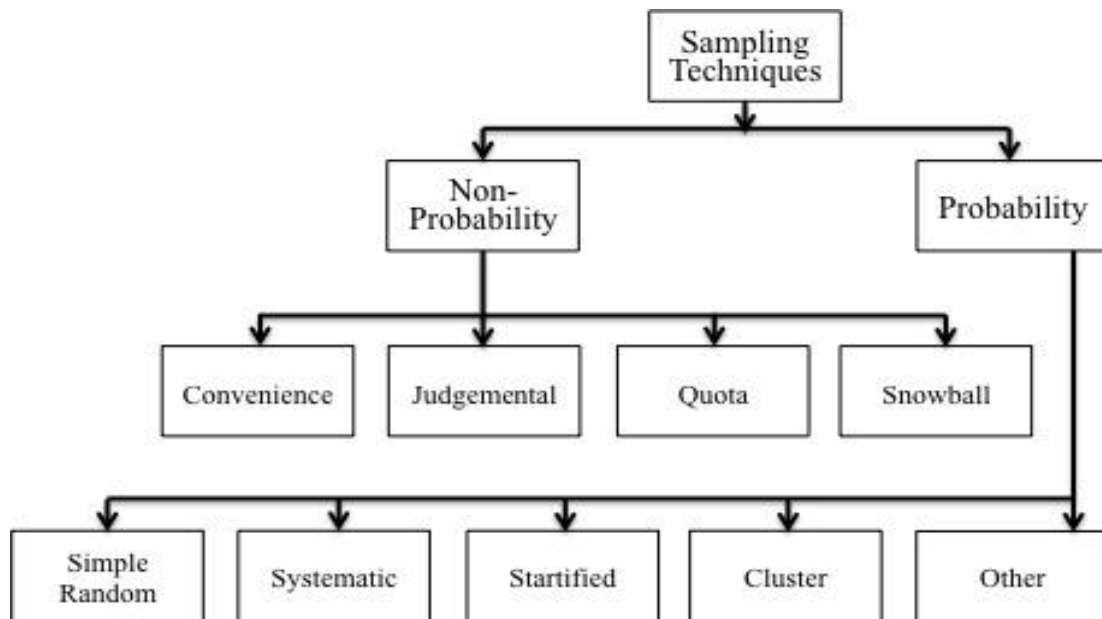
Figure 17: Classification of Sampling Techniques

4.6.3. Non-probability sampling VS probability sampling

In non-probability sampling, some elements of the population have no chance of selection (Saunders et al., 2011), depending on the personal judgement of the researcher (Malhotra et al., 2012). Researchers do not use chance selection procedures to select the sample or to eliminate unsuitable samples. Several key examples of non-probability sampling techniques include judgmental sampling, convenience sampling, quota sampling and snowball sampling (Malhotra et al., 2012). These four techniques are summarised in Table 22.

In a probability sample, every unit in the population has a chance of being selected (Malhotra et al., 2012). Examples of probability sampling techniques include simple random sampling, systematic sampling, stratified sampling and cluster sampling (Malhotra et al., 2012).

4.6.4. Quota sampling

Quota sampling is a "*non-probability sampling technique that is a two-stage restricted judgemental sampling. The first stage consists of developing control categories or quotas of population elements. In the second stage, sample elements are selected based on convenience or judgement*" (Malhotra et al., 2012, p.504). In this research, the population is assigned to age subgroups to develop population quotas.

Table 22: Summary of Non-Probability Sampling Technique

Sampling Methods	Description
Convenience	Researchers use convenience elements to obtain a sample. Participants are usually selected because they happen to be in vicinity at that particular time
Judgmental	A form of convenience sampling where the population elements are selected based on the researcher's judgement that they believe are representative of the population of interest
Quota	A two-stage restricted judgmental sampling where the first stage concerns developing control categories or quotas of population elements; and the second stage is where the sample is selected based on convenience or judgement
Snowball	A process of finding one participant through another. Appropriate for cases which have desired characteristics

Adopted from Malhotra et al., 2012 pp. 502-506

4.6.5. Sampling technique adopted

This research adopted a non-probability sampling technique, and the sample included smart mobile device users in South Korea, including smartphoneand mobile tablet users. This research aimed to understand mobile device users' knowledge sharing when connected to an online social network; therefore, the sample population was selected among mobile device users in South Korea.

A 2014 report found that in South Korea, 113 mobile phone subscribers were registered for every 100 individuals, exceeding one mobile phone per person. The report also found that 25% of the population owned mobile tablet devices, demonstrating significant usage of smart mobile devices in South Korea (Statistic of Korea, 2015).

This research divides the population from a census report (Statistics of Korea, 2015) into five subgroups categorised by age in order to eliminate sections of the population who were unlikely to use smart mobile devices. The six age groups wereunder 18,19 to 25, 26 to 35,36 to 45, 46 to 55 and 56and above. The census report included 19 sub-age groups, and the 9 groups for ages 15 to 59 had the highest population density: over 3 million.The target population was not limited togender; however, young

children and senior generations werelimited because they were unlikely to own smartphones andto use smart functions oronline social networks.

The appropriate sample size should have an item-to-response ratio of approximately 1:4 to 1:10 for every set of scales for factor analysis (Hinkin, 1995; Hair et al. 1995).Balnaves and Caputi (2001) suggested that a large sample is no guarantee of accuracy in a survey, and it is important to use the correct sample proportion. This research sets five age groups, and the target groups are ages 20 to 29 and 30 to 39. Although the sample population covers a wide range of ages, the 20 to 39 group would include the majority of participants,because they are considerably active in using smart mobile devices and connecting toonline social media and network platforms, as young adults adopt mobile services more quickly in general (Bigneet al., 2007).

In quantitative research, Tabachnick and Fidell (2007) noted that a minimum sample size of 300 is acceptable. According to Balnaves and Caputi (2001), there are few occasions in behavioural research where samples smaller than 30 or larger than 500 can be justified. Therefore, this research chose a sample size of 500 to achieve accuracy and reliable results through the survey questionnaire.

Because this research focuses on users of mobile devices with smart functions, such as an Internet connection, online social networking and shopping, the target audience for this study does not include people who do not use smart mobile devices. Therefore, this study adopts non-probability sampling.

4.6.6. Data analysis

Quantitative data analysis processes raw numerical data collected into meaningful information through quantitative techniques, such as graphical displays, charts, tables and summary statistics (Saunders et al., 2011). Quantitative data analysis provides summaries of data that support thegeneralisation of our research objectives.

Various statistical analyses can be run for quantitative data analysis. Using the Statistical Package for the Social Sciences (SPSS) and Analysis of Moment Structures (AMOS) 22, key statistical analysis tests include EFA, CFA and SEM. EFAaims to explain the minimum amount of common variance between variable measures by

obtaining summary indices called eigenvalues (Easterby-Smith et al., 2015). CFAmeasures estimates for each factor loading for common and specific factors and is a hypothesis-testing technique to determine how well the measurement model fits the data (Easterby-Smith et al., 2015).

The results ofCFA form the basis of SEM, which is a statistical technique used to examine sets of relationships between continuous independent and dependent variables (Tabachnick and Fidell, 2007).

SEM is a statistical methodology that generates observations for multiple variables. "*The term structural equation modeling conveys two important aspects of the procedure: (a) that the causal processes under study are represented by a series of structural equations, and (b) that these structural relations can be modeled pictorially to enable a clearer conceptualization of the theory under study*" (Byrne, 2001, p.3).

SEM's beneficial feature for this research is the ability to specify latent variable models that provide separate estimates of relations among latent constructs and their manifest indicators (the measurement model) and of the relations among constructs (the structural model) (Tomarken and Waller, 2005). Additionally SEM's availability of chi-square tests and other means, researchers can comparatively evaluate the fit of alternative models that differ in complexity as this approach supports the model comparison approach to data analysis (Judd et al., 1995).The statistical methodology will allow the researcher to test the model and determine the goodness of fit between the hypothesised model and the sample data, which will show how well the observed data fit this restricted structure and eliminate residuals if necessary (Byrne, 2001).

Based on the above literature, this study adopts SPSS 22, AMOS 22 and SEM to observe the latent variables and to conduct direct and indirect measurements. The test results will define the model fit by either accepting or rejecting the model.

4.7. Validity

Tull and Hawkins (1993) noted validity as a concern alongside consistent or systematic error, and Easterby-Smith et al. (2015) argued that validity ensures that the measurements correctly measure the variables they are supposed to measure.

Boddy (2005) suggested that validity refers to how effectively a piece of research measures what it sets out to measure. The validity of quantitative data depends on the design of the method and the research questions (Gelo et al., 2008). A valid research method will facilitate the collection of accurate results (Saunders et al., 2015). Data validity depends largely on the design of the method and the research questions, as their legitimacy and accountability will affect the research validity (Gelo et al., 2008). It is important to determine that a question is not biased; if the question leads participants in a certain direction, the validity of the research will significantly decrease.

If a researcher follows the research design process, thoroughly reviews existing literature and theories, pilot tests and minimises the limitations of the research methodologies, the research will demonstrate relatively perfect validity (Cassell and Symon, 1994). The validity of the constructs can be tested through statistical measures. These tests include convergent validity (Fornell and Larcker, 1981), which is a measurement of the level of "*high shared variance among multiple measures of each construct, relative to the amount of variance due to the measurement error*" (Batra and Ahtola, 1991, p.160), and discriminant validity (Farrell, 2010), which measures the extent to which one latent variable is different from other latent variables (Farrell, 2010).

4.8. Reliability

A research study's reliability is essential to its credibility in the relevant academic fields (Malhotra and Birks, 2007). Reliability fundamentally concerns consistency in measuring concepts (Bryman and Bell, 2015). The most commonly used output for a scale's reliability in quantitative analysis is Cronbach's alpha (Cronbach, 1951). As the Cronbach's alpha coefficient increases, the reliability of the result increases, which can be used as an indicator in the reliability test (Gorrell et al., 2011).Additionally, SPSS and AMOS are specialist software used for statistical analysis in social science research (Rowley, 2014), enabling the user to analyse data including linear progression, factor analysis and correlation.

4.9. Quantitative Approach Adopted

The purpose of the quantitative study is to test the relationships between factors in the proposed framework – other users' satisfaction, intention to share knowledge, and s-commerce usage experience– and purchase intention. The quantitative study utilises a face-to-face survey through a set of questionnaires to collect data with which to measure and test consumers' intention to purchase.

The size of the sample is an important criterion for quantitative research, as it will influence correlation coefficients and the reliability of the results. As mentioned earlier, a sample size over 300 is acceptable (Tabachnick and Fidell, 2007), and a size of 500 is preferable (Balnaves and Caputi, 2001). Therefore, this study aimed to recruit 500 responses and received over 600 responses. Not all the responses were useful for analysis; 498 valid responses were received, which is considered a good sample size.

4.10. Pilot Study

This research aims to test and to validate the proposed framework and hypotheses by developing a questionnaire. A pilot test is required to improve and refine the questionnaire and to identify and eliminate any problems (Saunders et al., 2015; Malhotra and Birks, 2007). The process of conducting a pilot test is identical to that for the main survey; therefore, researchers can conduct the process from coding to statistical analysis, providing the opportunity to make changes and improvements if necessary.

This pilot study is part of the questionnaire design process,allowing the researcher to check the reliability of the proposed framework on a small scale. The questionnaires were piloted with a convenience sample of participants in Seoul, mainly in the university area. The reason for choosing those particular sites was that the university community includesmany different professionals and students in a variety of age groups. It was convenient to identify potential participants because the majority of the crowd in this area used smartphones and were willing to participate in the survey.

The questionnaire was designed with 3 screening questions, 59 questions related to specific topics and 3 demographic questions in three pages printed on A3 paper and folded into a booklet. The first page was a consent form for the questionnaire survey.

A pilot study on a sample of 181 valid responses from 300 total responses was conducted to test the reliability and validity of the items. Table 23 summarises the demographics of the pilot study participants.

Table 23: Demographics of Pilot Study

Characteristics		Frequency	%
Gender	Male	92	50.8
	Female	89	49.2
	Under 18	3	1.7
	19 – 25	63	34.8
Age Group	26 – 35	86	47.5
	36 – 45	28	15.5
	46 – 55	1	0.6
	Over 56	0	0

The majority of respondents were between 19 years and 35 years old, making them relatively young adults, and the sample showed no significant difference in gender.

The pilot study data were analysed using SPSS and AMOS 20, and the results obtained from SEM showed a good fit between the data and the model ($\chi2 = 151.218$, df = 83, p < 0.001, RMSEA=0.048, CFI=0.907, GFI= 0.907). The pilot study results support the application of the proposed framework for a small-scale sample.

In the pilot study, the researcher received feedback on the questionnaire, including that the spacing between the questions was not large enough, making it difficult to answer all the questions. Additionally, there were too many questions; 59 in total. Therefore, the researcher decided to reduce the number of questions to 52 from 59 and print the survey on four pages rather than three so that the respondents could answer all the questions without any difficulty.

4.11. Translation

For this study, the questionnaire was designed in the English language by adapting and adopting questions from the related literature on TAM, m-commerce, satisfaction, knowledge sharing, s-commerce and purchase behaviour. The questionnaire was examined and checked by the supervisor team and the pilot test to create the final version. However, because the sample population was in South Korea, the

questionnaire was translated into Korean. A senior professor and two PhD researchers from Kyung Hee University in Seoul, South Korea checked and proofread the questionnaire in the Korean language.

4.12. Timeline for Data Collection
The data were gathered using a self-administered questionnaire, which is the most common quantitative approach used in the literature (Zikmund, 2003). The survey was conducted face-to-face in order to increase the response rate and gather quality data (Saunders et al., 2011). The survey took place in Seoul, South Korea between June and July 2015. The voluntary participants were asked to complete the printed survey questionnaire, which included screening questions in order to eliminate non-optimal participants. The survey took approximately ten minutes to complete, and data collection included a consent form signed by the participants.

4.13. Ethical Considerations
All researchers are concerned with ethical issues, includinggaining access to individuals, collecting, analysing and reporting data (Bryman and Bell, 2015). This study does not have any lingering concerns or issues regarding data collection through face-to-face surveys,which was checked with the supervisory team, and an ethical consent application was submitted. Prior to completing the survey, participants were clearly notified on the consent form that taking part in the survey was strictly voluntary and that they were free to discard it at any time,upon which the data would be destroyed. The consent form emphasised that all responses would be treated confidentially and anonymously, with no personal information collected and published.

4.14. Summary
This chapter reviewed the research philosophies and different methodological techniques used to fulfil the objectives of this research. It focused on classifying the various available research paradigms and methods, such as positivist and interpretivist paradigms, deductive and inductive reasoning, and quantitative and qualitative methods. In terms of research philosophies, internal realism was the ontological

position, and positivism with deductive reasoning led to the selection of a quantitative research method.

In detail, the research design, questionnaire design, sample size and adopted survey method were identified. A quantitative approach was employed, and a self-administered survey questionnaire was developed based on a review of the research paradigm and the literature.

Chapter 5 Data Analysis and Results

5.1. Introduction

The following chapter discusses the findings by presenting a quantitative analysis of the data obtained from the questionnaire to test and examine the proposed theoretical framework. This chapter will describe and present the statistical analysis techniques used to explore the relationships among the m-commerce usage experience, satisfaction, s-commerce use, knowledge sharing, and purchase intention.

5.2. Descriptive Analysis

For data collection, a n on-site survey questionnaire was administered over 2 months, from July to August 2015. The questionnaire was administered to participants who owned and used smartphonesand who connected to online social networks via mobile devices. The questionnaire administered to participants received 600 attempted responses, of which 498 were valid, 87 were disqualified and 13 were partially completed. The valid response rate was 83%. Previous studies in technology acceptance sectors have had a similar or lower sample size and much lower response rate, between 231 participants with a response rate of approximately 70% (Yen et al., 2010) and 389 participants with a response rate of approximately 43% (Rauniar et al., 2014).

Table 24 presents a summary of the descriptive statistics. The sample consists of males and females living in South Korea who owned a smartphone and used online social networks through mobile devices. The key age groups were 19-25 and 26-35, and the majority of respondents were students or office workers.

Table 24: Descriptive statistics

Variables	Categories	Frequency	Valid Percent
Gender	Male	264	53
	Female	234	47
Do you own smart mobile devices	YES	498	100
Do you use online SNS	YES	498	100
Age	Under 18	15	3
	19 – 25	219	44
	26 – 35	192	38.6
	36 – 25	47	9.4
	46 – 55	23	4.6
	56 Above	2	0.4
Occupation	Student	175	35.1
	Office worker	273	54.8
	Own Business	24	4.8
	Doctor	4	0.8
	Service Related	3	0.6
	Part-time job	6	1.2
	Other	13	2.6

5.3. Demographic Sample Validity

A major criterion for the study samplewas the use of online social networks through smart mobile devices in South Korea. Screening questions were used to screen out respondents who do not qualify for the study. The sample obtained was 53% male and 47% female. The majority of respondents used Facebook (66.3%), MySpace (39.6%) and Twitter (33.7%), and many of the participants used more than one social network platform.

5.4. Reliability Analysis of Scale Items

Hair et al. (2010) outlined that reliability is the degree to which a set of variables is consistent with what it aims to measure; it is a measure of error, as reliability tests measure the amount of data that are free from random error (Malhortra and Birks, 2007). The Cronbach's alpha coefficient is a highly significant statistic used to

measure reliability (Malhortra and Birks, 2007). Cronbach's alpha values above 0.7 are significant, according to Pallant (2013). Values below 0.7 suggest the presence of unsatisfactory internal consistency within the scale (Malhortra and Birks, 2007). The reliability of the scale used in the study is illustratedin Table25.

Table 25: Total Scale Score for Cronbach's Alpha

Variable	Cronbach's Alpha	No. of items
Overall	.974	52
PUF	.787	4
PEOU	.867	3
SATIS	.925	4
TRUST	.905	5
REPU	.890	4
RECI	.902	6
INFO	.930	9
INT	.745	3
PEOU	.682	3
PERS	.865	4
WOM	.841	3
BEHAVIOURAL	.917	4

The overall Cronbach's alpha coefficient is 0.974, which is above the suggested value of 0.7. The individual variables also have relatively high values, above 0.7. Therefore, the scales used have reliable internal consistency, and thus, the datasets are appropriate for further analysis.

5.5. Exploratory Factor Analysis (EFA)

First, the suitability of the dataset for EFAmust be determined. Pallant (2013, p.182) outlined that "*there are two main issues, which need to be considered, and these are the sample size and the strength of the relationships among the variables or items*". In general, correlation coefficients among variables are more reliable as the sample size increases. SPSS provides two statistical measures to assess the factorability of the data: Bartlett's test of sphericity and the Kaiser-Meyer-Olkin (KMO) test.

5.5.1. Suitability criteria for EFA

First of all, the suitability of the data set needs to be determined to see whether they are suitable for factor analysis to begin EFA analysis. In general, larger sample's correlation coefficients among the variable are more reliable. SPSS provides two statistical measures to assess the factorability of the data, Bartlett's test of Sphericity and the Kaiser-Meyer-Olkin.

5.5.2. Sample size

The size of the sample used for EFA is an important criterion because it will influence the correlation coefficients and the reliability of the analysis (Field, 2013). Pallant (2013, p.183) argued that suggested suitable sample sizes are decreasing: "*Stevens (1996, p.372) suggests that the sample size requirements advocated by researchers have been reducing over the years as more research has been done on the topic*". On the other hand, Tabachnick and Fidell (2007) proposed that a minimum sample of 300 is preferable, and 150 cases can be considered sufficient if solutions have several high-loading marker variables (above 0.80) (Pallant, 2013). Accordingly, Comrey and Lee (1992) outlined that a sample of 300 is regarded as a good sample size, whilst a size of 100 is poor and one up to or over 1000 is excellent (Field, 2013). The current study has a sample size of 498, which is a decent-sized sample for EFA.

5.5.3. Bartlett's test of sphericity and Kaiser-Meyer-Olkin sampling adequacy

To run EFA, it is important to perform two tests on the data. Bartlett's test of sphericity examines whether the variance-covariance is proportional to an identity matrix (Field, 2013). Pallant (2013) suggested that the significance value should be less than 0.5 in order for factor analysis to be undertaken. Table 26 shows that the significant Bartlett's test of sphericity value obtained for the study was .000, indicating the data are factorable. KMO sampling adequacy is an index used to review the factorability of the dataset (Malhotra and Birks, 2007). The KMO index ranges from 0 to 1, and suggested values are high values between 0.6 and 1.0 (Tabachnick and Fidell, 2007), which indicate that factor analysis is suitable, and low values below 0.5, which imply that factor analysis may not be suitable (Malhotra and Birks, 2007).

Table 26 presents the results of the Bartlett's test of sphericity and the KMO test. In summary, the test results indicate that the dataset has good factorability and can therefore be considered appropriate for EFA.

Table 26: Results of the KMO Test and Bartlett's Test Of Sphericity

KMO Measure of Sampling Adequacy		**0.000**
	Approx. Chi Square	21849.048
Bartlett's Test of Sphericity	df	1326
	Sig.	.000

5.5.4. Factor extraction

"*Factor extraction involves determining the smallest number of factors that can be used to best present the interrelationships among the set of variables*" (Pallant, 2013, p.183).Various approaches can be used to extract the number of underlying factors. SPSS sets the default method of extraction as principal component analysis, which is the most commonly used approach in the literature (Osborne and Costello, 2009; Pallant, 2010). The researcher must determine the number of factors that he/she thinks best represents the underlying relationships among the variables (Pallant, 2013). SPSS has six extraction methods: unweighted least squares, generalised least squares, maximum likelihood, principal axis factoring, alpha factoring, and image factoring (Osborne and Costello, 2009). Generally, it is recommended that in an exploratory approach, the researcherexperiment with different numbers until an optimal solution is found (Tabachnick and Fidell, 2007; Pallant, 2013).

5.5.5. Factor rotation

Factor rotation occurs after the number of factors to extract from the dataset is determined. The role of rotation is to simplify and clarify the data structure after the extraction process.It must be noted that rotation cannot improve the basic aspects of the analysis (Osborne and Costello, 2009); it rotates the extracted factors in order to present the pattern loadings in a manner that makes them easier to interpret (Pallant, 2013). Pallant (2013) highlighted two main approaches to factor rotation: orthogonal or oblique factor solutions. Similar to extraction, rotation requires deciding among a

variety of choices. Varimax (the most commonly used method), quartimax, and equamax are commonly available orthogonal rotations. Orthogonal factor rotation is an uncorrelated solution that is suitable if the underlying factors are independent from one another (Pallant, 2010). On the other hand, oblique factor rotation is a correlated solution in which the factors can be allowed to correlate. Oblique rotation output is more difficult to interpret and report (Osborne and Costello, 2009; Pallant, 2013), where the factor matrix is split into a "pattern matrix" and a "structure matrix" (Tabachnick and Fidell, 2007). In practice, both approaches are outlined to provide similar solutions (Osborne and Costello, 2009; Pallant, 2013).

5.5.6. Factor loadings

The first factor loading values extracted from the dataset are shown in Table 27.

Table 27: Initial Rotated Pattern Matrix

					Pattern Matrix[a]			
	Factor							
	1	2	3	4	5	6	7	8
PUF1					.470			
PUF2					.405			
PUF3					.409			
PUF4					.449			
PEOU1					.865			
PEOU2					.931			
PEOU3					.807			
SAT1				.819				
SAT2				.950				
SAT3				.957				
SAT4				.772				
TRUST1		.412		.491				
TRUST2				.322				
TRUST3		.472		.357				
TRUST4		.563						
TRUST5		.653						

<div align="center">Pattern Matrix^a</div>

	Factor							
	1	2	3	4	5	6	7	8
REPU1								
REPU2		.301	.359					
REPU3			.462					
REPU4			.442					
RECI1			.860					
RECI2			.968					
RECI3			1.006					
RECI4			.694					
RECI5			.590					
RECI6	.710							
INFO1	.687							
INFO2	.882							
INFO3	.924							
INFO4	.833							
INFO5	.805							
INFO6	.817							
INFO7	.779							
INFO8	.828							
INFO9	.679							
INT1	.580							
INT2	.644							
INT3	.334							
PU1								.418
PU2								.563
PU3		1.034						.524
PERS1		1.056						
PERS2		.889					.855	
PERS3		.662					.997	
PERS4							.685	
WOM3						.628		
Behavioural1						.836		
Behavioural2						.805		
Behavioural3						.855		
Behavioural4						.435		

Extraction Method: Maximum Likehood.
Rotation Method: Promax with Kaiser Normalization

The pattern matrix shows the factor loadings of each variable. The highest-loading items of each component identify and label the component. According to Comrey and Lee (1992), EFA factor loadings above 0.71 are considered to be excellent, those above 0.55 are good, and those below 0.32 are poor. Table 27 indicates excellent factor loadings and poor loadings. Additionally, these initial loadings illustrate other problems,including that "TRUST 1, TRUST3, (satisfaction) and REPU 2 (knowledge sharing)" are loaded on more than one factor. Moreover, loadings of "PU3, PERS 1,

PERS 2, and PERS 3 (s-commerce usage experience)" were loaded with other loadings, such as satisfaction and knowledge sharing. Therefore, this initial factor loading is not optimal and requires some items to be eliminated. The final factor loading values extracted from the dataset are shown in Table 28.

Table 28: Final Rotated Pattern Matrix

	Pattern Matrix[a]				
	Factor				
	1	2	3	4	5
PUF1				.530	
PUF2				.457	
PUF4				.485	
PEOU1				.831	
PEOU2				.875	
PEOU3				.784	
SAT1					.810
SAT2					.933
SAT3					.918
SAT4					.753
REPU1		.662			
REPU2		.798			
REPU3		.869			
REPU4		.791			
RECI1		.788			
RECI2		.663			
RECI4		.775			
RECI5		.743			
INFO1	.637				
INFO2	.808				
INFO3	.918				
INFO4	.760				
INFO5	.737				
INFO6	.696				
INFO7	.699				
INFO8	.739				
WOM3			.733		
Behavioural1			.903		
Behavioural2			.918		
Behavioural3			.939		
Behavioural4			.519		

Extraction Method: Maximum Likehood.

Rotation Method: Promax with Kaiser Normalization. [a]

a. Rotation converged in 6 iterations.

The final EFA solution was achieved with 5 factors, in accordance with the proposed framework, and each had three or more item loadings between 0.53 and 0.94. According to Comrey and Lee (1992), this solution is in the good-to-excellent range.

5.5.7. EFAsummary

In summary, final EFA loadings retained 31 items from the original 52, and a total of five factors were extracted from the dataset. Factor 1 consisted of knowledge sharing, with eight items;factor 2 of s-commerce, with eight items;factor 3 of purchase intention, with five items;factor 4 of m-commerce use, with six items; and factor 5 of satisfaction, with four items.

5.6. Confirmatory Factor Analysis (CFA)

CFA is used for four major purposes: (1) psychometric evaluation of measures; (2) construct validation; (3) test of method effects; and (4) test of measurement invariance (Harrington, 2009). CFA is commonly used when testing specific hypotheses about the structure of and relations between latent variables (Field, 2013). Compared to EFA, CFA factor loadings can be flexibly specified on a theoretical basis or based on empirical findings, and observed items are loaded only on factors included in the hypothesis.

5.6.1. SPSS / AMOS 22

Hypotheses on the structures of latent variables and their relationships can be tested using programs such as AMOS (Analysis of Moment Structures), an add-on program of SPSS (Field, 2013). SPSS 22 and AMOS 22 graphics are used in this study.

5.6.2. Conceptual measurement model (CFA) development

A conceptual model that measure the relationships between constructs was developed in Chapter 3based onthe TAM framework, and pertinent literature on use of m-commerce experience, satisfaction, knowledge sharing and use of s-commerce was reviewed to identify the constructs prior to statistical testing. Table 29 presents an

overview of the original variables before and after EFA was conducted. This study decided to conduct further CFA to reduce the error as a result of losing variables (through EFA) and to crosscheck the validity to enhance the reliability of the model fit measurement.

The model shows the retained scale items next to their observed variables (the label used to address the scales during analysis), and the latent constructs, which will be used in CFA and SEM. The model specification was drawn in AMOS 22 and shows the observed variables and latent constructs. Figures18 and 19 show the model specification.

Table 29: Conceptual Measurement Model (Before and After EFA)

Before		After	
Observed	Latent Construct	Observed	Latent Construct
PUF PEOU	Smart Mobile Device Usage Experience	PUF PEOU	Smart Mobile Device Usage Experience
SATIS TRUST	Satisfaction	SATIS	Satisfaction
REPU RECI	S-Commerce Usage Experience	REPU RECI	S-Commerce Usage Experience
INFO INT PU PERS	Intention to Share Knowledge	INFO	Intention to Share Knowledge
WOM BEHAVIOURAL	Purchase Intention	WOM BEHAVIOURAL	Purchase Intention

In this study, the maximum likelihood method was applied to estimate the model parameters, whilethe goodness of fit index (GFI), adjusted goodness of fit index (AGFI), normed fit index (NFI), incremental fit index (IFI), Tucker-Lewis index (TLI), comparative fit index (CFI), root mean square residual (RMR), and root mean square error of approximation (RMSEA) were applied to determine whether the model is acceptable.
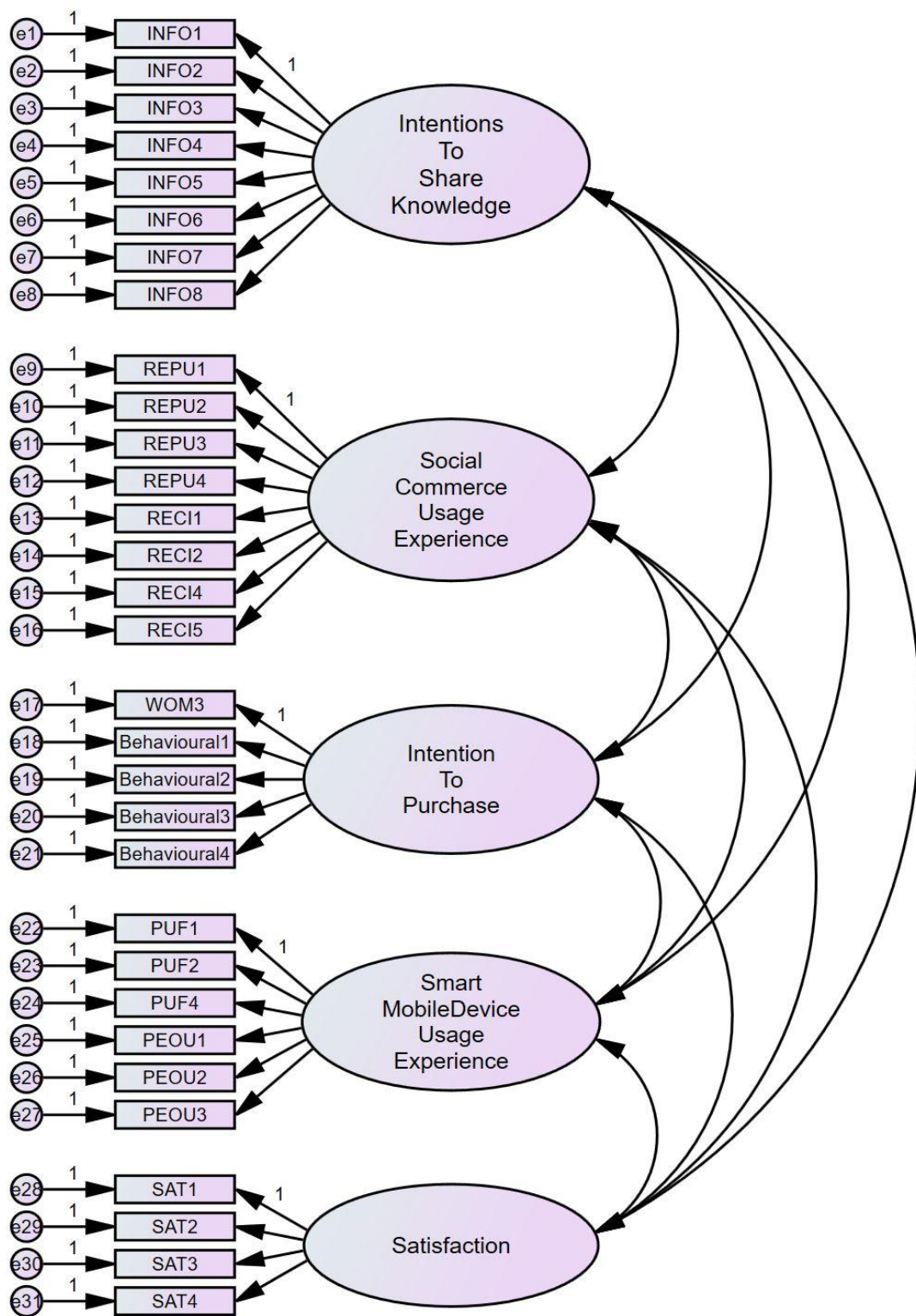
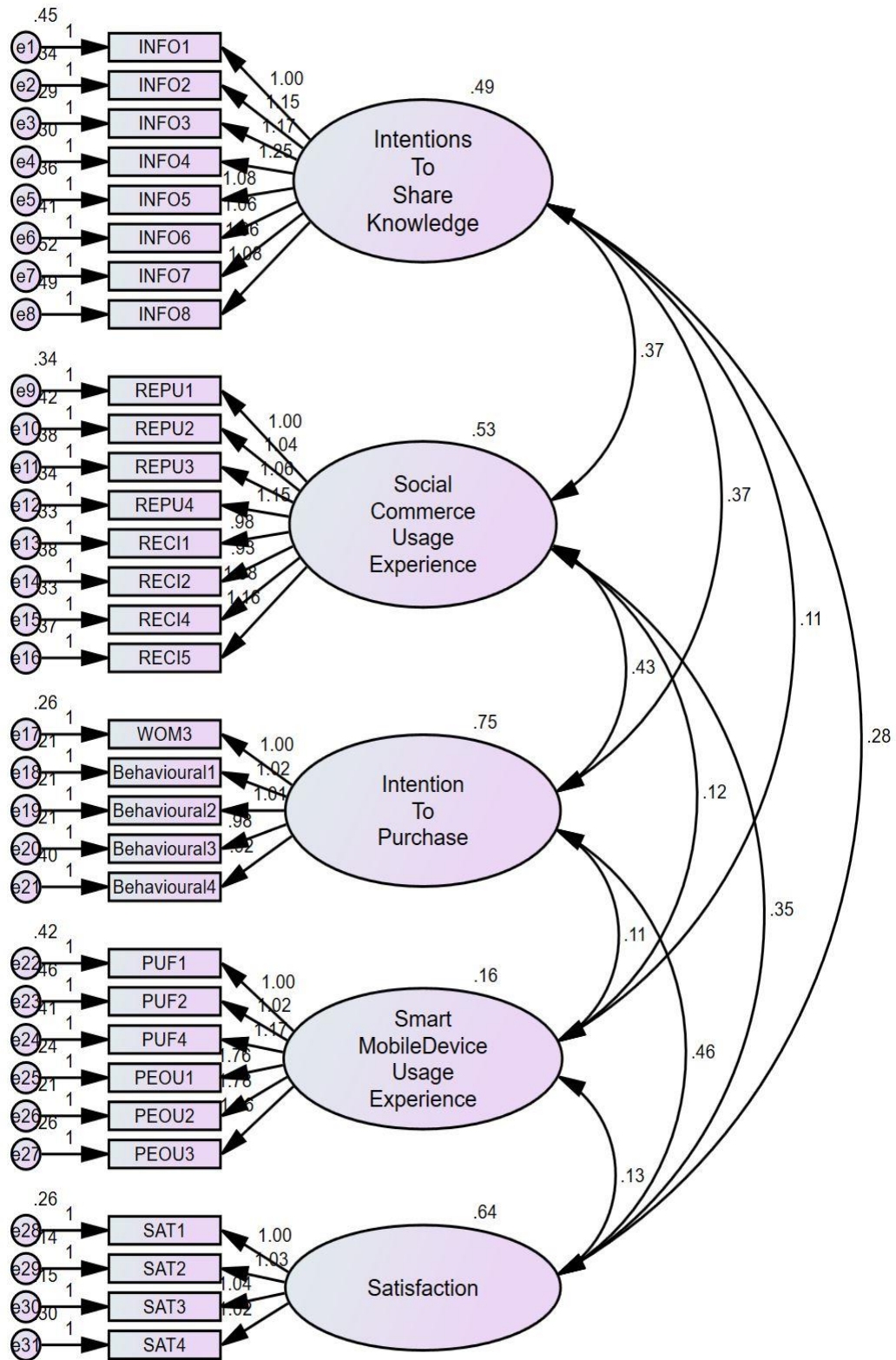**Figure 18: CFA Model Specifications after EFA**

Figure 19: CFA Model Measurements after EFA

5.6.3. Model fit assessment

The estimated model results were examined to identify any non-optimal estimates in terms of the signs and statistical significance of all estimated parameters, such as regression weights, standardised regression weights and probability. For example, standard weights were checked to determine the relative importance of the measures. Hair et al. (2010) suggested that standardised loading estimates should be 0.5 or higher and ideally 0.7 or higher. Probability indicates the statistical significance of the coefficient based upon the hypotheses. If the p-value is 0.05 or less, H0 is rejected, that is, the coefficients are significant. Various different fit indices can be used to examine the model fitness. Previous studies indicated the suggested fit indices for each index in Table 30.

Table 30: Summary of Fit Index, CFA Measurement

Fit Index	Suggested Value	Reference
Chi-Square	$p<.05$	Field 2013
Relative Chi-Square	<5	Lomaxand Schmacker 2012
RMSEA	<.05 Good <.05 to <.08 Adequate <.08 to <.10 Medicore	
CFI	>.95	Hu and Bentler, 1999
NFI	>.95 Good >.90 Acceptable	Lomaxand Schmacker 2012
TLI	>.90	Hu and Bentler, 1999
RMR	<.05	Lomaxand Schmacker 2012
GFI	>.90	

5.6.3.1. Chi-Square (x^2)

Chi-square (x^2) measures the difference between the observed and estimated variance and covariance matrices (Hair et al. 2010). The statistical significance of the difference reflects the probability that the difference is a result of sampling variation (Lomaxand Schmacker 2012; Hair et al., 2010).

5.6.3.2. Relative Chi-Square

Relative chi-square aims to address problems in the difference between the sample variations and the chi-square value (Byrne, 2001). Various suggestions have been made for a recommended value; for example, Kline (1998) used a value of less than 3, whilst Lomaxand Schmacker (2012) stated that values lower than 5 are acceptable.

5.6.3.3. RMSEA

RMSEAis a measure that corrects any tendency of the chi-square goodness-of-fit test to reject models with large sample sizes or with a large number of observed variables. RMSEA can determine the level at which a model fits the population (Hair et al., 2010). Generally, the lower the RMSEA value, the better; for example, Lomaxand Schmacker (2012) outlined that ≤.05 is a good fit, <.05 to ≤.08 is an adequate fit, and <.08 to ≤.10 is a mediocre fit for the population. RMSEA is best suited for studies with larger sample sizes,that is, those over 500 (Hair et al., 2010).

5.6.3.4. CFI

CFI is an incremental fit index, that is, an improved fit index of the NFI (Hair et al., 2010). Likewise, CFI values range between 0 and 1, where zero indicates no fit and one is a perfect fit (Hair et al., 2010). Bentler (1990) suggested a recommended value of equal to or over .90, although in later studies, values equal to or over .95 were recommended (Hu and Bentler, 1999).

5.6.3.5. NFI

NFI measures the ratio of the difference in value between a restricted model and a full model using a baseline null model (Lomaxand Schmacker, 2012). NFI rescales the

chi-square into a range between 0 and 1, where a perfectly fitting model will have an NFI of 1 (Lomaxand Schmacker, 2012). Lomaxand Schmacker (2012) outlined that NFI values greater than .90 indicate an acceptable fit, and anything greater than .95 is a good fit.

5.6.3.6. TLI

TLI is an index to measure a comparison or alternative model against a null model, and the values of TLI can range from anything below zero to anything above one, where higher values reflect a better model fit (Lomaxand Schmacker, 2012). Thus, Hu and Bentler (1999) stated that a value over .90 reflects a good model fit.

5.6.3.7.RMR

RMR is an average of residuals that is generally used to compare the fit of two models with the same data (Lomaxand Schmacker, 2012). Hu and Benter (1999) suggested that a value below .08 is recommended, although more recent studies suggested that the lower the value the better; for example, Lomaxand Schmacker, (2012) recommended values below .05.

5.6.3.8. GFI

GFI calculates the "*ratio of the sum of the squared differences between the observed and reproduced matrices to the observed variance*" (Lomaxand Schmacker, 2012, p. 579).Lomaxand Schmacker (2012) outlined recommended values over .90 and .95 for GFI.

5.6.4. Smart mobile device usageexperience

The initial fit indices for smart mobile device usage experience are shown in Figure 20.
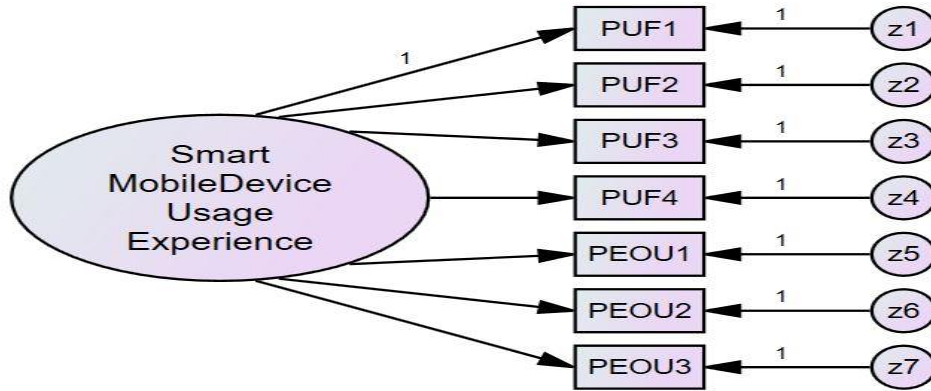
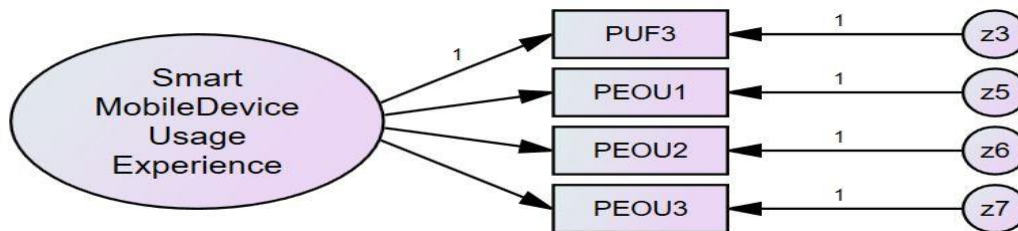**Figure 20: Smart Mobile Device Usage Experience, Initial CFA Model**

Table 31 presents a summary of the fit indices for smart mobile device usage experience.

Table 31: Smart Mobile Device Usage Experience, CFA Model Fit

	Measure of Fit	Suggested Value	Result Initial	Final
Absolute Fit Measure	χ^2	$p > .05$	$\chi^2 = 252.042$ df = 14 $p < .000$	$\chi^2 = 1.862$ df = 2 $p < .000$
	χ^2 / df	P < 3	7.472	0.931
	GFI	> 0.9	.852	.998
	AGFI	> 0.9	.705	.991
	RMR	< 0.05	.054	.006
	RMSEA	< 0.08	.185	.000
Incremental Fit Measure	NFI	> 0.9	.837	.998
	IFI	> 0.9	.845	1.000
	TLI	> 0.9	.766	1.000
	CFI	> 0.9	.844	1.000

The initial model's values of GFI (0.852), NFI (0.837) and CFI (0.844) are all below the acceptable level of 0.9, demonstrating a satisfactory goodness of fit (Bentler, 1992); the estimate of RMSEA (0.185) is higher than the acceptable index of 0.08.

The model was modified to improve the fit, resulting in the improvement of GFI (0.998), AGFI (0.991), NFI (0.998), IFI (1.000), TLI (1.000), and CFI (1.000) values, which support good fit, that is, they are above the index value of 0.9.The RMSEA value improved significantly to become acceptable, that is, below 0.08. The final model for m-commerce usage experience is shown in Figure 21.

**Figure 21: Smart Mobile Device Usage Experience, Final CFA Model**

Table 32: Smart Mobile Device Usage Experience, CFA Factor Loading

	B	S.E.	C.R.	P	β
PUF3 ← Smart Mobile Device Usage Experience	1				.79
PEOU1 ← Smart Mobile Device Usage Experience	1.732	.156	11.116	***	.90
PEOU2 ← Smart Mobile Device Usage Experience	1.936	.168	11.502	***	.80
PEOU3 ← Smart Mobile Device Usage Experience	1.680	.152	11.085	***	.51

***p < .001

5.6.5. Satisfaction

The initial fit indices for satisfaction are shown in Figure 22.
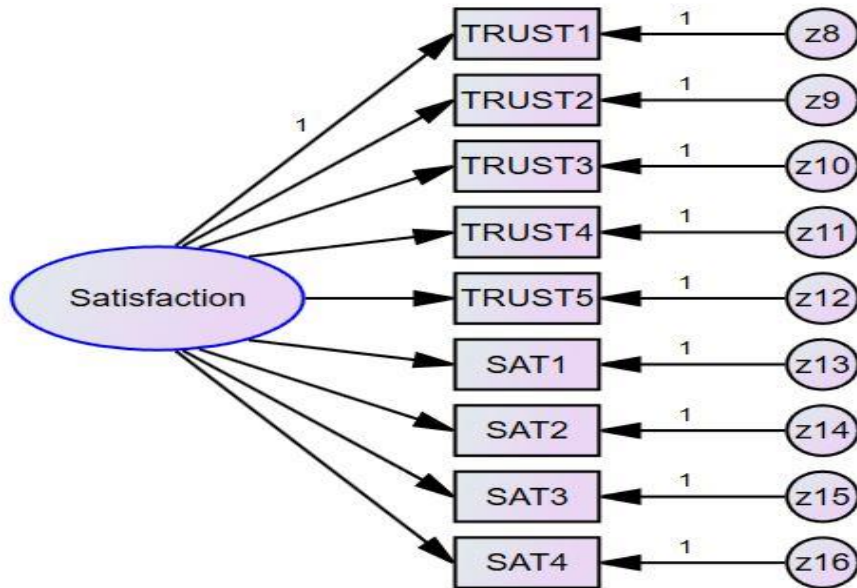
Figure 22: Satisfaction, Initial CFA Model

The measurement model for the satisfaction construct is estimated and results in the following goodness-of-fit values: GFI (0.662), AGFI (0.437), NFI (0.786), TLI (0.721), CFI (0.791) and RMSEA (0.238). Thus, the initial model fit is poor.

Table 33: Satisfaction, CFA Model Fit

	Measure of Fit	Suggested Value	Result Initial	Final
Absolute Fit Measure	χ^2	$p > .05$	$\chi^2 = 786.771$ df = 27 $p < .000$	$\chi^2 = .308$ df = 2 $p < .000$
	χ^2 / df	P < 3	29.139	.154
	GFI	> 0.9	.662	1.000
	AGFI	> 0.9	.437	.998
	RMR	< 0.05	.082	.003
	RMSEA	< 0.08	.238	.000
Incremental Fit Measure	NFI	> 0.9	.786	1.000
	IFI	> 0.9	.791	1.001
	TLI	> 0.9	.721	1.004
	CFI	> 0.9	.791	1.000

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The model was modified to improve the fit, resulting in an improvement of GFI (1.000), AGFI (0.998), NFI (1.000), IFI (1.001), TLI (1.004), and CFI (1.000) values, supporting good fit, that is, they are above the index value of 0.9.The RMSEA value improved significantly to become acceptable, that is, below 0.08. The final model for satisfaction is shown in Figure 23.
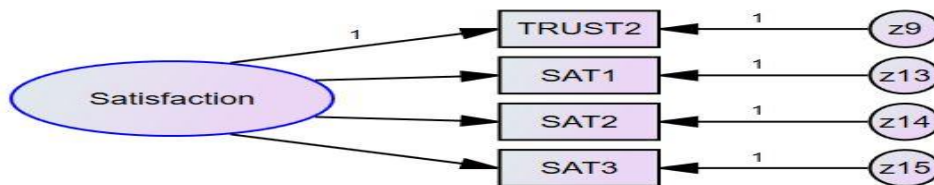
Figure 23: Satisfaction, Final CFA Model

Table 34: Satisfaction, CFA Factor Loading

	B	S.E.	C.R.	P	β
SAT 1 ← Satisfaction	1				.84
SAT 2 ← Satisfaction	1.049	.039	26.624	***	.93
SAT 3 ← Satisfaction	1.021	.040	25.497	***	.89
TRUST2 ← Satisfaction	.652	.052	12.533	***	.54

***=$p < .001$

5.6.6. Knowledge sharing
The initial fit indices for intention to share knowledge are shown in Figure 24.
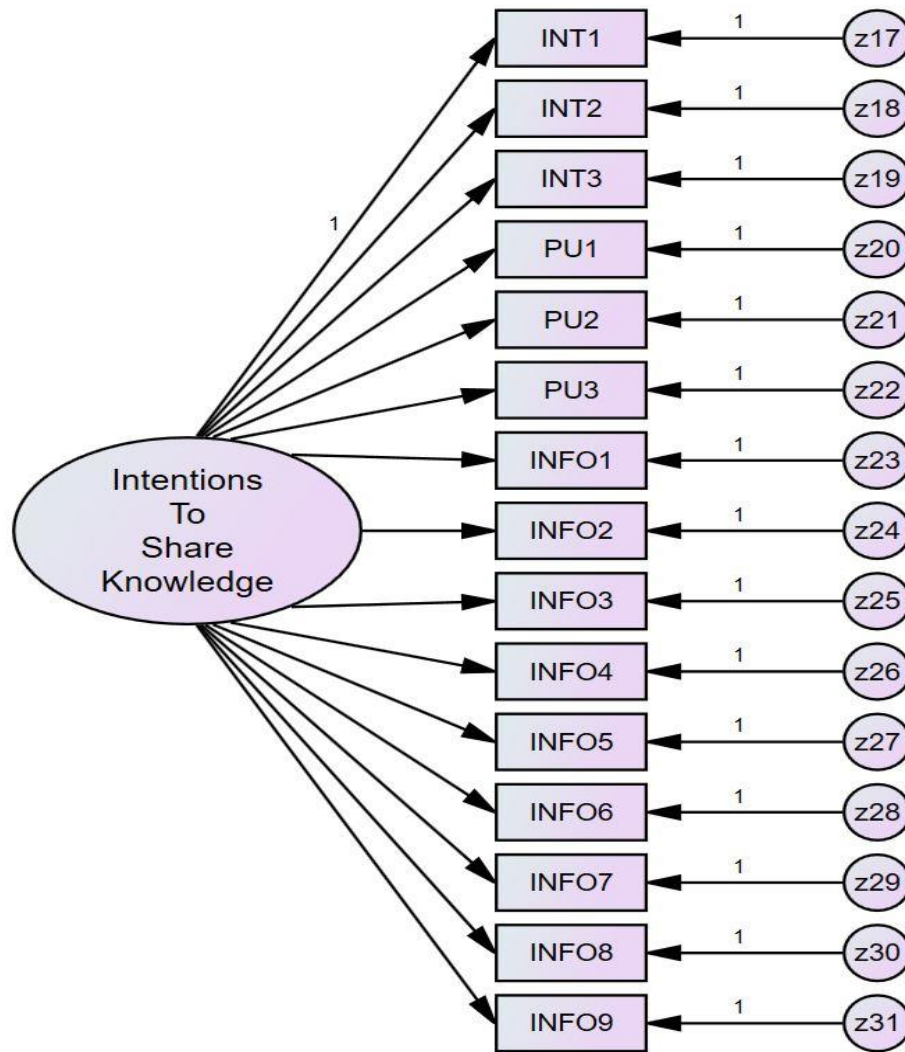
Figure 24: Intention to Share Knowledge, Initial CFA Model

The measurement model for the construct of theintention to share knowledge is estimated and results in the following goodness-of-fit values: GFI (0.776), AGFI (0.701), NFI (0.805); TLI (0.789); CFI (0.819) and RMSEA (0.141). Thus, the initial model fit is poor.

Table 35: Intention to Share Knowledge, CFA Model Fit

	Measure of Fit	Suggested Value	Result	
			Initial	Final
Absolute Fit Measure	χ^2	$p > .05$	$\chi^2 = 983.573$ $df = 90$ $p < .000$	$\chi^2 = 35.293$ $df = 14$ $p < .000$
	χ^2 / df	$P < 3$	10.928	2.520
	GFI	> 0.9	.776	.980
	AGFI	> 0.9	.701	.961
	RMR	< 0.05	0.064	0.021
	RMSEA	< 0.08	0.141	0.055
Incremental Fit Measure	NFI	> 0.9	.805	.981
	IFI	> 0.9	.820	.988
	TLI	> 0.9	.789	.982
	CFI	> 0.9	.819	.988

The model was modified to improve the fit, resulting in an improvement in GFI (0.980), AGFI (0.961), NFI (0.981), IFI (0.988), TLI (0.982), and CFI (0.988) values, supporting good fit, that is, they are all above 0.9.The RMSEA value improved significantly to become acceptable, that is, below 0.08. The final model for intention to share knowledge is shown in Figure 25.
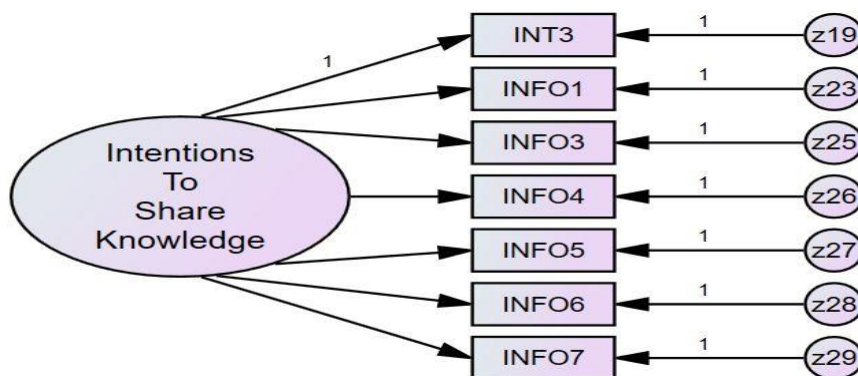
**Figure 25: Intention to Share Knowledge, Modified CFA Model**

Table 36: Intention to Share Knowledge, CFA Factor Loading

	B	S.E.	C.R.	P	β
INT 3 ← Intentions to Share Knowledge	1				.68
INFO1 ← Intentions to Share Knowledge	1.576	.149	10.576	***	.76
INFO3 ← Intentions to Share Knowledge	1.818	.162	11.202	***	.81
INFO4 ← Intentions to Share Knowledge	2.039	.178	11.479	***	.87
INFO5 ← Intentions to Share Knowledge	1.780	.159	11.203	***	.81
INFO6 ← Intentions to Share Knowledge	1.698	.156	10.875	***	.71
INFO7 ← Intentions to Share Knowledge	1.606	.156	10.326	***	.50

***=p < .001

5.6.7. S-commerce

The initial fit indices for s-commerce usage experience are shown in Figure 26.
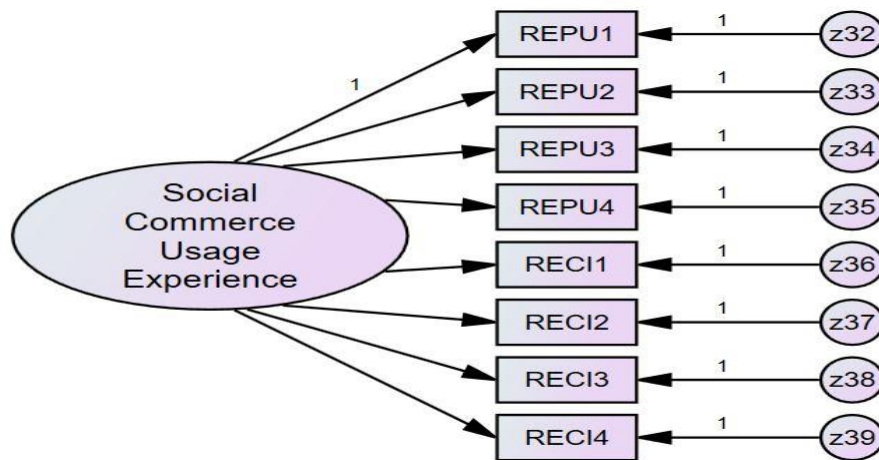

Figure 26: S-Commerce, Initial CFA Model

The measurement model for the construct of s-commerce usage experiencewas estimated and resulted in the following goodness-of-fit values: GFI (0.794), AGFI (0.629), NFI (0.862); TLI (0.815); CFI (0.868) and RMSEA (0.196). Thus, the initial model fit is poor.

Table 37: S-Commerce Usage Experience, CFA Model Fit

	Measure of Fit	Suggested Value	Result	
			Initial	Final
Absolute Fit Measure	χ^2	$p > .05$	$\chi^2 = 400.887$ df = 20 $p < .000$	$\chi^2 = 15.767$ df = 2 $p < .000$
	χ^2 / df	P < 3	20.044	7.883
	GFI	> 0.9	0.794	0.986
	AGFI	> 0.9	0.629	0.928
	RMR	< 0.05	0.060	0.014
	RMSEA	< 0.08	0.196	0.118
Incremental Fit Measure	NFI	> 0.9	0.862	0.988
	IFI	> 0.9	0.868	0.990
	TLI	> 0.9	0.815	0.969
	CFI	> 0.9	0.868	0.990

The model was modified to improve the fit, resulting in an improvement in GFI (0.986), AGFI (0.928), NFI (0.988), IFI (0.990), TLI (0.969), and CFI (0.990) values, supporting, good fit, that is, they are all above the value of 0.9.The RMSEA value improved to 0.118; however, the value is still higher than an acceptable value of 0.08 or below. The final model for knowledge sharing is shown in Figure 27.
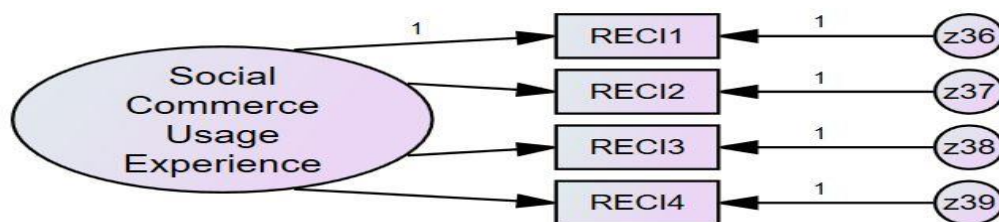
**Figure 27: S-Commerce Usage Experience, Modified CFA Model**

Table 38: S-Commerce Usage Experience, CFA Factor Loading

	B	S.E.	C.R.	P	β
RECI1 ← S-Commerce Usage Experience	1				.90
RECI2 ← S-Commerce Usage Experience	1.098	.048	22.903	***	.89
RECI3 ← S-Commerce Usage Experience	1.168	.050	23.357	***	.81
RECI4 ← S-Commerce Usage Experience	1.012	.054	18.897	***	.77

***p < .001

5.6.8. Purchase intention

The initial fit indices for purchase intention are shown in Figure 28.
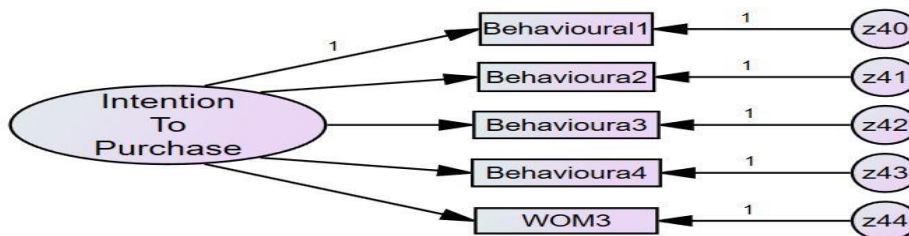
Figure 28: Purchase Intention, CFA Model

All values of the constructs are well above the acceptable level, indicating a satisfactory goodness of fit (Bentler, 1992). Model modification improved the values of the NFI (0.999); TLI (1.000); and CFI (1.000) constructs to the acceptable level of model   fit.

Table 39: Purchase Intention, CFA Model Fit

	Measure of Fit	Suggested Value	Result
Absolute Fit Measure	χ^2	$p > .05$	$\chi^2 = 25.795$ df = 5 $p < .000$
	χ^2 / df	$P < 3$	5.159
	GFI	> 0.9	0.980
	AGFI	> 0.9	0.939
	RMR	< 0.05	0.015
	RMSEA	< 0.08	0.091
Incremental Fit Measure	NFI	> 0.9	0.988
	IFI	> 0.9	0.990
	TLI	> 0.9	0.980
	CFI	> 0.9	0.990

Table 40: Purchase Intention, CFA Factor Loading

	B	S.E.	C.R.	P	β
BEHAVOURIAL1 ← Intention to Purchase	1.000				.89
BEHAVOURIAL2 ← Intention to Purchase	0.993	0.034	29.320	***	.89
BEHAVOURIAL3 ← Intention to Purchase	0.965	0.033	29.145	***	.89
BEHAVOURIAL4 ← Intention to Purchase	0.871	0.040	21.764	***	.77
WOM 3 ← Intention to Purchase	0.961	0.036	26.717	***	.85

***=p < .001

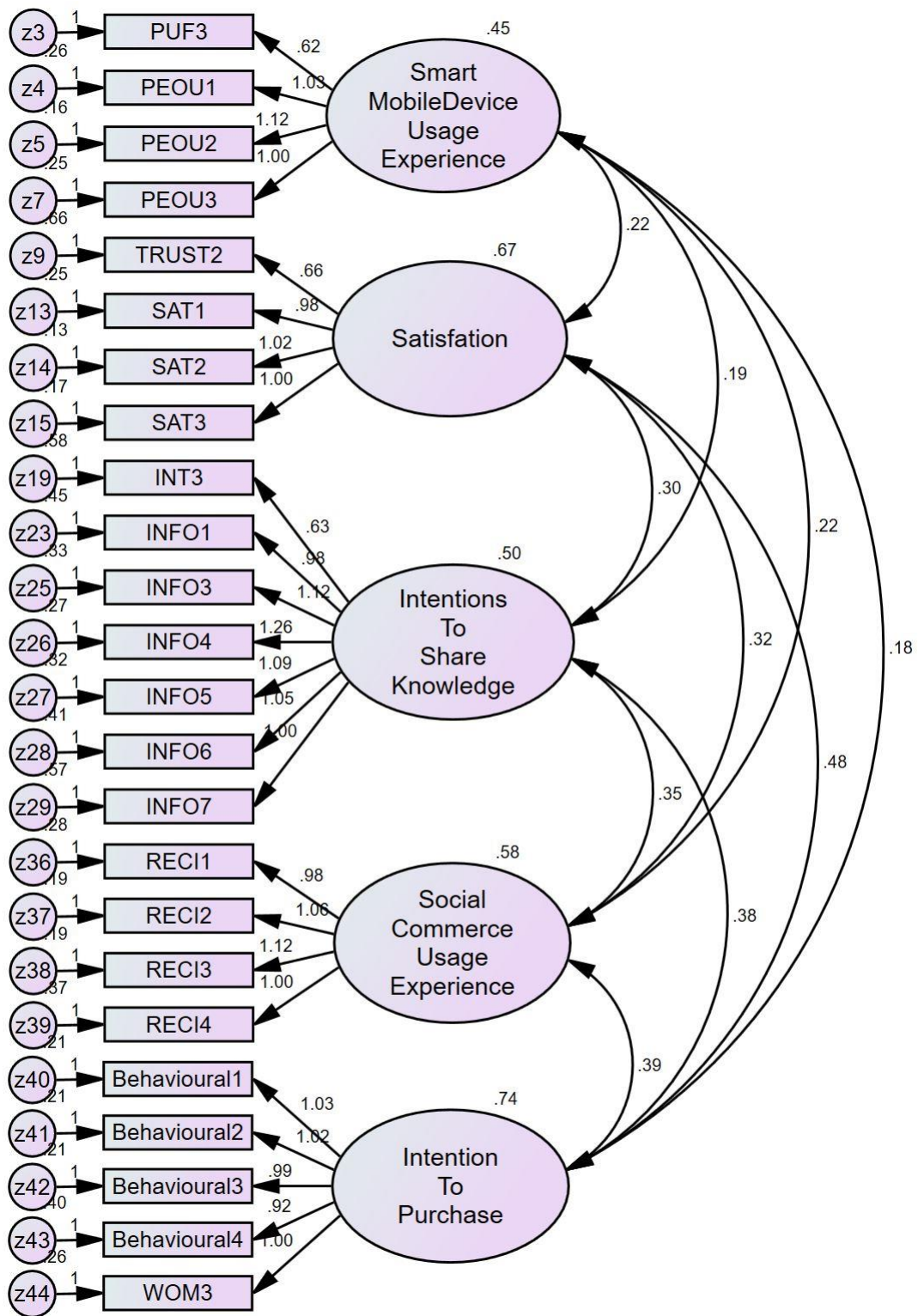## 5.6.9. Final CFA measurement model analysis

Figure 29: Final CFA Model

Figure 29 presents the final CFA model after the covariance, and Table 41 presents a summary of the fit indices.

Table 41: Final CFA Model Fit

	Measure of Fit	Suggested Value	Result
Absolute Fit Measure	χ^2	$p> .05$	$\chi^2 = 681.154$ df $= 242$ $p< .000$
	χ^2 / df	P < 3	2.815
	GFI	> 0.9	.900
	AGFI	> 0.9	.874
	RMR	< 0.05	.059
	RMSEA	< 0.08	.060
Incremental Fit Measure	NFI	> 0.9	.922
	IFI	> 0.9	.949
	TLI	> 0.9	.941
	CFI	> 0.9	.948

The model fit summary presented in Table 40 shows significant improvements in the fit indices from the initial model. The CFA findings indicate that no identification problems occurred, and the results showed a good fit of the suggested index. This study's EFA and CFA helped to modify the model to improve the overall model fit. The model fit indices showed improvement, with NFI, IF, TLI, and CFI falling in the acceptable range of suggested values. The RMSEA value of below 0.08 is in an acceptable range but is still above the excellent value of 0.05.

5.7. Construct Validity and Reliability

According to Lewis et al. (2005, p.396), construct validity refers to "*the measure based on a suitable operational definition of the construct, appropriately reflects the concept of interest*". There are six measurement properties of construct validity: (1) content; (2) factorial; (3) convergent; (4) discriminant and (5) nomological validity and (6) reliability. Hair et al. (2010) presented several measures to test for reliability and validity in CFA, including Composite Reliability (CR) and Average Variance Extracted (AVE).

5.7.1. Reliability

CR is a test to measure the overall reliability of a collection of items (Hair et al., 2010). Hair et al. (2010) outlined that the CRthreshold should be.70 or over.

5.7.2. Convergent validity

Fornell and Larcker's (1981) convergent validity test is a measurement of "high shared variance among multiple measures of each construct, relative to the amount of variance due to the measurement error" (Batra and Ahtola, 1991, p.160). It is measured through AVE statistics, where the conventional minimum is 0.50 (Fornell and Larcker, 1981). Thus, AVE should be greater than 0.50 for all dimensions in order to establish convergent validity (Batra and Ahtola, 1991; Sweeney and Soutar, 2001; Lin and Wang, 2006). Constructs with an AVE of less than 0.50 indicate that convergent validity is questionable (Fornell and Larcker, 1981). Convergent validity issues are attributable to a lack of correlation among observed variables within the latent factor, in other words, the observed variables do not explain the latent factor (Hair et al., 2010). Table 42 presents the CR and AVE test results.

Table 42: Summary of CR and AVE results

Variables	CR	AVE
Smart Mobile Device Usage Experience	.84	.58
Satisfaction	.88	.66
Intentionto Share Knowledge	.89	.71
S-Commerce Usage Experience	.91	.55
Purchase Intention	.93	.74

The table shows that the CR of smart mobile device usage experience, satisfaction, intention to share knowledge, s-commerce usage experience, and purchase intention are above 0.80. Additionally, for AVE, all variables are above 0.50, with intention to purchase the highest, at 0.74.

5.7.3. Discriminant validity

Discriminant validity concerns the extent to which a latent variable differs from other latent variables (Farrell, 2010). It measures how much a latent variable accounts for

more variance in the observed variables than measurement error or other constructs within the conceptual framework (Farrell, 2010).

Fornell and Larcker's (1981) discriminant validity test is widely used to examine the AVE for each latent variable against the shared variances of other latent variables. Shared variance is the amount of variance in a construct that can be explained by another construct can explain and is represented by the square of the correlation between any two constructs (Farrell, 2010) or the squared structural path coefficient between two constructs (Sweeney and Soutar, 2001). Fornell and Larcker's (1981) discriminant validity test requires that the AVE for an individual construct be greater than the shared variance between the individual construct and the other constructs (Sweeney and Soutar, 2001; Lin and Wang, 2006). Table 43 shows discriminant validity analysis results for all constructs.

Table 43: Discriminant Validity Analysis Results

	CR	AVE	Smart Mobile Device Usage Experience	Satisfaction	S-Commerce Usage Experience	Intention to Share Knowledge	Purchase Intention
Smart Mobile Device Usage Experience	.84	.58	**.76**				
Satisfaction	.88	.66	.41	**.81**			
S-Commerce Usage Experience	.91	.71	.42	.56	**.84**		
Intention to Share Knowledge	.89	.55	.41	.53	.62	**.74**	
Purchase Intention	.93	.74	.33	.67	.58	.58	**.86**

The table above shows that the AVE for each construct is greater than the shared variances between the construct and the other constructs.

Farrell (2010, p.135) stated that if discriminant validity is not established, *"...latent constructs are having an influence on the variance of more than just the observed variables to which they are theoretically related"*. In other words, items may be cross-loaded onto more than one construct.

Farrell (2010) outlined several techniques to assess the problems that cause insufficient discriminant validity, for example, common method factors (Podsakoff et al., 2003), further analysis using residual terms (Little, et al., 2006) or tolerance analysis (Nunnally and Bernstein, 1994). However, Farrell (2010) recommended performing EFA to determine if discriminant validity issues are attributable to poorly performing items, for example, cross-loading items. If items are found to cross-load, removal of these items should improve discriminant validity, but the researcher must consider the trade-offs for the number of scale items (for face validity or construct coverage) that perform well and discriminate (Farrell, 2010).

5.8. SEM and Hypothesis Testing

According to Lomaxand Schmacker (2010), the next step after conducting CFA and measuring the validity and reliability of the measurement model is to test the causal relationships between the research constructs. SEM is a statistical technique used to examine sets of relationships between continuous independent and dependent variables (Tabachnick and Fidell, 2007). Hair et al. (2010, p.608) stated that SEM is used mainly to "*explain the relationships among multiple variables, ... [examine] the structure of interrelationships expressed in a series of equations ... [and] depict all of the relationships among constructs involved in the analysis*". The results of CFA form the basis of SEM.

To measure the relationships between the latent variables, the structural model is drawn in Figure 30 based on the hypotheses identified after reviewing the literature.
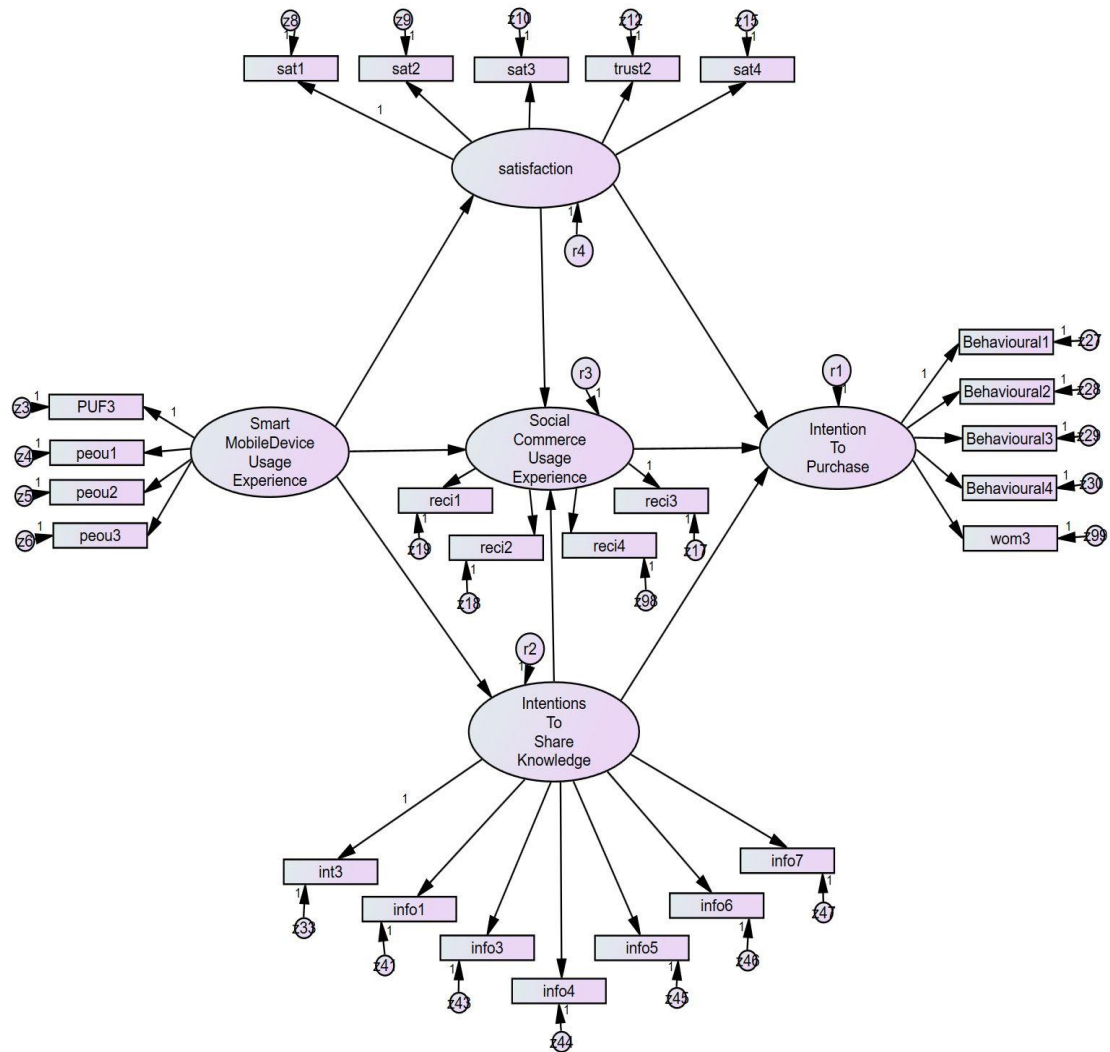
Figure 30: Structural Model

5.8.1. SEM path diagram specification

A structural model with retained common-method-bias-adjusted composites (Lowry et al. 2014) was developed using the relationships specified in the hypotheses in Chapter 3. Summaries of the hypotheses are shown in Table44.

Table 44: Summary of Proposed Hypotheses

No	Hypotheses
H1	Consumers' smart mobile device usage experience will positively affect their satisfaction
H2	Consumers' satisfaction will positively influence their s-commerce usage experience
H3	Consumers' smart mobile commerce usage experience will positively affect their intention to share knowledge
H4	Consumers' intention to share knowledge will positively influence their s-commerce usage experience.
H5	Consumers' smart mobile commerce usage experience will positively affect their s-commerce usage experience.
H6	Consumers' s-commerce site usage experience will positively influence their intention to purchase.
H7	Consumers' satisfaction will positively influence their intentions to purchase.
H8	Consumers' intentions to share knowledge will positively influence their intention to purchase.

5.8.2. SEM model measurement

The same fit indices discussed and used previously in CFA are used to measure the fit of the structural model. The initial SEM model's values are presented in Table 45.

Table 45: SEM Model Fit

	Measure of Fit	Suggested Value	Result
Absolute Fit Measure	χ^2	$p > .05$	$\chi^2 = 817.328$ df = 267 $p < .000$
	χ^2 / df	P < 3	3.061
	GFI	> 0.9	.882
	AGFI	> 0.9	.857
	RMR	< 0.05	.111
	RMSEA	< 0.08	.064
Incremental Fit Measure	NFI	> 0.9	.912
	IFI	> 0.9	.939
	TLI	> 0.9	.932
	CFI	> 0.9	.939

The results in Table 45 show that GFI (0.882) and AGFI (0.857) values are not satisfactory, as they are below the suggested value of 0.9. However, theother values, NFI (0.912), IFI (0.939), TLI (0.932), and CFI (0.939), are all above the suggested values, and RMSEA is lower than the recommended value of 0.08 or below. Therefore, the overall SEM model path analysis shows good fit.

7.8.3. Hypothesis testing

To assess the hypothesised relationships, the p-values can be examined. Field (2013) noted that if p<.05, there is a significant prediction between the two constructs, whereas if p>.05, there is a non-significant prediction.

Table 45 shows that all constructs have a direct effect; m-commerceusage experience has a direct effect on satisfaction, s-commerce use and knowledge sharing. Satisfaction and knowledge sharing have a direct effect on s-commerce use and purchase intention. Finally, s-commerceuse has a direct effect on purchase intention. All values are significant. Table 46 illustrates the results of the hypotheses test.

**Table 46: Regression Weights for the Structural Model**

Hypotheses	B	S.E.	C.R.	P	β	Result
H1: Consumers' smart mobile device usage experience will positively affect their satisfaction.	.799	.107	7.483	*** <0.001	.421	Significant
H2: Consumers' satisfaction will positively influence their s-commerce usage experience.	.457	.070	6.572	*** <0.001	.427	Significant
H3: Consumers' smart mobile commerce usage experience will positively affect their intention to share knowledge.	.275	.097	2.826	.005 <0.001	.141	Significant
H4: Consumers' intention to share knowledge will positively influence their s-commerce usage experience.	.265	.045	5.906	*** <0.001	.258	Significant
H5: Consumers' smart mobile commerce usage experience will positively affect their s-commerce usage experience.	.897	.107	8.325	*** <0.001	.490	Significant
H6: Consumers' s-commerce site usage experience will positively influence their intention to purchase.	.488	.045	10.865	*** <0.001	.464	Significant
H7: Consumers' satisfaction will positively influence their intentions to purchase.	.204	.053	3.880	*** <0.001	.200	Significant
H8: Consumers' intentions to share knowledge will positively influence their intention to purchase.	.526	.097	5.416	*** <0.001	.282	Significant

*** = p < .001

5.9. Mediation

Hair et al. (2010, p.866) stated, "*A mediating effect is created when a third variable / construct intervenes between two other related constructs*". The mediator theoretically facilitates the relationship between the other two constructs. Preacher and Hayes (2008, p.879) suggested. "*hypotheses involving mediation are common in the field of behavioural science, adding mediation exists when predictor affects a dependent variable through at least one intervening variable*". Hair et al. (2010) highlighted the importance of the underlying condition that mediation requires significant correlations among all three constructs (X, Y and M in Figure 31),

whileHair et al. (2010) suggested that mediation can be explained in two outcomes – complete mediation and partial mediation – which depend on whether the mediating construct either completely explains or does not explain the relationship between the two constructs. Zhao et al. (2010) suggested five typologies of mediation, which break down mediation results into further categories than simply complete and partial mediation. This study follows Zhao et al.'s (2010) classification of mediation results.
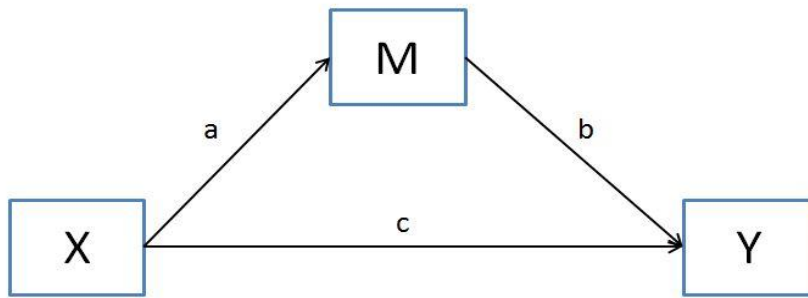
Figure 31: Path Diagram of the Mediating Effect

The classifications of mediation are as follows:

1. Complementary mediation: A mediated effect (a x b) and direct effect (c) both exist and point in the same direction.
2. Competitive mediation: A mediated effect (a x b) and direct effect (c) both exist and point in the opposite direction.
3. Indirect-only mediation: A mediated effect (a x b) exists, but no direct effect.
4. Direct only nomediation: A direct effect (c) exists, but no indirect effect.
5. No-effect nomediation: Neither a direct effect nor an indirect effect exists.
   (Zhao et al., 2010, p.200)

The guidelines developed by Preacher and Hayes (2008) and Zhao et al. (2010) were used to examine the mediating effects. The 95% confidence interval of the indirect effects was obtained with 5000 bootstrap resamples (Preacher and Hayes, 2008). The results showed thatthe mean indirect effect of m-commerce value through satisfaction was significant ($a \times b = 0.35$), with a 95% confidence interval excluding zero that the mean indirect effect of m-commerce value through s-commerce was significant ($a \times b = 0.29$), with a 95% confidence interval excluding

zero, thatthe mean indirect effect of m-commercevalue through knowledge sharing was significant ($a \times b = 0.29$), with a 95% confidence interval excluding zero. In addition, the direct effect of m-commerce value on purchase intention was significant ($c = 0.42$, $p<0.01$), and the mean indirect effect of satisfaction value through s-commerce was significant ($a \times b = 0.18$), with a 95% confidence interval excluding zero. Finally, the mean indirect effect of knowledge sharing value through s-commerce was significant ($a \times b = 0.25$), with a 95% confidence interval excluding zero.Table 47 illustrates the mediation results.

Table 47: Summary of Mediation Results

Mediator	Independent Variable	Dependent Variable	a x b path	c path	p	Lower bound	Upper bound	Results
Satisfaction	Smart Mobile Device Usage Experience		.35	.42	*** <0.001	.24	.45	Complementary
S-Commerce Usage Experience	Smart Mobile Device Usage Experience		.29	.42	*** <0.001	.21	.38	Complementary
Intentions to Share Knowledge	Smart Mobile Device Usage Experience	**Purchase Intention**	.29	.42	*** <0.001	.22	.37	Complementary
S-Commerce Usage Experience	Satisfaction		.18	.74	*** <0.001	.13	.24	Complementary
S-Commerce Usage Experience	Intention to Share Knowledge		.25	.69	*** <0.001	.18	.33	Complementary

5.10. Moderation

The consideration of gender in the behaviour modelsbegan in the gender schema theory (Bem, 1981) and other TAMs. According to Venkatesh and Morris (2000), men and women differ in their decision-making processes and usually use different socially constructed cognitive structures.

Venkatesh et al. (2003) found that TAM's explanatory power significantly increased – by 52% – after the inclusion of gender as a moderator. The performance expectancy related to technological factors was influenced by gender, with the relationship being significantly stronger for men than for women.

Age is an important demographic variable that has direct and moderating effects on behavioural intention and the adoption and acceptance of technology. In the organisational context, the relationship between performance expectancy and behavioural intention was stronger for younger employees than for older ones (Venkatesh et al., 2003).

While TAMsupports the moderating role of gender and age, the results are mixed. The moderating analysis shows that there is no influence of genderand age (Table 48)in this research. It may therefore be the case that, within a usage of m-commerce and s-commerce context, males and females do not differ in terms of the emphasis they place on intention to purchase, at least not to the extent found in other, more general online purchase behaviour.However, the majority of quantitative survey participants were relatively young adults who used smart mobile devices. Technology acceptance within the sample showed no differences because all respondents accessed SNS and other platforms through smart mobile devices.

Table 48: Summary of Moderation Results (Gender and Age)

Hypotheses	C.R.	P	β	Z-Score Gender	Age
H1: Consumers' smart mobile device usage experience will positively affect their satisfaction.	7.483	*** <0.001	.421	.888	-1.845
H2: Consumers' satisfaction will positively influence their s-commerce usage experience.	6.572	*** <0.001	.427	-.118	-.665
H3: Consumers' smart mobile commerce usage experience will positively affect their intention to share knowledge.	2.826	.005 <0.001	.141	.491	-1.67
H4: Consumers' intention to share knowledge will positively influence their s-commerce usage experience.	5.906	*** <0.001	.258	.029	-2.229
H5: Consumers' smart mobile commerce usage experience will positively affect their s-commerce usage experience.	8.325	*** <0.001	.490	1.272	-0.287
H6: Consumers' s-commerce site usage experience will positively influence their intention to purchase.	10.865	*** <0.001	.464	-2.377	1.88
H7: Consumers' satisfaction will positively influence their intentions to purchase.	3.880	*** <0.001	.200	1.799	-1.683
H8: Consumers' intentions to share knowledge will positively influence their intention to purchase.	5.416	*** <0.001	.282	.778	-1.022

5.11. Summary

This chapter presents the empirical results of the data analysis. First, the descriptive analysis determined the profile characteristics and a statistical descriptive analysis for the sample. Second, the reliability and validity of the sample measures were extracted through EFA in SPSS 22. CFA andSEM were followed in the chapter to present a final measurement model in AMOS 22. With the final measurement model, the hypotheses were tested through a path analysis in AMOS 22. Finally, a mediation

technique was employed to analyse mediation effects between constructs in the measurement model.

The results indicated that the employed measures were appropriate and that the theoretical measurement model showed satisfactory and acceptable reliability, discriminant validity and convergent validity. In addition, SEM validated the proposed research framework. The mediation process was carried out using Preacher and Hayes's (2008) method, and all five mediating effects are complementary, with all paths being significant. The next chapter discusses the findings and managerial implications.

Chapter 6 Discussion and Managerial Implications

6.1. Introduction

This research aims to investigate the factors that contribute to consumers' intention to make purchases via s-commerce sites by exploring their usage experience with mobile devices, their satisfaction toward shopping on s-commerce sites, their s-commerce usage experience, and their intention to share knowledge. This study aims to evaluate TAM (Davis, 1989) in the context of online shopping and s-commerce platforms and to validate key variables that are expected to be particularly relevant to purchase intention. This study developed and empirically examined a conceptual framework. The next section further elaborates on this study's implications for theory and how the findings compare and contrast with those of similar studies.

6.2. Contribution to Theory and Framework

This study's findings provide several theoretical implications for the online shopping environment literature. The traditional e-commerce concept has evolved as a result of the development of technology and the introduction of subset platforms. Previous studies that use TAM (Davis, 1989) or related theoretical models might not fully capture consumers' online shopping behaviour. The findings highlight the importance of developing a comprehensive framework based on TAM (Davis, 1989) by modifying and updating variables that explain consumers' online shopping behaviour.

As a contribution to theory, the proposed research framework is different from the original model in terms of the exclusion of some constructs. For example, attitude plays a less important role in this study because many consumers already used m-commerce and were connected to the online social environment; thus, they already had a positive attitude towards accepting technology andwere considered current users and participants.

Other constructs – perceived usefulness and perceived ease of use –were absorbed into thesmart mobile device usage experience construct, as previous studies have proven the significance of m-commerce characteristics (Kim et al., 2010; Zhang et al.,

2012; Chong et al., 2012). The original constructs were included and embedded in new constructs but are not explicit in the literature.

This study is one of the first to examine the relationship between smart mobile device usage experience and s-commerce and their influence in one theoretical research framework. Despite the extensive use of TAM in the online shopping sector, few studies have added s-commerce use to modify the model to the online shopping environment. This study reveals that usage experience of m-commerce and s-commerce are important factors that affect an online shopping user's purchase intention. Both mobile and social commerce are in demand, meaning that their contributions to annual sales rates areincreasing significantly.

The findings of quantitative studies have provided insights on consumer satisfaction and knowledge sharing behaviour through social network platforms. Previous studies have explored cognitive, affective, and attribute satisfaction (Oliver, 1996) through pre-purchase and post purchase evaluation (Park et al., 2012); however, little research explores the influence of another's experience. A key contribution to theory made by this study is the relationships between online social network platforms through experiences and knowledge sharing.

Online social interaction is the linkage in the relationship between satisfaction and knowledge sharing behaviour. Chiu et al. (2006) defined online communities as networks that individuals with share common interests, goals, or practices use to interact to exchange information and/or knowledge by socially engaging within the online community. These computer-mediated communication-based online platforms are actively used by individual consumers, creating a new phenomenon in online shopping behaviour. Consumers were motivated and driven to use e-commerce because online retailers provided extra promotions and discounts to attract consumers. The development and establishment of e-commerce subset platforms such as m-commerce and s-commerce and social media use provided consumers with more convenient options and the ability to search for the best results for their own needs.

This study contributes to the development of the theoretical model with regard to the significant variables that influence consumers' online shopping behaviour and purchase intention.

The evolution of e-commerce has exceeded the expectations of researchers and retailers because it has yet to reach its potential and continues to show rapid growth. Technology use has certainly supported the use of social media on mobile devices and online transactions. In South Korea, 56% of all online sales are made through mobile devices, and this figure is expected to grow continuously (Statistics of Korea, 2016).

The findings of this research corroborate existing studies that provide evidence of the positive relationships between smart mobile device usage experience (Yang, 2010), satisfaction (Bhattacherjee, 2001; Thong et al., 2006), s-commerce usage experience (Cecere, 2010; Curty and Zhang, 2011; Kim and Park, 2013), and intention to share knowledge (Davenport and Prusak, 1998; Yu et al., 2010) and consumers' purchase intention. The mediation effect suggests the need for further analysis thatexplains and highlights the importance of s-commerce in the modern online shopping environment.

The quantitative results showed possible relationships between three factors, where s-commerce usage experience acts as a mediator.

6.2.1. Validation of the research hypotheses

This section introduces and discusses the results presented in Chapter 5 with respect to the proposed research hypotheses, objectives and questions, providing an answer to each research question and its related hypotheses.

6.2.1.1. Smart Mobile Device Usage Experience

H1: *Consumers' smart mobile device usage experience will positively affect their satisfaction*

-> Significant / Accept hypothesis

H3: *Consumers' smart m-commerce usage experience will positively affect their intention to share knowledge*

-> Significant / Accept hypothesis

H5: *Consumers' smart m-commerce usage experience will positively affect their s-commerce usage experience*

-> Significant / Accept hypothesis

According to this study, m-commerce provided perceived usefulness and perceived ease of use, which enabled consumers to multitask and emphasisedan easy-to-use and ubiquitous environment. Consumers are more willing to connect to online platforms through smart mobile devices and their usage level is significantly increasing year by year. The hypotheses were drawn based on previous literature, stating that smart mobile device usage experience will positively affect the above constructs.

SEM and factor analysis results from the pilot and main studies confirmed that smart mobile device usage experience enhanced and influenced consumer satisfaction, s-commerce usage experience and intention to share knowledge.

This study has several implications. First, this is one of the few studies to offer a comparative study of how m-commerce use (smart mobile device usage experience), whichinfluences user satisfaction, will encourage other users' behaviour, level of participation in social media, network usage and online knowledge sharing behaviour. Previous researchers focused mainly on m-commerce adoption (Yang, 2005; Chong et al., 2012), wireless technology adoption (Yen et al., 2010), management and marketing of m-commerce (Benou et al., 2012), the effect of m-commerce on culture (Zhang et al., 2012), and mobile payments (Kim et al., 2010).

Wang and Lao (2007) examined m-commerce users' satisfaction, identifying three essential components to achieve it: "*(1) summary of affective response, which varies in intensity; (2) time of determination, which varies by situation but is generally limited in duration; and (3) satisfaction focus around product choice, purchase, and consumption*" (Wang and Lao, 2007, p.384). Their proposed framework measured content quality, appearance, service quality and ease of use. Similarly, Kuo et al. (2009) examined the relationship between mobile services and service quality, perceived value, customer satisfaction and post-purchase intention. San-Martin et al. (2013) suggested the importance of online WOM through various platforms for m-commerce usage in Spain.

This research contributes to the existing literature by linking different constructs and variables with consumer behaviour, such as purchase intention. M-commerce is unique due to its wireless connectivity, which provides convenient functioning to users, mainly smart mobile devices. This convenience is not new a concept or feature for consumers, and the majority of users expect to receive these functions and seek

additional features. It is important to link the social aspect to mobile technology and applications that generate more attraction and interest from consumers' point of view, which can encourage purchase intention. Consumers are no longer only price sensitive in the online environment; they seek to have all convenience features in m-commerce, with the additional achievement of satisfaction, s-commerce usage experience and intention to share knowledge. This finding was proven in a mediation analysis, which indicated that all three constructs acted successfully as mediators for smart mobile device usage experience.

M-commerce use no longer includes use of a smart mobile device that provides Internet access at any time or place. M-commerce involves collaboration with social media, networks and more convenient consumer functions. The security of personal devices, accounts and information should be improved to secure personal information, encouraging users to connect to the online environment through their mobile devices.

6.2.1.2. Satisfaction
H2: **Consumers' satisfaction will positively influence their s-commerce usage experience**

-> Significant / Accept hypothesis

H7: **Consumers' satisfaction will positively influence their purchase intention**

-> Significant / Accept hypothesis

According to this study, satisfaction is a post-consumption evaluation in which consumers compare their pre-consumption expected value and their judged post-consumption value.Then, consumers share their experience –in terms of positive or negative experiences and feelings – with others, such as family and friends, or with online community members (Rheingold, 2000). Many researchers (Bai et al., 2008; Bhattacherjee, 2002; Kim et al., 2006) have studied user satisfaction and found that positive experiences tend to influence others' intention to purchase or re-purchase. This study's results extend the literature on satisfaction by applying a unique perspective that is embedded in online shopping behaviour to evaluate how one's

overall satisfaction with his or her post-purchase experience influences others' intention to purchase through s-commerce platforms.

The SEM and factor analysis techniques considered in the study confirmed that satisfied consumers influenced individuals to use s-commerce and – through social media or network platforms – encouraged them to make purchases. The direct relationship between other consumers' satisfaction and s-commerce usage experience were significant and led to the acceptance of the hypothesis. The relationship between consumers' satisfaction and purchase intention was also significant; thus, the proposed hypothesis is accepted. These results are consistent with previous studieson consumer satisfaction, showing significant results regarding expectations, post-purchase evaluations, re-purchase intention and loyalty (Oliver et al., 1996; Solvang, 2007; Park et al., 2012; Srivastava and Rai, 2013; Mpinganjira, 2014).

Many researchers have argued that customer loyalty and re-purchase should be considered as identical factors (Wind, 1978; Gronhaug and Gilly, 1991; Solvang, 2007) because they both help to create barriers that make it harder for customers to switch to competitors. Park et al. (2012) confirmed that pre-purchase and post-purchase consumption service encounters influence satisfaction and re-purchase; however, it is important to note that overall satisfaction is not guaranteed because consumers may change their final evaluationsas a result of experience accumulated during the transaction process (Bhattachejee, 2001). Additionally, not all satisfied customers are considered loyal customers; these post-purchase consumers can share other opinions through online communities based on their own perceptions of the purchased product.

This research contributes to the existing literature by linking consumer satisfaction with s-commerce usage experience and with consumer behaviour, such as purchase intention. Previous studies include purchase intention as constructs of purchase intention (Taylor and Baker, 1994) re-purchase (Solvang, 2007; Mpinganjira, 2014), and intention to purchase (Weisberg et al., 2011). However, regarding satisfaction, many researchers focused on loyalty (Solvang, 2007; Srivastava and Rai, 2013; Moriuchi and Takahashi 2016), service/information quality (Taylor and Baker, 1994; Srivastava and Rai, 2013; Ghasemaghaei and Hassanein, 2015), and trust (Kim et al., 2009; Filieri, 2016).

This study's mediation results confirm that satisfaction can act as a mediator for smart mobile device usage experience and s-commerce usage experience can act as a mediator for satisfaction. As in previous studies, loyalty and WOM were found to be important factors. To maintain consumers' expectation level, linkage with online social media, networks and e-commerce are the next step to enhance consumers' purchase intention. This study confirms direct relationships between satisfaction and smart mobile device usage experience (m-commerce), s-commerce usage experience and purchase intention. It is important to note the full complementary mediation effect because the use of social media and networksinfluences consumers' online shopping behaviour.

6.2.1.3. Intention to Share Knowledge

H4: *Consumers' intention to share knowledge will positively influence their s-commerce usage experience*

-> Significant / Accept hypothesis

H8: *Consumers' intention to share knowledge will positively influence their purchase intention*

-> Significant / Accept hypothesis

According to this study, intention to share knowledge includes knowledge creation, acquisition, and codification. Knowledge can be created by individuals through their own experiences or acquired from others and openly shared. Many researchers (Davenport, 1997; Venkatesh et al., 2003; Bock et al., 2005) who have examined the organisational environment found that knowledge sharing is of significant value within organisations. In an online environment, knowledge can be shared among strangers and from one to many and many to one. Previous studies have found a positive relationship between knowledge sharing (transfer) and purchase intention and encouragement of individuals to make purchases.

The SEM and factor analysis techniques considered in the main study confirmed the direct relationship between intention to share knowledge and s-commerce usage experience. The enhancement of s-commerce useincreases purchase intention. The

results also confirm a direct relationship between intention to share knowledge and purchase intention, possibly because the recipient of knowledge sharing is influenced and encouraged to purchase the product or service accordingly. Knowledge sharing and knowledge transfer have been popular topics for many researchers over the years. Until recently, knowledge sharing and knowledge transfer were carried out mainlyin the organisational environment (Venkatesh et al., 2003; Bock et al., 2005; Gagne, 2009; Swift and Virick, 2013). The development of technology and online community platforms along with social media, technology acceptance, the case of blogs (Hsu and Lin, 2009; Yu et al., 2010), and online communities (Hew and Hara, 2007; Erden et al., 2012) have been studied extensively.

This research has contributed to the existing literature by linking consumers' knowledge sharing behaviour with s-commerce use and consumer behaviour such as purchase intention. Having reviewed previous studies on the online community sector, this study offers a rich and detailed account of the antecedents and influences of knowledge sharing, whichcan encourage other potential consumers within the community. Previous studies focused on "what" motivates individual members to share their knowledge and "why", whereas this study aims to examine the interrelationship betweens-commerceuse and purchase intention.

This study confirms previous studies' implications of knowledge sharing behaviour, such as (1) enhancing one's professional reputation (Wasko and Faraj, 2005); (2) becoming altruistically motivated (Hars and Ou, 2001); (3) promoting collectivism (Yoo et al., 2012); (4) meeting external goals (Beenen et al., 2004); and encouraging reciprocity (Hew and Hara, 2007). In addition, this study finds a positive link between social media and e-commerce usage, highlighting the importance of personalisation, egoism-related motivation, and online communication between members. As these factors increase, individuals have a lower chance to meet other members face-to-face to build social relationships.

More importantly, this study's results demonstrate that people's perceptions and expectations of what a community has to offer can influence their use of social media ande-commerce and their purchase intention. This study's mediation results confirm that intention to share knowledge can act as a mediator for smart mobile device usage experience, while s-commerce usage experience can act as a mediator for knowledge

sharing. As the social aspect becomes a more significant influence, knowledge sharing behaviour can link online social media platforms and act as a strong construct variable; this finding contributes to the literature.

The impact of the online community is significant, and an enormous amount of knowledge is shared between members. At this stage, few platforms provide clear guidelines or regulations regarding contents and contexts. Few shopping information sharing websites survive over the years. In most cases, users volunteer to participate without any recognition and reciprocity. Thus, information seekers should participate actively to lure and encourage other community members to share their own knowledge.

6.2.1.4. S-Commerce Usage Experience

H6: *Consumers' s-commerce site usage experience will positively influence their purchase intention*

    -> Significant / Accept hypothesis

According to this study, s-commerce first rose to prominence in 2005, creating a new frontier for e-commerce that uses social media platforms and encourages individuals to participate. Individual users' participation leads to growth in user-generated content and attracts more individuals to social media and e-commerce. Despite being a subset platform of e-commerce, s-commerce is a new phenomenon in the online environment and has yet to reach its potential within the market. Many studies (Stephen and Toubia, 2010; Rad and Benyoucef, 2011; Curty and Zhang, 2011) show that s-commerce usage experience is closely related to an individual's purchase intention because it provides consumers a space to communicate in online communities, forums, and discussion boards.

Zhang et al. (2014) further examined the s-commerce literature, finding a link between the technological characteristics of the s-commerce environment and customer participation. When individuals are more active in social networks, they are likely to gain more social support and recognition for their social presence, encouraging their participation in s-commerce.

Hajli et al. (2015) examined consumers' participation in online communities from an s-commerce perspective. This study developed new framework based on TPB to determine the influence of users' continued participation in s-commerce. The constructs of perceived value, social support, subjective norms, attitude and perceived behavioural control were tested, and users' continued participation was found to be heavily dependent on users'behaviour.

The SEM and factor analysis techniques considered in the main study confirmed that s-commerce use increases and encourages consumers to purchase, and this direct relationship was significant. Consistent with previous research, the research results strongly supported H6.

The statistical data show that out of all the constructs, s-commerce showed the most significant values, explaining the importance of social media and network platforms in the online environment. Additionally, this study's mediation analyses had several theoretical implications. Because many previous studies focused on direct relationships with proposed variables, this study demonstrates the role of s-commerce usage experience as a mediator. The level of user satisfaction and intention to share knowledge encourage users' participation in an online social environment. Social media now includes numerous platforms that are not limited to either news media or network sites; social media is becoming the largest subset platform of e-commerce. The role of mediators in this study explains that consumers seek the convenience of m-commerce, want to hear about other's experiences, and seek expertopinions prior to making purchase decisions. Consumers' online shopping behaviour is no longer a simple direct relationship among those variables; now,as consumers become smart consumers, their shopping behaviour includes a more complex and combined set of variables.

This study agrees with and confirms the research by Baek et al. (2011). Their findings suggest that consumers were driven to social media to find news, entertainment and job-related content. Social media platforms provide all necessary content and contexts and now representsome of the platforms most widely used by advertisers and marketers to test and advertise products and services. It is undoubtedly true that the numbers of active social media users are increasing, and they show no sign of decreasing over the years.

The unique contributions of this study's resultsare significant. The s-commerce paradigm is still shifting around e-commerce and may settle with the development of social media. Consumers are willing to participate in social media and networks, fostering encouragement and attracting other consumers to join. Increasing news media outlets now participate on social media and regularly create threads and ask individuals to participate by posting questions or sharing individual insights. This study highlights the importance of social media use for bothend parties – the retailer (or a firm) and individual users – who can participate in any community based on their interests.

6.2.2. Summary of theoretical contributions

This chapter interpreted and discussed the results of the proposed research model in order to examine and develop our understanding of the factors that influence a consumer's purchase intention through other users' satisfaction, s-commerce usage experience and intention to share knowledge. The proposed framework was tested, validated and revised through statistical analyses using anSEM tool.

In general, this study identified three constructs (satisfaction, s-commerce usage experience and intention to share knowledge), which was expected based on the theoretical and empirical foundations from previous studies. The findings confirmed the importance of s-commerce's role, showing a significant relationship with both satisfaction and intention to share knowledge.

This study's statistical analysis results suggest that smart mobile device usage influences satisfaction, s-commerce usage experience and intention to share knowledge online. Additionally, this study found a complementary mediation path between smart mobile device usage experience and intention to purchase via satisfaction and intentionto share knowledge, as smart mobile device usage (and m-commerce) is still showing rapid growth and contributes to annual online sales figures. By accessing social media and networks, mobile technology users feel increased convenience, receive better deals and promotions, and search for necessary information from information shared through the online community, enabling these consumers to participate more actively in purchase behaviour. Consumers are

generally more strongly persuaded through these features provided by their hand-held smart mobile devices.

Intention to share knowledge presents similar results as consumer satisfaction:as knowledge sharing activities increase, s-commerce usage experienceimproves. This direct relationship is significant and has positive influences. This study confirms that individual members within the online community and other environments prefer to connect with someone who is trustworthy or who has expertise in the desired area, leading other consumers to seek more information or knowledge through online social media platforms or communities.

The mediation analyses confirm relationships between the intention to share knowledge and satisfaction and purchase intention via s-commerce usage experience.

In the proposed framework, s-commerce usage experiencecontributes the most, as the construct mediated the effects of smart mobile device usage experience, satisfaction and intention to share knowledge on purchase intention. The statistical analyses confirmed complementary mediation for all constructs, explaining the importance of social aspects within the modern online environment. Social media platforms play an integral role in this study because they convey other constructs by providing both consumers and retailers with a suitable platform to participate in online communities, forums, blogs, review websites, and, most importantly, networks.

Given this research's contribution to theory and the framework presented, recommendations for practitioners will be presented in the next section.

6.3. Managerial Implications

This study presents various managerial implications for practitioners in emerging online social networks, media and commerce platforms. Since the introduction of e-commerce, consumers and retailers have evolved as a result of the development of technology, adjusting one's lifestyle according to the convenience functions provided. E-commerce has multiple subset platforms that contribute to overall online sales growth, the main streams of which are considered m-commerce and s-commerce.

The growth in online retail sales is significant and has yet to reach its peak. In the UK, online sales in 2013, 2014, and 2015 reached £33.4 billion, £37.9 billion and £42.6

billion, respectively, each a new record (Mintel report, 2016b). The significance of this growth is supported by the finding that 95% of Internet users have made purchases online, as consumers' perception is that online shopping is cheaper than shopping in offline stores (Mintel report, 2016b). Online sales in Europe grew by 86% between 2011 and 2015 and areexpected grow continuously. Online sales across the European market are forecast to reach approximately 286 billion Euros in 2021 (Mintel, 2016a). Asia, China and South Korea (PwC, 2016; Statistics of Korea, 2016) have also shown significant growth in online sales, gaining greater shares of total retail sales; thus, the rise of online shopping and e-commerce is universal. As online sales increase, consumers have more options and opportunities to search, compare and contrast products to find suitable ones for their needs and better alternatives or cheaper options of either the same product or suggested alternative products.

Consumers now have a greater freedom of choice from a wide range of selections in the online environment, with no extra switching costs, and better, easy-to-find options for the same product or suitable alternatives. Smart consumers now prefer to read about other consumers' experiences with the product or service prior to making any purchase decisions. This point is illustrated in Pete Blackshaw's (2008) book titled, "*Satisfied customers tell three friends, angry customers tell 3,000*". Some consumers deliberately seek negative experience reviews because they think these reviews are authentic feedback.

Consumers' demand for convenience created an "on-demand" economy that operates mainly through online and mobile applications and provides a variety of services, such as private drivers, food delivery, cleaners, handy men and taxi services. Mobile platforms such as Deliveroo, Uber, and Handy attract consumers because they are easy to use and allow consumers to hire people to do jobs for them, from delivering food to cleaning houses and offices (Khakeeli, 2016). These newly established companies are outperforming traditional companies in the service industry. Consumers feel that these new services are easy to use, fast responses are guaranteed, and payment is hassle free, as no cash transactions are made. After using services, consumers are asked to rate their post-purchase experience, which can influence potential consumers, who will not use service providers with bad ratings. Cashless transactions play an important role in mobile applications because they it is a much easier payment option and no hidden charges can be requested from providers, as the

application approves all necessary payment.

This study's empirical results highlight the importance of social media, networks and e-commerce. Consumers are now equipped with knowledge and relatively high bargaining power because they can purchase from various online and offline channels. Consumers are becoming smarter and more price sensitive, only trying on sizes or checking products offline and then purchasing them online, as some retailers have different online and offline systems. Smartphones or tablet PCs can contain an enormous amount of personal data, enabling access to Internet browsing, e-mail accounts, and more complicated and sophisticated online banking. With just one click on a mobile device, userscan search and browse almost any kind of information they seek. At the same time, consumers can multi-task by browsing chatting apps, accessing online social networks, watching and listening to social media news. This study's results suggest that consumers seek information and knowledge through online environments, such as the online communities in which they participate, trusted forums and/or blogs they follow.

To attract more users, retailers must carefully consider elements such as subjective norms, costs, risks, and enjoyment, which attract individuals, from both the social and the consumer perspectives.

First, the findings of this study can be applied to any online environment anywhere in the world. Online sales are increasing worldwide. Because the online environment offers universal settings, it can be applied to any consumer anywhere on the globe. Despite the evolution of e-commerce and multiple functions that consumers use to search for products, services, and information, consumers' first priority has proven to be price. Different regions, continents, countries, and even websites within the same country may offer different prices and promotions. Therefore, to maintain and attract potential consumers, managers should be aware of promotions from competitors.

Second, online retailers must aim to secure loyalty among existing consumers and attract potential consumers. As much as price is the primary concern for online shoppers, loyalty schemes generate leverage for managers and retailers by providing benefits to consumers. Separate from promotions, loyalty programs provide member-only promotions, discounts, extra days of discounts, private sales, and, more

commonly, the collection of points that can be used as a payment method.

The typical loyalty scheme involves collecting points through a membership card, a number, an application or even through stamps. Most online shoppers participate in some kind of loyalty scheme: a report found that 91% of a global survey sample wasmembers of a loyalty or reward scheme (PwC, 2016). The most popular reason to participate in a loyalty scheme is to receive member-only discounts or offers. However, current loyalty schemes are considered too general and offer benefits that consumers do not appreciate, except reward points. As this study's findings suggest, managers and retailers should create communities through loyalty schemes and listen and respond to identify what their consumers want and need in order to provide more tailored benefits.

Third, managers and retailers can offer click-and-collect programs to online community members as an extra members-only benefit. In the UK, 83% of online shoppers said that they usually select the cheapest delivery option; hence, as many as 69% of online shoppers use click-and-collect (Mintel, 2016b). Price-sensitive online shoppers' priority isto save on delivery costs, and some retailers offer free delivery for transactions over a certain amount, such as Nike and Adidas in sporting goods and Waitrose and Ocado in grocery.

Additionally, Amazon offers free delivery options for Prime members. Managers and retailers can improve and match their delivery strategies to achieve higher customer satisfaction, which will encourage re-purchase intention for existing consumers and create positive recognition in the online community, thereby attracting potential consumers.

Finally, many retailers offer "online only" promotions on their mobile applications or websites that provide extra discounts for online purchases. However, some retailers do not accept returns of these purchases to offline stores, charge for delivery or include other complications. The findings of this study suggest that it is important for managers and retailers to achieve consumer satisfaction; satisfied consumers will share their positive post-purchase experience through the online community to encourage potential consumers to purchase. Omnichannel retailing can fulfil the needs of both retailers and consumers. The omnichannel strategy is simply unified prices,

promotions and other activities between online and offline retailers. Many major retailers still have separate databases for online and offline purchases, thereby using different strategies throughout a promotional period.

The study by Sopadjieva et al. (2017) published in the Harvard Business Review supports this suggestion: customers who engaged in omnichannel shopping spent an average of 4% more than single-channel customersduring every shopping trip to the offline store and 10% more in an online store(Sopadjieva et al., 2017). Consumers are now demanding innovation from retailers because they prefer to have an omnichannel experience that provides mobile applications or a webpage to compare to traditional stores (PwC, 2016).

Consumers are now using online social networks, media and commerce platforms to share and gain information through smart mobile devices. Mintel (2016a) found that in the UK, 42% of young adults (aged between 16 and 24) access social media or networksonly via their smartphones (Mintel report, 2016a). Therefore, retailers can adjust the benefits of mobile applications, web promotions and offline promotions into a larger coherent strategy that can increase sales, customer loyalty, recognition and profit.

Chapter 7 Conclusions, Limitations, and Suggestions for Future Research

7.1. Introduction

This research aims to investigate the factors that contribute to consumers' intention to make purchases via s-commerce sites by exploring their usage experience with mobile devices, their satisfaction toward shopping on s-commerce sites, their s-commerce usage experience, and their intention to share knowledgewere reviewed to conceptualise the relevant theoretical and empirical foundations.

This chapter presents concluding comments for this thesis. The review of the research findings illustrate how far the research objectives have been attained.

7.2. Research Objectives

The objectives of the study outlined in Chapter 1 were the following.

1. To develop a research framework to examine the factors contributing to consumers' intentions to make purchases on s-commerce sites using their smart mobile devices.

2. To examine the influences of smart mobile device usage experience on consumers' s-commerce site satisfaction, intention to share knowledge, and s-commerce site usage experience.

3. To examine how consumers' s-commerce site satisfaction, intention to share knowledge, and s-commerce site usage experience affect their intention to make purchases on s-commerce sites.

4. To examine the ability of users' usage experience with s-commerce sites to mediate the relationships between consumers' intention to share knowledge and their purchase intentions and between consumers' satisfaction with s-commerce sites and their purchase intentions.

7.3. Conclusion

An overview of the chapters and their significance to this study is provided below.

The research aim was short and concise. The key purpose of the thesis was to investigate the factors that contribute to consumers' intention to make purchase via s-commerce sites. The introduction set out four objectives. The outcome of each objective will be stated.

1. To develop a research framework to examine the factors contributing to consumers' intentions to make purchases on s-commerce sites using their smart mobile devices.

Literature review chapter were completed that enabled a thorough understanding of the research task and expand knowledge of e, m, s-commerce, impact of social media and network. Knowledge sharing behaviour and satisfaction were reviewed. The first objective have been completed in following chapter (Research framework and hypotheses) by develop and present proposed framework (Figure 14, p. 82).

2. To examine the influences of smart mobile device usage experience on consumers' s-commerce site satisfaction, intention to share knowledge, and s-commerce site usage experience.

The development of technology has shifted consumers' activities from traditional e-commerce to m-commerce, significant growth of social media and networking contribute to positive usage of m-commerce (Yang, 2010). Online shopping has yet to reach its potential, and it breaks sales record year by year, encouraged by the growth of m- and s-commerce. To examine the influence of smart mobile device usage experience through proposed framework, second part of literature review chapter reviewed technology-acceptance-related theories, social impact theory and social exchange theory. First, TRA and TPB were reviewed because these two theories are the foundation of TAM. Although TAM was empirically proven to be useful for consumer behaviour and technology acceptance (Table 9, p.71), the theoretical model excludes subjective norms. Because this study highlighted the importance of social media and networks, other constructs were identified to suit the purposes of this study. The original variables were found in previous literature. Research hypotheses H1, H3, and H5 were examined and the result shows m-commerce usage experience has a

direct effect on s-commerce site usage experience, satisfaction and knowledge share (Table 46, p.152).

3. To examine how consumers' s-commerce site satisfaction, intention to share knowledge, and s-commerce site usage experience affect their intention to make purchases on s-commerce sites.

The revolution of s-commerce is improvement in communication with consumers. Web 2.0 supports SNS and allows multidirectional communication within platform. In s-commerce, user's perception, preference, and decisions are influenced by the content generated by interactions through social media and applications (Baghdadi, 2016). Satisfaction is a post-consumption evaluation, and consumers may have either a positive or a negative experience. Positive disconfirmation and satisfaction usually exist if a consumer's perception exceeds the expectations they have of their purchase. The knowledge sharing dynamic between community members in the online environment is beneficial to consumers who seek knowledge and encourages individuals to participate in online communities or similar platforms. Research hypotheses H6, H7, and H8 were examined and the results shows consumers' satisfaction, intention to share knowledge and s-commerce site usage experience has a direct effect on intention to purchase (Table 46, p.152).

4. To examine the ability of users' usage experience with s-commerce sites to mediate the relationships between consumers' intention to share knowledge and their purchase intentions and between consumers' satisfaction with s-commerce sites and their purchase intentions.

The use of s-commerce provides a mediation effect through other constructs, reflecting the modern online shopping environment. It was found that the mean indirect effect of satisfaction and knowledge share were significant with a 95% confidence interval excluding zero (Table 47, p.154).

The thesis investigates the antecedents and relationships between determinants. Consumers' smart mobile device usage experience will positively affect their satisfaction and intentions to share knowledge were significant. Smart mobile devices are evolving and adjusting its' technology into consumers' needs and additional convenience functions. Therefore consumers' usage experiences of smart mobile devices have positive influence and impact. Consumers' s-commerce site usage experience are positively influenced by consumer satisfaction and their intention to share knowledge. This can be explained by rise of online community and increase in active users across social media platforms. This research confirms the positive relationship between consumers' s-commerce site usage experience and consumers purchase intention.

A theoretical framework was developed, and hypotheses were empirically tested using SEM. Model estimation and fit (NFI (0.912), IFI (0.932), CFI (0.939), and RMSEA (0.060)) were discussed in the data analysis section (Table 41, p.146), and all proposed hypotheses were found to be significant (Table 46, p.152). The results are valid and reliable. Additionally, the mediation analysis emphasised the importance of social media and networks.

As mentioned in chapter 6, the many newly established companies operating in online and mobile applications are changing the marketing landscape. These companies, such as Deliveroo, Uber and Handy, outperform traditional companies by offering convenience and cashless transactions. Any service a consumer seeks can be reached through a few clicks on a smart mobile device. Through mobile applications, consumers can hire professionals based on reputation or referred through social networks to resolve problems more efficiently and cost effectively. The new on-demand economy is the driving force of the future of m- and s-commerce. This study's results confirm that the use of smart mobile devices and s-commerce usagehave a positive influence on consumers' purchase intention. This influence is likely to further increase as technology development provides consumers with more convenient functions.

7.4. Research Limitations

This study has several limitations that offer opportunities for future research. First, although the sample of participants might be an accurate reflection of online shoppers who use smartphones and connect to SNS in South Korea, it is not representative of the population worldwide. South Korea now has more than one mobiledevice per mobile subscriber and 76% social network penetration (Statistics Korea, 2016; Statista, 2016b), which makes it a suitable environment for this study. However, findings from this study may not be generalised across all online shoppers because geographical and cultural differences still exist in the online environment.

Second, the data collection approach and chosen location suffered because little information was collected to describe individuals who were not willing to participate or who failed to complete the survey.

Third, this research adopted a self-administered questionnaire. Straub et al. (1995) argued that self-reported data are biased, suggesting participants that inflate their responses due to social desirability (Straub and Burton-Jones, 2007).

Fourth, the sample participants were screened to ensure that they were active users of smartphone and social network services; however, individuals who have stopped using social networks or who are no longer active users may have different experiences and perceptions regarding the research variables. In 2015, popular Instagram star Essena O'Neill decided to quit social media despite the high earnings and fame she gained from itbecause it is addictive andprovides an unrealistic life view, and manipulated scenes were damaging her offline life (Hunt, 2015). Many individual users have qui social media, and this study is inapplicable to those people.

Finally, although salient factors were integrated and embedded into the proposed framework, extending the model by integrating other factors or other theories may provide a better and more accurate understanding of how these factors independently or interactively influence consumers' intention to make purchases in an online environment.

7.5. Future Research

This research has generalised and limited the outcome to consumers' purchase intention. It can be argued that purchase intention and actual purchases can be measured differently and their outcomes differentiated. Purchase intention can be higher than actual purchases in a practical environment, and researchers should investigate the reasoning behind consumer behaviour.

The constructs and variables added to the framework by integrating other factors may increase the explanatory power of the psychological and sociological aspects considered in this research. Online consumers are still evolving, adjusting and adopting new technology, environments, and functions. Therefore, additional variables that identify factors influencing consumers' purchase intention should be examined.

This research did not account for cultural differences. Although the online environment provides coherent and universal settings, different cultural backgrounds will influence behaviour throughout all activities and transactions that consumers make. Therefore, future research can account for these differences in culture as a valuable contribution.

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Appendix

Appendix 1 Questionnaire (In Korean)

설문지 동의서

안녕하십니까?

런던 웨스트민스터 대학교 마케팅 박사과정에 재학 중인 권 경준 입니다.

귀하는 소비자의 행동성향과 온라인 소셜 네트워크에서의 지식 및 정보 공유에 관한 설문에 초대되었습니다.

이 연구의 설문은 귀하의 의지로 참여하도록 되어있습니다. 귀하의 응답은 연구목적으로만 사용하게 됩니다. 귀하의 응답은 소중하게 여겨지며 본 설문은 귀하의 개인 신상을 밝힐 수 있는 정보는 사용되지 않습니다. 본 설문지의 소요 시간은 10분미만 입니다.

귀하의 응답은 암호가 걸려있는 안전한 공간에 보관될 것입니다. 귀하는 설문 중간에 설문지의 응답을 철회할 수 있습니다. 설문지 철회를 하게 되는 경우 귀하의 응답은 소멸되며 자료로 사용되지 않게 됩니다. 하지만 설문지의 응답을 완료한 경우 철회되지 않습니다.

이 연구에 대한 궁금점과 의견이 있으시면 연구자에게 연락부탁 드립니다.
k.kwon@my.westminster.ac.uk

또는, 연구자의 지도교수님들께 연락부탁 드립니다.

Dr. Norman Peng   N.Peng@westminster.ac.uk
Dr. Donna Mai   D.L.Mai@westminster.ac.uk

설문지의 동의서를 읽고 동의하시면 아래의 박스에 표기하여 주십시오.

예 ☐

귀하게서는 스마트 기기를 소유 하고 계십니까? (스마트폰 / 태블릿)?

예　　☐　(계속 응답해주시기 바랍니다)　아니오　☐　(설문에 응해주셔서 감사합니다)

귀하게서는 현재 소셜 네트워크를 사용하고 계십니까?

예　　☐　　(계속 응답해주시기 바랍니다)　아니오　☐　(설문에 응해주셔서 감사합니다)

귀하게서는 어떤 소셜 네트워크의 계정을 사용하고 계십니까?

페이스북 ☐　링크드인 ☐　트위터 ☐　카카오스토리 ☐　마이스페이스 ☐　기타 ☐

기타의 경우 자세히 기재하여 주십시오_____

각 항목에 대하여 가장 적합하다고 생각하시는 점수에 체크하여 주시기 바랍니다		전혀 그렇지 않다	그렇지 않다	보통이다	그렇다	매우 그렇다
1	모바일 기기들은 나에게 시간과 장소에 구애 받지 않고 정보를 주고받으며, 일을 처리할 수 있는 기능을 제공한다	☐	☐	☐	☐	☐
2	모바일 기기는 나에게 적합한 정보를 받을 수 있도록 개인화 설정이 가능하다	☐	☐	☐	☐	☐
3	모바일 커머스는 내가 직접 입력한 나의 기본정보 및 지역과 관심분야에 대하여 정보를 제공한다	☐	☐	☐	☐	☐
4	모바일 기기는 추가기능을 통해서 접근이 어려운 소비자 기반의 플랫폼에서 손쉽게 영역을 넓힐 기회를 제공한다	☐	☐	☐	☐	☐
5	내가 무선 연결을 통해서 인터넷을 사용하는 것이 소셜 네트워크 연동에 도움이 된다고 생각한다	☐	☐	☐	☐	☐
6	내가 무선 연결을 사용하면 소셜 네트워크를 더 효과적으로 사용할 수 있다고 생각한다	☐	☐	☐	☐	☐
7	나는 무선 연결이 소셜 네트워크 사용에 도움이 된다고 생각한다	☐	☐	☐	☐	☐
8	나는 소셜 커머스의 쇼핑 경험이 매우 만족스럽다	☐	☐	☐	☐	☐
9	나는 소셜 커머스의 쇼핑 경험이 유쾌하다	☐	☐	☐	☐	☐
10	나는 소셜 커머스의 쇼핑 경험이 흡족하다	☐	☐	☐	☐	☐
11	나는 소셜 커머스의 쇼핑 경험의 모든 면이 매우 즐겁다	☐	☐	☐	☐	☐
12	나는 소셜 커머스를 사용할 때 안전하다고 느낀다	☐	☐	☐	☐	☐
13	온라인상의 판매자 들은 주로 나의 만족도를 높이기 위해 노력한다	☐	☐	☐	☐	☐
14	소셜 네트워크를 통한 소셜 쇼핑의 정보는 나에게 신뢰를 준다	☐	☐	☐	☐	☐
15	나는 온라인 소셜 커뮤니티를 신뢰한다	☐	☐	☐	☐	☐
16	온라인 소셜 네트워크의 커뮤니티는 나에게 신뢰적인 인상을 준다	☐	☐	☐	☐	☐

	각 항목에 대하여 가장 적합하다고 생각하시는 점수에 체크하여 주시기 바랍니다	전혀 그렇지 않다	그렇지 않다	보통이다	그렇다	매우 그렇다
17	소셜 네트워크에 나의 정보를 공유하는 것은 나의 이미지를 향상시킨다	☐	☐	☐	☐	☐
18	우리의 인생에서 소셜 네트워크를 통해서 정보를 공유하는 사람들이 공유하지 않는 사람들보다 더 활발하고 매력적이다	☐	☐	☐	☐	☐
19	소셜 네트워크에 정보를 공유하면 다른 이들에게 나의 존재감을 향상시킨다	☐	☐	☐	☐	☐
20	나는 소셜 네트워트에 나의 정보를 공유하고 다른 이들의 관심과 존중을 얻었다	☐	☐	☐	☐	☐
21	내가 소셜 커머스의 정보를 공유한다면, 내가 정보가 필요할 때 다른 사람들로 부 터 공유 받을 수 있다고 생각한다	☐	☐	☐	☐	☐
22	내가 소셜 커머스의 정보를 공유한다면, 내가 정보가 필요할 때 사람들이 답변을 줄 거라고 생각한다	☐	☐	☐	☐	☐
23	내가 소셜 커머스의 정보를 공유한다면, 후에 나의 질문에 대한 답변을 쉽게 받을 수 있을 거라 생각한다	☐	☐	☐	☐	☐
24	나는 내가 소셜 커머스에 대한 정보 공유에 참여하는 것이 나에게 유리하게 적용될 거라 생각한다	☐	☐	☐	☐	☐
25	나는 소셜 커머스의 정보 공유에 참여하면 보답으로 돌려받는 이익이 늘어날 것이라 생각한다	☐	☐	☐	☐	☐
26	나는 특정한 지식이나 기술이 있으면 공유하는 것을 좋아한다	☐	☐	☐	☐	☐
27	나는 나 스스로에 대하여 자유롭게 표현하는 것을 좋아한다	☐	☐	☐	☐	☐
28	나는 정보를 제공하는 것을 좋아한다	☐	☐	☐	☐	☐
29	나는 남에게 도움이 될 만한 정보를 공유하는 것을 좋아한다	☐	☐	☐	☐	☐
30	나는 남에게 나의 관심사에 대한 정보를 공유하는 것을 좋아한다	☐	☐	☐	☐	☐
31	나는 남을 즐겁게 해줄 수 있는 정보를 공유하는 것을 좋아한다	☐	☐	☐	☐	☐
32	나는 내가 찾은 정보에 대한 피드백을 받는 것을 좋아한다	☐	☐	☐	☐	☐
33	나는 뉴스를 공유하는 것을 좋아한다	☐	☐	☐	☐	☐
34	나는 찾기 어려운 정보를 공유하는 것을 좋아한다	☐	☐	☐	☐	☐
35	나는 온라인 커뮤니티 멤버들과 정보 공유를 하도록 노력한다	☐	☐	☐	☐	☐
36	나는 온라인 커뮤니티 멤버들과 정보 공유를 계획 중이다	☐	☐	☐	☐	☐
37	나는 내가 뉴스, 잡지, 저널 및 다른 곳에서 접한 정보를 온라인 커뮤니티 멤버들과 솔직하게 공유한다	☐	☐	☐	☐	☐
38	온라인 검색은 내가 찾고자 하는 정보 검색능력을 향상 시킨다	☐	☐	☐	☐	☐
39	온라인 정보 검색은 매우 편리하다	☐	☐	☐	☐	☐

	각 항목에 대하여 가장 적합하다고 생각하시는 점수에 체크하여 주시기 바랍니다	전혀 그렇지 않다	그렇지 않다	보통이다	그렇다	매우 그렇다
40	온라인 검색은 질문에 대한 대답을 매우 빠르게 제공한다	□	□	□	□	□
41	나는 소셜 네트워크를 통한 제품 정보는 정확하다고 느낀다	□	□	□	□	□
42	나는 소셜 네트워크를 통한 제품 정보는 확신을 준다고 느낀다	□	□	□	□	□
43	나는 소셜 네트워크를 통한 제품 정보는 설득력 있다고 느낀다	□	□	□	□	□
44	나는 소셜 네트워크를 통한 제품 정보는 효과적이라고 느낀다	□	□	□	□	□
45	나는 다른 사람으로부터 특정 소셜 커머스 사이트가 아주 유용하다는 소식을 들었다	□	□	□	□	□
46	나는 다른 사람으로부터 특정 소셜 커머스 사이트가 사용하기 쉽다는 소식을 들었다	□	□	□	□	□
47	나는 다른 사람으로부터 특정 소셜 커머스 사이트가 믿을만한 사이트라는 소식을 들었다	□	□	□	□	□
48	나는 이 소셜 커머스 사이트에서 판매하는 제품 또는 서비스를 구매할 것 같다	□	□	□	□	□
49	나에게 기회가 주어진다면 이 소셜 커머스 사이트에서 판매하는 제품을 구매할 의사가 있다	□	□	□	□	□
50	아마도 가까운 미래에 나는 이 소셜 커머스 사이트에서 제품을 구매할 것이다	□	□	□	□	□
51	기회가 주어졌을 때, 나는 이 소셜 커머스 사이트에서 구매 하려고 한다	□	□	□	□	□
52	나는 온라인 소셜 커머스 쇼핑을 친구들에게 추천할 것이다	□	□	□	□	□

귀하의 성별은?
남자 □   여자 □

귀하의 연령은?
18세 미만 □   19 – 25 □   26 – 35 □   36 – 45 □   46 – 55 □   56세 이상 □

귀하의 직업은?
학생 □ 직장인 □   자영업 □   의사 □   서비스 관련업 □   아르바이트 □   기타 □

설문에 응하여 주셔서 감사합니다.
Thank you for completing the questionnaire.