The Effects of Shopping Site Quality and Customer Trust on Online Purchase Intention

Khalid Hussain M. Alhamzi

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DEDICATION

I dedicate this thesis to my family for their love and support.

ABSTRACT

This thesis contributes to the understanding of the role of web quality factors in the context of online customers' trust in vendor and purchase intention. The thesis provides a new theoretical perspective to the constructs and relationships that exist between three quality factors and customer trust, by using a conceptual framework based on the integration of two seminal theories from the fields of information systems success and communication persuasiveness: the information systems success model (ISSM) and source credibility theory (SCT). This new conceptual model relates information quality, system quality and service quality with trust in vendor, which in turn is linked to online purchase intention. The model is empirically tested using data from 644 participants from the United Kingdom and has used structural equation modelling to confirm the model fit.

This research has also considered the use of review techniques such as meta-analysis and weight analysis to observe the popular and most significant antecedents of trust and online purchase intention. For this evaluation, 115 papers have been analyzed from different streams of management of information systems (MIS) literature, as well as marketing research mainly from an online shopping context. The reason for employing such techniques is to support the construct choices made by the present study with the accumulated empirical knowledge derived from the existing literature.

The findings confirmed that information quality, system quality and service quality play important roles in improving high levels of trust in a shopping site. Results suggest that shopping sites could show their credibility through the three quality factors and thereby improve customer trust. This represents a signalling of institution-based trust that improves customer cognitive trust in order to develop successful long-term B2C relationships. The research has also provided some interesting insights regarding a moderating variable on the relationship between customer trust and online purchase intention: customer web skills.

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LIST OF ABBREVIATIONS

ABS	Association of Business Schools
AGFI	Adjusted Goodness-of-Fit Index
AMOS	Analysis of Moment Structures
AVE	Average Variance Extracted
B2C	Business to Customer
CB-SEM	Covariance-based Structural Equation Modelling
CFA	Confirmatory Factor Analysis
CMV	Common Method Variance
CR	Composite/Construct Reliability
DF	Degrees of Freedom
DW	Durbin-Watson
EFA	Exploratory Factor Analysis
e-WOM	Electronic Word of Mouth
GFI	Goodness-of-Fit Index
H	Hypothesis
IDT	Innovation Diffusion Theory
IMP	Internalized Moral Perspective (Marker Variable)
IQ	Information Quality
IS	Information Systems
ISSM	Information Systems Success Model
MIS	Management Information System
NFI	Normed Fit Index
NNFI	Non-Normed Fit Index
O2O	Offline to Online
OPI	Online Purchase Intentions
PEOU	Perceived Ease of Use
PU	Perceived Usefulness

RMSEA	Root Mean Square Error of Approximation
SCT	Source Credibility Theory
SEM	Structural Equation Modelling
Sig.	Significant
SPSS	Statistical Package for the Social Sciences
SQ	Service Quality
SyQ	System Quality
TAM	Technology Acceptance Model
TCE	Transaction Cost Economics
TPB	Theory of Planned Behaviour
TRA	Theory of Reasoned Action
TV	Trust in Vendor
UK	United Kingdom
UTAUT	Unified Theory of Acceptance and Use of Technology
VIF	Variance Inflation Factor
WebQual	Web Quality
WS	Web Skills
χ^2	Chi-Square

DECLARATIONS

HONOURS AND AWARDS

A Postgraduate Research Skills Award, Development and Training Services, Swansea University, United Kingdom. 2012.

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COLLOQUIUMS

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CHAPTER 1: INTRODUCTION

1.1. Introduction

Internet-based information systems play an important role in human life today. The evolution of the World Wide Web has opened numerous opportunities for the fields of information technology and its applications relating to social and organizational communications (Butler, 2003; Chang, Zhang and Gwizdka, 2021). In the midst of technology development, today's information systems are playing a vital role in serving humanity for various purposes. Stolterman and Fors (2004, p. 689) describe how this entrenchment of information technologies has led to "*a world that is increasingly experienced with, through, and by information technology*". These perspectives explain the role of such technologies in the process of enrichment of lifestyle, particularly in the fields of social, business, and organizational communications. Over time, the Internet has seen the automation of manual information and communication systems to match the needs and ever-growing demands of online users. Internet-based information systems have gradually entered the fields of social communication, as for example with social media, governance, online business and other Internet-based commerce applications. For these reasons, the management of information systems, which is usually referred to as MIS, has received great attention from research scholars working in different contexts, as such systems are in a continuous process of evolution and there is huge potential to contribute to the existing knowledge in this area of e-commerce (Banker and Kauffman, 2004; Jeyaraj and Zadeh, 2020).

This thesis is concerned with the online context where information systems are being used in the form of online shopping sites and applications to provide services to online customers. The core of any such online shopping system is the management of the system for effective usage through superior means of communication and the delivery of lifetime value to the target customers. Delivering value to these customers through the integration of Internet-based communications and the provision of service for successful long-term online B2C relationships represents a critical challenge for any online business. This is because online customers exhibit high levels of risk perception as the business takes place over a 'non-real' environment. Matching the ever-growing needs of today's online customers, as well as satisfying customers while maintaining their trust, is challenging for online shopping providers.

Online shopping is considered as a sub-set of e-commerce, where customers approach shopping sites to achieve different shopping objectives. E-commerce has been broadly defined as the means of conducting business transactions over the Internet (Zhu, 2004). Therefore, e-commerce includes all kinds of monetary or non-monetary transactions which relate to real products or services, whereas online shopping specifically refers to the sale of physical products. Online shopping is a fascinating context for study, due to its unique nature in terms of its characteristics compared to other types of e-commerce information systems.

As defined by Li *et al.* (2017, p. 3), online shopping is "*a process of buying products through the Internet and it involves online buyers that access online sellers' websites to search, select, purchase, use, and dispose of goods and services to satisfy their needs and wants*". Thus, unlike other types of e-commerce systems, or any other type of information systems, online shopping systems are not only used for informational purposes but also for transactions to make purchases over the Internet (Loiacono, Watson and Goodhue, 2007; Kalia and Paul, 2021). These characteristics of online shopping are the reason why online customers' risk perceptions are usually high compared to other types of information systems (Forsythe and Shi, 2003; Yüksel and Yüksel, 2007). This heightened response is because online shopping systems involve monetary transactions to buy real products, as well as the fact there is a certain level of psychological investment, related to the perceptions that are associated in general with ISs (Grabner-Kraeuter, 2002; Dukes and Liu, 2016). Consequently, to achieve a greater competitive advantage, shopping sites must develop superior plans and strategies to meet the ever-growing needs of online customers as effectively as possible, while conveying their trustworthiness to their customers to encourage them to shop. For these reasons, shopping sites often work with third-party sources to develop their trustworthiness. It has become a common practice in the online shopping eco-system for shopping sites to rely on different types of trust signalling sources online and sometimes offline. In addition, the website quality of a shopping site could explain an online vendor's trustworthiness and enable the customers to make their decisions based on their first-hand cognitive perceptual knowledge.

The existing MIS success literature from the online shopping context has not paid much attention to explaining how quality maintained shopping sites could show their trustworthiness to customers, by improving customers' perceptions of institution-based trust through providing situation normality. Situation normality has been defined by

McKnight *et al.,* (2011, p. 7) as "the belief that success with the specific technology is likely because one feels comfortable when one uses the general type of technology of which a specific technology may be an instance as the users perceive that situation is normal, favorable, or well-ordered". Thus, to address this gap, this research will examine the effects of three quality factors – namely information quality, system quality, and service quality – on customer perceptions of trustworthiness and then extend those effects on to customer purchase intention. This research objective is achieved using an integrated theoretical background derived from two distinct theoretical understandings, each representing two prominent areas of research from within the online shopping literature. The two theories are the Information Systems Success Model (ISSM) from the field of management of information systems (MIS) research, and Source Credibility Theory (SCT) from communication marketing.

Thus, the current study attempts to explain how shopping sites could win customer trust through website quality management by signalling their trustworthiness to the customers, as it is possible that shopping sites could show situation normality to improve levels of customer confidence. This can generate a particular type of trust understanding known as institution-based trust. By attempting to explain this relationship, the present study is aiming to explore the role of shopping site quality in order to reduce customer overdependence on trusted third-party sources. To achieve this goal, this research will combine the two theories of ISSM and SCT. The ISSM captures the significance of shopping site quality, while the SCT provides an understanding of trustworthiness in a communication relationship. On the one hand, this theoretical integration could explain the success of an IS in terms of winning customer trust, as well as the success of customers as they are able to identify the right shopping sites. On the other hand, such an integrated understanding supports the concept of experienced source credibility, as explained by Tseng and Fogg (1999), Lowry, Wilson and Haig (2014), and Ayeh (2015), which could allow customers to learn the trustworthiness of a shopping site on their own. A high quality built and maintained site could nurture customer trust without customers being too dependent on any third-party trust signalling sources, as such quality sites could demonstrate their own trustworthiness and allow customers to make their own informed decisions using their first-hand experiential knowledge. At the same time, it has been demonstrated that customers who build trust based on their own experience maintain long-term relationships with shopping sites (Tan, Wang and Tan, 2019).

According to the ISSM theorization, relating three quality factors – information quality, system quality, and service quality – with online customer trust could be useful in explaining a shopping site's success (DeLone and McLean, 1992, 2003). Whereas, SCT (Hovland, Janis and Kelley, 1953) is an effective theory that could explain interpersonal communication psychology in a communication relationship between a message source and receiver. Based on a theorization adapted from SCT, the current study considers that when a shopping site (as an information source) presents itself as credible (Chen *et al.*, 2016; Mpinganjira, 2018), then the customer (as a receiver who uses the shopping site for a shopping purpose) would be convinced to trust the site and have a business relationship with the site. Website quality plays a vital role in such a communication relationship between shopping sites and customers, as it refers to the channel through which the communication between a shopping site and the customer takes place (Setia, Venkatesh and Joglekar, 2013; Xu, Benbasat and Cenfetelli, 2013). Thus, the current study, by integrating the two theories, examines and explains the effects of website quality on the trustworthiness perceived by a customer while also giving a new theoretical understanding to explain the success of shopping sites, as measured in terms of customers' perceptions of trustworthiness.

To summarize, the current research will explain the effects of three quality factors on customer perceived trustworthiness based on the understanding adapted from two distinct theories. Firstly, based on ISSM, the effects of the three quality factors on perceived trustworthiness and customer purchase intention are seen as determining the success of a shopping site. Whereas, based on the experienced source credibility approach, in the context of online shopping, customers' trust development takes place through the interaction between the site and customer; the trustworthiness of the site is determined through customers' perceptions of the site's information quality, system quality, and service quality (Petter, DeLone and McLean, 2013; Lowry, Wilson and Haig, 2014; J. V. Chen *et al.*, 2015; Wang, Wang and Liu, 2016; Tan, Wang and Tan, 2019).

There are not any research studies from the online shopping context that have attempted to integrate ISSM with SCT to explain the effects of these three quality factors on online customer trust. The ISSM has been adopted in MIS research mainly to explain the success of information systems from different IS contexts, where the informational and interactional satisfaction of users was explained through the quality factors in addition to the users' use intentions (Gorla, Somers and Wong, 2010; Rahimnia and

Hassanzadeh, 2013). In the context of online shopping, there are research studies (e.g., Hsu *et al.*, 2014; J. V. Chen *et al.*, 2015; Wang, Wang and Liu, 2016) that have adopted the ISSM theorization to explain the success of shopping sites. However, the theorization of ISSM has been largely restricted to explaining customer satisfaction, use intentions, and loyalty intentions in the online shopping context. No research from the online shopping literature has explained how the quality factors promote the feeling of experienced credibility and build customer perceptions of trust.

From a general review of the literature from the online shopping context, it was found that customer trust is an essential construct that could largely influence customer behavioural intentions (Agag and El-Masry, 2017; Pengnate and Sarathy, 2017; Hansen, Saridakis and Benson, 2018). Furthermore, customer beliefs or perceptions of the quality dimensions play an important role in determining customer trust and attitude, as well as behavioural intention (Xu, Benbasat and Cenfetelli, 2013; Kim and Peterson, 2017; McKnight *et al.*, 2017). It is very possible from an understanding of behavioural theories such as TRA (theory of reasoned action) or TPB (theory of planned behaviour) that the three quality factors could act as attitudinal or behavioural beliefs to improve trust to result in positive purchase intention. This is possible because the trust, which could be considered as an attitude towards a shopping site, could influence purchase and shopping behaviour as a result of the three quality antecedents mentioned previously. When such relationships are studied under the combined theorization of ISSM and SCT, the three quality factors could act as credibility and trustworthiness signals. In this capacity, the three quality factors can build customers' trust through the provision of first-hand cognitive experiential knowledge and the reduction of cognition-based and experienced-based risk perceptions, as explained by Tan, Wang and Tan (2019).

In simple terms, this study considers the shopping site as an information source (Chen *et al.*, 2016; Mpinganjira, 2018), and the customer as a receiver who uses the shopping site for different shopping purposes. Thus, quality could play a vital role in such a communication and business relationship between shopping sites and customers as it influences the process through which the online shopping takes place (Setia, Venkatesh and Joglekar, 2013; Xu, Benbasat and Cenfetelli, 2013). Thus, this study combines ISSM and SCT theories, to explain how online shopping sites could encourage customers to build trust and purchase intentions based on the first-hand cognitive experiential knowledge they gain through the three quality factors.

1.2. The Study Context

Online shopping offers a useful alternative to traditional shopping as it can provide an easy and effortless means of shopping and also reduce the monetary and non-monetary costs incurred by vendors and customers; thus it has captured the attention of both practitioners and academics (Häubl and Trifts, 2000; Ganesh *et al.*, 2010; Zha *et al.*, 2018; Chiu *et al.*, 2019). As customers could save time and attend other important day-to-day activities, their inclination for convenience has mounted and their attention has been generally diverted to online or virtual shopping as an alternative medium of shopping (Swinyard and Smith, 2003; Kim and Park, 2012; Ameen *et al.*, 2021). Moreover, online shopping provides customers with good customer service because it provides more choices and opportunities with minimal effort and greater ease of access (Wolfinbarger and Gilly, 2001; Bell, Gallino and Moreno, 2018; Ameen *et al.*, 2021). By allowing the direct interaction between online vendor and customer, e-shopping sites reduce the product distribution chain, therefore creating benefits for business sites as well as online customers.

The current study has focused on online shopping, which is a type of e-commerce used by a considerable number of people around the world. This study is conducted in the United Kingdom (UK), a developed country which is rich in terms of online shopping infrastructure and usage. In the year 2020, the UK recorded 62.07 million Internet users, which represents 95.53% of the country's population (Statista, 2020a, 2020b). As per the information provided by the Office for National Statistics (2019), in the UK in 2018, B2C e-commerce sales involving websites were valued at approximately £199.7 billion and this trend is constantly growing. These statistics indicate the vigorous levels of online shopping taking place in the country and it is indeed a mature market in terms of online shopping activities. Thus, results obtained from such a sample could be very useful in the contexts of developed, developing and underdeveloped markets.

In terms of the user context, online shopping has provided an easy and useful means of conducting business over the Internet. However, in addition to the opportunities, it has also created confusion amongst customers due to the practices adopted by shopping sites (Zhang *et al.*, 2014; Chaparro-Peláez, Agudo-Peregrina and Pascual-Miguel, 2016), particularly in terms of the dependence on third-party trust signalling sources on the Internet (Luo *et al.*, 2013). This dependence has arisen due to the intense competition between the shopping sites as a result of the large number of online businesses that are entering the market, as well as the existing offline businesses that

have turned to the online platform. Practices such as paid promotions, third-party review forums, and electronic word of mouth (e-WOM) on social media sites are playing a role in customer decision making and behaviour. This has reduced the efforts of online customers in terms of decision making, but it has created confusion as well as causing some negative impacts.

In relation to the product context of this study, the furniture industry is one of the most developed and mature online shopping markets in the UK with a decent online shopping infrastructure with highly experienced online customers. In the year 2019, UK citizens spent about £17 billion on furniture products, which includes both online and offline sales (Office for National Statistics, 2020a). Besides, in the year 2020, online furniture sales were ranked among the top selling items in the UK market, alongside online clothing, food, electronics, appliances and books (Statista, 2020c). Nevertheless, these statistics and the existing literature suggest some reluctance from online shoppers to buy furniture products online due to product quality and after-sale service concerns (Li, Zhang and Zhao, 2016). Furthermore, while online furniture is one of the top-rated product categories for online shopping based on information provided by Statista (2020d), yet there is limited research that uses this product type to examine online customer behaviour, apart from a very few studies (e.g., Li, Zhang and Zhao, 2016). In fact, customers tend to rely on third-party credibility and trustworthiness signalling sources when they purchase products such as furniture (Xu, Benbasat and Cenfetelli, 2020). However, the quality assurance given by the shopping sites could also have an impact on the trust perceptions of customers who plan to buy such products, in addition to explaining site trustworthiness depending on third-party sources. Nevertheless, Dinner, Van Heerde and Neslin (2014) and Weathers, Swain and Grover (2015) have explained that, for a product like furniture goods, the search characteristics and experience characteristics could cause a conflict when a furniture business or its customers depend on a third-party credibility trust signalling source. For such product types, the understanding of trustworthiness of a shopping site needs to come from first-hand experiential knowledge. Thus, to clarify this, research must explain the development of customer trust and purchase intention as a result of customer understanding of the trustworthiness of the website through the quality of the furniture shopping site.

In conclusion, this thesis is concerned with online shopping, which is a kind of information system and a type of e-commerce technology used by online customers to

purchase various products over the Internet using websites or web applications. In other words, this research is an attempt to explain online customers' trust-related beliefs, attitudes, and behaviours based on the shopping site quality. Thus, the present study will improve the understanding of the success theorization given by ISSM to represent the success of both parties involved in the B2C relationship to thoroughly explain the net benefit dimension of the ISSM with a theoretical integration adapted from source credibility theory.

1.3. Research Gaps

This research has identified some gaps regarding the effects of the three quality factors on customers' perceptions of trustworthiness of a shopping website. Firstly, no research study from an online shopping context has explained the role of shopping site quality in promoting situation normality, which represents institution-based trust, in order to improve customer perceived trustworthiness and purchase intention.

Most studies that have examined the effects of quality factors on customer trust have adopted behavioural theories (i.e., TRA, TPB, cognitive learning theories, value related theories and behaviour derivative models like TAM) and considered the quality perceptions as cognitive attitudinal and behaviour control beliefs. For instance, Vance, Elie-Dit-Cosaque and Straub (2008) have combined the quality dimensions with customers' perceptions of ease of use. Similarly, Chen and Dibb (2010) have combined two quality dimensions, information quality and website usability (system quality), with customer perceptions of privacy and security to explain online customer trust and customers' attitudes towards a shopping website. In the same vein, Filieri, Alguezaui and McLeay (2015) and Agag and El-Masry (2017), based on the framework suggested by Beldad, De Jong and Steehouder (2010), have considered the effects of customer organization based constructs (i.e., customer experience, customer propensity to trust, the reputation of a website, size of the organization, and ease of use) along with website quality to explain customer trust. For instance, Petter, DeLone and McLean (2013) have recommended that trust could be a key dimension of success which could act as a dependent factor to the quality constructs. Yet, no empirical study has been undertaken in the online shopping literature that could explain the effects of site quality to improve customer perceptions of trustworthiness.

In relation to the theoretical application of ISSM, which provides one of the background theories of this research, the majority of the research studies that have adopted or

extended the success understanding from ISSM in the context of online shopping have empirically examined the original model and construct relationships (Hsu *et al.*, 2014; J. V. Chen *et al.*, 2015). Research studies have also considered the background conceptualization of ISSM to explain the relationship between quality factors and customer trust (e.g., Wang, 2008; Rahimnia and Hassanzadeh, 2013; Fang *et al.*, 2014; Hsu *et al.*, 2014; Wang, Wang and Liu, 2016). Yet these studies have not explained how shopping sites could improve customer perceptions of trustworthiness based on customer first-hand cognitive assessment of the site quality. However, certain studies (e.g., Filieri, Alguezaui and McLeay, 2015; Agag and El-Masry, 2017; McKnight *et al.*, 2017; Filieri *et al.*, 2018) have empirically tested the effects of quality dimensions on customer trust, but they have not explained the development of customers' trustworthiness perceptions in relation to the site quality, where quality could ideally act to complement the credibility of a shopping site as it has been potentially learned through third-party sources. These research studies have also not explained how the quality factors could improve customer perceptions of trustworthiness towards a shopping site by conveying situation normality.

Therefore, although the IS success theorizations provided by Petter, DeLone and McLean (2012, 2013) have suggested the importance of customer trust as a key success determinant dimension, empirical studies have not explained customer trust using ISSM, which could be a useful approach. In the online shopping context, there are several means of explaining the trustworthiness of a shopping site which results from the reputed credibility signalled by third-party sources. But the success of a shopping site has not been explained using customer trust as a determinant that could develop from customer first-hand experiential knowledge. Also, from the viewpoint of information system failure, based on the rules suggested by Kim and Kishore (2019), this study considers that success should not always be determined from the perspective of an IS developer; it also needs to be understood from the perspective of the user or consumer for a successful long-term relationship to be established between the two parties.

Research studies (e.g., Rahimnia and Hassanzadeh, 2013; Hsu *et al.*, 2014; Tam and Oliveira, 2016) have empirically validated the ISSM in the online shopping context to determine the success of online shopping websites. Compared to the other fields of MIS research, the use of ISSM as a background theory is limited in the online shopping literature. Furthermore, there are not many research studies that have adapted or

extended the conceptualization of ISSM with essential constructs that are very influential in the online shopping context, such as customer trust, with the support of additional background theorizations. As such, the knowledge of the effects of quality factors on online customer trust and purchase intention within the context of shopping websites surely needs to be improved.

Source credibility theory, on the other hand, has been largely associated in the online shopping literature with certain types of credibility such as reputed credibility and surface credibility (Tseng and Fogg, 1999; Kim, Shin and Lee, 2009; Robins, Holmes and Stansbury, 2010). Tseng and Fogg (1999) and Lowry *et al.* (2014) explain the reputed credibility of a web entity as the perception of a customer regarding the trust and expertise which results from a third-party source online. In general, this third party could be any source external to the shopping site. Whereas, Wathen and Burkell (2002) suggest that surface credibility can be understood as the case when users make judgements over the simple inspection of surface characteristics such as look and appeal. Further, Lowry, Wilson and Haig (2014), who have observed trust development in the initial interaction phase, have given a deeper understanding by suggesting that the surface credibility that is potentially signalled by a web system logo and design could explain trust, but their analysis was not useful for explaining the distrusting beliefs of online customers.

A review of online customer behaviour literature (Flanagin and Metzger, 2013; Sparks, Perkins and Buckley, 2013; Filieri *et al.,* 2018; Luo, Luo and Bose, 2018) reveals that the trustworthiness of a shopping website could be signalled through various external factors such as e-WOM and the perceived reputation of the web vendor that a customer can learn from third-party sources available online. Such credibility is significant when attracting new customers and motivating existing ones (Sparks, Perkins and Buckley, 2013; Luo, Luo and Bose, 2018). Visentin, Pizzi and Pichierri (2019) explain the impacts of offline and online mass media resources and explore how their propaganda techniques can convey the trustworthiness of online shopping websites today. Also, the existing research from the online shopping context explains that, to signal the credibility or trustworthiness of a shopping site, both offline and online sources of advertising are essential (Flanagin and Metzger, 2013; Sparks, Perkins and Buckley, 2013; Filieri *et al.*, 2018; Luo, Luo and Bose, 2018). In contrast, Wathen and Burkell (2002) recommend that experienced credibility is more reliable for making judgements as this is purely based on users' first-hand cognitive knowledge arising from customers' first-hand

experience with a shopping site. The current study has focused on explaining the development of customer trust from experienced credibility acquired through the three quality factors.

Unfortunately, there is no research study from the online shopping context that explains customers' perceptions of trustworthiness of a shopping site purely based on site quality, which represents the first-hand experiential knowledge of customers. However, the trustworthiness could be learned through the reputation and brand image of a shopping site based on first-hand observation and third-party sources generally (Flanagin and Metzger, 2013; Sparks, Perkins and Buckley, 2013; Filieri *et al.*, 2018; Luo, Luo and Bose, 2018); such credibility could bring traffic to the site, but it may not improve customer trust in the long term. Whereas, the trust built from the first-hand experiential cognitive knowledge of customers using the site and discerning the website quality could last a longer time (McKnight *et al.*, 2017; Kong *et al.*, 2020). The current research will therefore examine the experienced credibility which could be signalled through three quality factors to improve online customers' trust (Petter, DeLone and McLean, 2008, 2012, 2013).

Finally, current research indicates that trust in vendor is often associated with higher purchase intention (King *et al.*, 2016; Oliveira *et al.*, 2017; Tsai and Hung, 2019), but attention has not been paid to the conditions under which such potential could yield the desired results. Specifically, customers' web skills can be an important boundary condition to the link between consumers' trust and purchase intentions. A customer who possesses a set of essential skills for a successful online interaction and transaction tends to be more precise in judging the trustworthiness of shopping websites, and this bundle of skills could also influence his or her shopping satisfaction (Ding *et al.*, 2010; Rose *et al.*, 2012). The existing literature has not explained the differential effects of perceived trustworthiness on purchase intention among customers with different levels of web skills. To address this gap, the current study will incorporate customer web skills as a moderating factor for the relationship between perceived trustworthiness and purchase intention.

1.4. Research Questions

The research questions demonstrate the overall approach formulated by this study by identifying specific queries to address the research problem and the research gaps observed in the literature. The research questions of this study are as follows:

"How does the shopping site quality influence customer behaviour, and what role could quality factors play to explain a shopping site's trustworthiness and improve customer purchase intention?"

"What role does shopping site quality play to provide situation normality to explain customer perceptions of trustworthiness?"

"What role do the quality factors and customer trust play in explaining the success of a shopping site by improving customer purchase intention?"

"How do customers with different web skills improve their purchase intention as a result of their perceptions of trustworthiness of an online vendor?"

1.5. Research Aim and Objectives

The primary aim of this thesis is to empirically validate the effects of quality factors on customer trust using the combined theorization developed from ISSM and SCT. For this objective, the study will use the three quality factors from ISSM – information quality, system quality, and service quality – as antecedents to signal the credibility and trustworthiness of a shopping site to build customer trust and purchase intention. The aim of this research is:

"*To study the role of three quality factors, i.e., information quality, system quality and service quality, in improving customer trust perceptions by suggesting the credibility of a shopping site under the combined theorization of the information systems success model (ISSM) and source credibility theory (SCT)*".

To achieve this aim, the current study has adopted a set of objectives that can make best use of the existing literature and help the researcher to follow a prescribed approach to deliver value to the literature and practice. The five research objectives that are presented below will allow the reader to understand the basic outline of the thesis. These objectives will help the researcher address the problem identified in this study to achieve the aim of this research.

- To analyze the role of shopping sites' quality in improving customers' perceptions of trustworthiness.

- To explain the development of customer perceptions of site trustworthiness and purchase intention through the shopping site quality.

- To conceptualize a model that could allow the examination of three quality factors on customers' trust and purchase intention, through a theoretical extension of the concept of shopping site success with credibility theory.

- To explain the role of customer web skills and shopping experience in building customers' purchase intention based on their perceptions of website trustworthiness.

- To provide recommendations to enhance theory and practice based on the results obtained from this study.

1.6. Contributions of the Research

While addressing some important gaps in the existing literature, this thesis provides contributions to the theory and practice. The current study could provide contributions to shopping site developers, customers and online customer behaviour literature.

This study investigates how shopping sites could show their trustworthiness by maintaining high quality sites and could therefore explain the role of website quality factors on customer trust and purchase intention development. Specifically, the research aims to explain the role of shopping site quality on promoting situation normality to improve customer perceptions of trustworthiness and thus to form customer trust and purchase intention.

There are no attempts found in the existing literature that empirically explain the effects of site quality dimensions on customer trust, through the combined understanding of system success and system credibility. Therefore, a major contribution of the current study is related to the use of the theoretical combination of ISSM and SCT. By combining these two theorizations, the current study aims to demonstrate how a shopping site's success can be explained by the customer trust and purchase intention developed as a result of the quality of that site. This approach extends the success understanding given by ISSM to include both customer and site success.

Further, this study, by using a new theoretical integration, intends to contribute to the IS success literature and particularly to the effects of shopping site quality by considering customer trust as a key determinant dimension when understood through the lens of

SCT. The findings of this study could also suggest solutions to shopping site developers concerning their dependence on third-party sources to improve customer trust Indeed, the results of this study could explain how the shopping site success needs to be understood through the concept of trust for successful online B2C relationships (Petter, DeLone and McLean, 2013).

The current study has shown the possibility of explaining and understanding the trustworthiness of a web vendor based on the quality of the website in terms of information, design and service. Indeed, this research could prove that the experienced credibility, in the form of trustworthiness of a shopping site, results from the first-hand cognitive understanding of a customer resulting from the three quality antecedents.

In addition, this study has undertaken a statistical review of the existing studies from different streams of MIS research and marketing studies from the online shopping context, using statistical methods known as weight analysis and meta-analysis to accumulate quantitative knowledge on the relationships between website quality and customer trust. These review techniques have provided an understanding of the general trend of relevant variables that influence consumers' trust, online purchase intention and purchase behaviour. Such analyses provide a cumulative understanding and pattern of the variables' performance in the present context.

Finally, this research study also has a strong significance for shopping websites in relation to reputation and surface credibility that could help attract potential customers. However, to maintain successful relationships, one must consider conveying trustworthiness to the customer through the site quality. The current research demonstrates this concept by explaining that the experienced credibility learned by customers themselves could reveal the trustworthiness to the customers to improve their purchase intentions. The dependence on third-party trust and reputation signalling sources could attract potential customers to visit a shopping site, but such sources may not be useful for retaining them in the long run. Whereas the experienced credibility investigated by the current study is learned by customers, based on their first-hand knowledge. The trust built from such credibility improves customer decision making and can also encourage customers to maintain long-term relationships.

Thus, the current study could suggest the importance of website quality for retaining online customers, since the results imply that customers should reduce their overdependence on third-party trust signalling sources in light of the necessity of first-

hand knowledge-based decision making. Thus, the current study theoretically explains the importance of experienced credibility for online shopping sites.

The moderation effects of customer web skills on the relationship between customer perceived trustworthiness and purchase intention have been incorporated in the study. The objective is to explain the possibilities of varying influences on customer purchase intention, particularly relating to the product type that has been considered by this research.

1.7. The Structure of the Research

To address the research objectives presented above, this thesis has been structured as follows. The six chapters outlined below explain the overall research process of the current study:

- Chapter 1- The introductory chapter of this study has provided the readers with an understanding of the research problem addressed by the current study; the context of the study with a brief outline of the online shopping context in relation to the current study; the research question, aim and objectives formulated to address the problem highlighted by the study; and the predicted contributions of this study to theory and practice.

- Chapter 2- The second chapter of this study, the literature review, gives a deeper understanding of the existing literature that is concerned with the effects of site quality on customer trust and behavioural intentions. This chapter mainly concentrates on highlighting the gaps identified in this research in relation to the effects of website quality on customer trust. From a theoretical perspective, this chapter anaylzes the success understanding as explained by ISSM and the trustworthiness of a shopping site as explained by SCT theorization in relation to the effects of website quality on customer trust.

- Chapter 3- This chapter explains the development of the conceptual model as hypothesized by the current study to explain the effects of three quality factors on customer trust under the combined theorization adapted from ISSM and SCT. The chapter provides a theoretical and logical justification for the relationships explored by the current study.

- Chapter 4- This is the methodology chapter which will explain the philosophical stance taken by the current study to address the research problem. This chapter

explains the research design, methods and techniques of data collection and analysis.

- Chapter 5- The results of the current study will be presented in this chapter. The results will be explained in a methodical and disciplined manner as directed by the data analysis methods and tools used in this study.

- Chapter 6- The final chapter will discuss the findings of the current study using the results obtained from the previous chapters. This chapter refers back to every one of the previous chapters to explain the knowledge added by the current study, and how it fills the research gap, in terms of defining shopping site success based on the relationships between three quality factors and customer trust.

The next chapter will provide a comprehensive analysis of the existing literature that discusses the nature and role of the website quality factors in influencing online customer behaviour and customer perceptions of trustworthiness of a shopping site. The research gap will be highlighted in a detailed fashion so that the reader will understand the value of this research in terms of its contribution to the existing literature and practice.

CHAPTER 2: LITERATURE REVIEW

2.1. Introduction

The current chapter aims to identify and critically review the relevant literature that is based on online customer perceptions of site quality, the effects of shopping site quality on online customers' perceptions of site trustworthiness, and customer development of purchase intention. Key to this research is the relationship between perceptions of website quality and customer beliefs of online shopping site trustworthiness, based on the understanding of a particular type of trust. The chapter begins by defining the concept of customer trust applied in this thesis in the online shopping context, to explain the unique nature of the context regarding website quality factors and their influences on customer perceived trustworthiness. Further, the individual dimensions or factors of shopping site quality, such as information quality, system quality and service quality, will be deeply discussed to identify the gaps in the literature addressed by this research. Therefore, the current chapter outlines the gaps in the literature, in terms of the lack of quantitative research and empirical knowledge regarding shopping site trustworthiness or the development of customer perceptions of trust based on the quality factors. Particularly, the existing web quality literature will be critically reviewed to propose opportunities to present new areas of knowledge development regarding the effects of the three quality factors, namely information quality, system quality, and service quality, on a specific type of trust.

The present research has been divided into three studies to provide theoretical and empirical support to the gaps presented in this literature review. The primary study represents the main relationships that exist between the three quality factors, trust, and customer purchase intention. The second study includes the moderation effects of customer web skills on the relationship between customer perceptions of shopping site trustworthiness and customer purchase intentions. In addition to these relationships, the thesis also incorporates a third study featuring two prominent statistical review methods known as meta and weight analyses. This approach is intended to gain a broader understanding of the influences of website quality factors as well as the antecedents of online customer trust and purchase intention within the research studies collected from selected fields of literature.

The upcoming sections will analyze and present the existing literature to give a detailed understanding of the research gaps presented in Chapter 1. Section 2.2 uses two

prominent statistical review techniques to analyze the online shopping literature that explores the effects of three quality factors in connection to customer trust and purchase intention. Sections 2.3 and 2.4 are dedicated to the vital construct of trust and will review the existing literature on the nature of trust in the online shopping context and its typology, in order to explain the kind of trust the present study is focusing on. Section 2.5 will provide an elaborated discussion of the quality concept and the three quality factors to provide a clear understanding of the necessity of considering the three quality constructs as antecedents to customer trust and purchase intention. Section 2.6 will present the theories and theoretical frameworks from the online shopping context that have explained the effects of the three quality constructs. Section 2.7 presents the research studies that have adapted the success theorization given by ISSM and the trust understanding given by SCT to propose the effects of quality factors and the role of customer trust for effective relationships. Sections 2.8 and 2.9 have been dedicated to the two remaining constructs of customer purchase intention and customer web skills. These sections will critically review the existing literature on the two constructs to provide a rationale for including them in the present study as dependent and moderating variables. Finally, Section 2.10 will summarize and highlight the key aspects from the present chapter.

2.2. Meta and Weight Analyses

The current study has considered the use of two well-known statistical review techniques, namely weight analysis and meta-analysis, to accumulate quantitative knowledge on the effects of site quality on online customer trust and behavioural intentions. To achieve this aim, the current research has formulated the following objectives.

- To understand the factors that are important for the management of online shopping information systems that could improve customer beliefs and attitudes that are useful for long-term B2C relationships.
- To understand the role of site quality for building and managing successful shopping sites to promote B2C relationships through maintaining customers' trust.
- To capture the effects of shopping site quality factors on customer trust and behavioural intentions from the existing literature.

The reason for employing such techniques is to understand the significance of the quality factors in affecting the decisive variables of customer trust and purchase intention. The research studies that are considered for these statistical analyses represent two prominent fields of research. On the one hand we have studies representing different streams of MIS research, such as human–computer interactions, information and management, online business management, and information systems research. On the other hand, we have research studies from top marketing publishers. By including such research studies, the current research is aiming to combine empirical knowledge on the management and quality of shopping sites and the influence of quality on online shopping customers for maintaining successful online B2C relationships. Specifically, the objective is to analyze various ways of triggering customers' trust perceptions to form trust in shopping sites, and to explain the importance of site quality for managing customers' trust in the long run.

The results of the Meta and Weight analyses are presented in the Appendixes (1.9 and 1.10). Considered together, the results of the Meta and Weight analyses suggest that the management of shopping sites in terms of quality relating to information, design, and service plays a very important role in improving customer trust, as these factors could trigger positive beliefs, attitudes, and behavioural intentions in online customers. The results indicate that these three quality factors are important in reducing risk perceptions in online customers, as they act as mechanisms to promote perceptions of ease and usefulness while reducing uncertainty avoidance beliefs that customers usually have towards shopping sites. Further, the results indicate that the quality factors could act to influence the customers at various stages of their relationship life with shopping sites. However, while the factors play an important role in promoting customers' initial trust with shopping sites, for successful B2C relationships they cannot be ignored in the long term. The results also suggest that the three quality factors, acting as internal signals of an online shopping site, play a similar role as external reputation signals that form expectations of value from shopping sites. Additionally, in terms of their significance for a shopping site, the expected value of the three quality factors is confirmed.

Based on the results of the Meta and Weight analyses, this research concludes that the overall website quality of a shopping site can be explained by different dimensions. These dimensions could play a role in delivering high-quality websites to address user needs as well as site developer's business objectives. The current study is specifically interested in understanding the impacts of three website quality factors on online

customers' trust. This section of the literature review presents the aggregated empirical knowledge of contemporary literature that has observed the effects of quality factors on customers' trust. A particular type of trust will be studied in this research, as discussed in the next section, and it will be reviewed in association with the three factors, namely information quality of the shopping site, interface quality or system quality of the shopping site, and the quality of the service given to the customers both offline and online. Specifically, the existing literature from the online shopping context will be critically analyzed to understand the role that the three quality factors play in explaining institution-based trust by creating situation normality and facilitating the customers' ability to shop with ease and effectiveness.

2.3. Trust in the Online Shopping Context

Trust is the key construct around which the story of this thesis revolves. The objective of this study is to explain how the trustworthiness of a shopping site could be explained or signalled through its quality factors. This research also focuses on a particular kind of trust. Generally, customers can take trust-related decisions based on either second-hand knowledge learned from others or through their first-hand experiential knowledge. This research focuses on how online customers could learn the trustworthiness of a shopping site having acquired knowledge of the trustworthiness of an online vendor on their own. First, one must understand the concept of trust in online shopping B2C relations and the differences between online trust and general brick and mortar trust. This will help to develop an understanding of the significance of website quality in improving customer trust in an online mode of business.

The concept of trust and its theorization can be found across different areas and fields concerned with human personality, including socioeconomics, psychology, and marketing research backgrounds. Trust cannot always be considered the same even though its conceptual dimensions are similar across the aforementioned research disciplines (Lewis and Weigert, 1985; Mayer, Davis and Schoorman, 1995; Lee and Turban, 2001). The existing research literature suggests that the conceptualization of trust varies according to the discipline. Personality theories consider trust as a belief or expectancy rooted in people's personality that originates in one's psychological development. Sociology theories and researchers see trust as a phenomenon within and between institutions. Meanwhile psychologists consider it to be the psychological belief of a trusting party to rely on another party in a relationship (Mayer and Davis, 1999; Wang, Wang and Liu, 2016). McKnight and Chervany (2002) describe the multifaceted

nature of trust by suggesting that psychologists see trust as a personal trait, sociologists see it as a social phenomenon, while economists see it as a choice mechanism. This explains the broadness of the concept and the differences in its conceptual applications across different areas of study.

Building on the understanding of trust given by Kee and Knox (1970), Mayer, Davis and Schoorman (1995, p. 712) have defined trust as "*The willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party*". This definition of trust is most suitable to the context of online shopping as it could suggest that online shoppers keep their faith in shopping websites in a highly uncertain condition where there is a high possibility of risk. Thus, winning the trust of the online customer has become more challenging than ever before as has understanding the trustworthiness of online vendors. There are several reasons for this; notably, a significant number of shopping websites are entering the market every year in a highly competitive environment, and it has become tough to distinguish the genuine shopping websites from fake ones.

Trust is one of the most widely studied concepts in the online shopping context, and it is a relationship construct adapted from human psychology. Several authors (e.g., Awad and Ragowsky, 2008; Ha and Stoel, 2009; Akrout and Nagy, 2018; Wang *et al.*, 2020; Ameen *et al.*, 2021) have suggested the reasons for trust being the most important concept in online shopping. These studies propose that online customers' high perceptions of risk associated with online shopping means they need some strong construct to encourage them to shop. Trust proved to be a vital reducer of customers' risk perceptions and also acts as a motivator for them when forming positive attitudes and behaviours in the online shopping context (Hsieh and Li, 2020). Trust has been found significant in affecting customer acceptance and also in the use of e-commerce websites for online shopping. According to the literature on online shopping, trust could affect customers' behaviour in both the short term and also in the long term. In other words, the presence of trust could motivate customers to make a purchase from an unfamiliar website or adapt to online shopping for the first time; in this case, trust acts as a direct antecedent of online purchase intentions. Whereas customers may decide to repurchase from an online shopping website if they think it is worth maintaining the relationship with that website, as they perceive value in it; in this case, trust provokes customers to make repeated purchases from the website. Venkatesh *et al.* (2011) and

Chong, Chan and Ooi (2012) suggest that trust will improve customer loyalty and commitment towards online shopping websites in the long term.

Trust is a significant aspect of both brick-and-mortar shopping and online shopping. In both contexts, trust develops customer purchase intention by improving positive attitude towards vendors. The very fundamental difference between the two contexts is that there is no physical interaction between customers and companies in the online shopping context. Thus, the shopping site needs to play the role of customer assistant as well as shopping vendor. Use of the Internet to assess product information, to purchase products online, and to make online payments all make it risky to conduct shopping online using the Internet. Differences in information exchange and knowledge sharing also impact how trust affects customer behaviour in traditional and online shopping contexts. Trust is a fundamental axiom for relationships between customers and firms in both brick-and-mortar and online contexts. Ranaweera, McDougall and Bansal (2005) state that, due to the lack of face-to-face interaction online, the role of trust in the online context is different and more critical than in the offline context. While trust is an essential construct and concept in all business relationships and transactions (Moorman, Deshpande and Zaltman, 1993), it is more critical in the online shopping setting than in the context of brick-and-mortar stores (Reichheld and Schefter, 2000; Steinhoff *et al.*, 2019). The need for trust in online shopping grows due to the increased transaction complexity where conditions are more uncertain in comparison to general shopping (McKnight and Chervany, 2002; Wu *et al.*, 2014).

Customer trust in online shopping systems could be seen as a necessary criteria for consumers to make a purchase. Wang and Emurian (2005) have arrived at an overview of online trust based on a discussion of the disciplines of philosophy, psychology, marketing, and management to explain the nature of the concept of trust. Whereas, Corritore, Kracher and Wiedenbeck (2003) contend that online trust is similar to and is evolved from offline trust, discussing the similarities and dissimilarities between the trust relationships in both contexts. Online trust is different from brick-and-mortar trust, in that online trust has all the same characteristics and dimensions as offline trust, but takes place in a non-physical channel over the Internet (Stewart, 2003). There are some additional features or issues, such as privacy, security, risk, the involvement of the Internet, and social media. One basic reason why consumers use the Internet for shopping research but do not purchase online is because of their beliefs about the risk of conducting transactions over the Internet (Lee and Turban, 2001). According to

Venkatesh *et al.* (2011), trust in e-commerce slightly varies from offline trust, and includes the differences mentioned above between offline and online shopping contexts.

The role of trust as a significant factor in reducing the social complexity of e-commerce has been extensively studied in the literature (McKnight, Choudhury and Kacmar, 2002a). It is well established that trust can only come into existence for the conditions where risk is involved (Mayer, Davis and Schoorman, 1995; Pappas, 2018), as in the case of e-commerce (Jarvenpaa, Tractinsky and Saarinen, 1999). The importance of trust in the online purchasing context is even more prominent, and achieving it is also more complicated in the online context (Wirtz and Lihotzky, 2003). Trust is one of the most effective mechanisms for diminishing insecurity and risk perceptions online (Suh and Han, 2002; Pavlou, 2003) and creating a sense of safety among online shoppers. Therefore, consumers' trust of the Internet and online systems are considered to play a decisive role in conceiving consumers' e-shopping behaviour. Reichheld and Schefter (2000, p. 107) highlight the importance of trust in e-commerce by saying "*price does not rule the web; trust does*"; this simply suggests how important trust is in online shopping compared to traditional shopping.

Thus, trust is an essential conceptual construct in the online shopping context due to the nature of the context. Several studies have analyzed trust based on the different factors specific to the online shopping context (Gao, Waechter and Bai, 2015; McKnight *et al.*, 2017; Ameen *et al.*, 2021). Trust is indeed influential within different fields of MIS research. When it comes to e-commerce activities such as online shopping, the role of trust becomes more significant, because the users of online shopping websites are also buyers who make monetary transactions. Winning online customers' trust has become essential for online shopping websites for long-term survival. Longevity occurs when the shopping sites can show their trustworthiness to the customers so that the customers can trust the shopping site and make transactions while maintaining a B2C relationship. This research aims to address the question of how the trustworthiness of a shopping site could be explained, so that customers can recognize it from their own experiential knowledge.

2.4. Trust Typology

Having clarified the nature of online trust, it is important to explain the different types of trust that are explored in the existing online shopping literature, to enable an understanding of the type of trust that the present study is aiming to empirically explain.

The existing literature has suggested various forms of trust. Trust is seen as a belief or perception that evolves when a trusting party or trustier (online customer) perceives the competence, benevolence, and integrity of the trustee (online shopping site) (Moody, Galleta and Lowry, 2010; McKnight *et al.*, 2017); as an attitude when it builds from the beliefs of customers in online shopping sites (McKnight, Choudhury and Kacmar, 2002b; J. V. Chen *et al.*, 2015); and as an intention when a trustee motivates the trustier and the trustier has understood the trustworthiness characteristics and is ready to be involved in a B2C relationship with the shopping site (Moody, Galleta and Lowry, 2010; Williams, Hartman and Cavazotte, 2010). Although these different forms represent the nature of trust in online B2C relationships, individually they could explain different phases of a B2C relationship given that trust evolves over time, as explained by behavioural theories such as TRA and TPB. This indeed suggests the development of online customer trust begins from the first interaction and that customers will remain with the shopping site in the long run and offer lifetime loyalty when they fully comprehend the trustworthiness of the site.

To understand this further, trust needs to be explained through two broader dimensions that are derived from relationship psychology. The first dimension is the learning or assessment of trustworthiness of a trustee (shopping site), and the second dimension is the effect of that understanding of trust both on trustier (customer) and trustee. These are described as the cognitive and effective dimensions of trust, respectively (McKnight, Cummings and Chervany, 1998; McKnight, Choudhury and Kacmar, 2002a, 2002b). Online customers first understand the trustworthiness of a shopping site through various means and based on this understanding they then improve their attitude and behaviour, and make further decisions relating to their business and interactional relationship with a shopping site.

Trust has also been typologically explained in the online shopping context to match the conditions and contexts of online shopping and online customer behavioural psychology. Research studies such as McKnight, Cummings and Chervany (1998) and McKnight and Chervany (2002) provide a typology of trust in the e-commerce context that also refers to the online shopping context. These research studies have explained how trust needs to be understood as it operates in online modes of business relationships. By adopting an understanding of the nature of interpersonal and interorganizational trust, these research studies have suggested that online business organizations and customers improve their trust based on their general tendency to trust

other organizations or people. At the same time, these studies have explained that it is possible that organizations could improve customers' trust-related beliefs, which could in turn improve their trust-related attitudes and intentions. This underpins the theoretical understanding of TRA. In the online shopping context, research studies have suggested various ways in which this process can be achieved (Gefen, Karahanna and Straub, 2003). Calculative based trust is suggested to result from the rational assessment of customers over the gains and losses they perceive from a relationship with a business organization. Thus, it has been suggested that online business organizations could adopt different ways to provoke a sense of success amongst customers so that they believe the trustworthiness of a shopping site. Institution based trust is suggested to result when customers believe that a shopping site is trustworthy, as they perceive a sense of a secure and safer environment to shop with an organization. Again, shopping sites could introduce ways to promote such beliefs amongst customers. Also, there are cognitive-based and knowledge based trusts, which have been suggested to be a result of customers' cognitive perceptual assessment of trustworthiness of an online shopping website which could result from customers' first-hand knowledge (McKnight, Cummings and Chervany, 1998; Gefen, Karahanna and Straub, 2003). This approach relies on an understanding that customers need to be allowed to make their own judgements with regards to trust related decisions. Building upon this, the current study is aiming to empirically explain what actions shopping sites could perform so as to help customers make their trust decisions on their own. This is based on a combined understanding of both institution based and knowledge based trust, as discussed above.

The current study attempts to address the gap in the existing literature relating to the development of customer perceptions of trustworthiness through the site quality. To gain trust, shopping sites can promote situation normality, which is a dimension of institution-based trust explained through site quality, so that customers can improve their perceptions of trustworthiness to form their purchase intentions through their first-hand cognitive experiential knowledge. To the best of the author's knowledge, no existing studies from the online shopping context have empirically explained this point. Situation normality has been defined as "the belief that success with the specific technology is likely because one feels comfortable when one uses the general type of technology of which a specific technology may be an instance as the users perceive that situation is normal, favorable, or well-ordered" (McKnight, Choudhury and Kacmar, 2002a; McKnight *et al.*, 2011, p. 7). Situation normality has been largely associated

with infrastructural aspects, such as customer perceived reputation built from third-party sources that improve customer trust perceptions in shopping sites. Though the understanding of situation normality can be used to explain online customers' perceptions of trustworthiness of shopping sites as a result of the site quality, no existing research from the online shopping context has attempted to empirically explain this phenomenon.

Therefore, the type of trust investigated in this study is institution-based trust that could be conveyed to the customers as they improve their perceptions of trustworthiness towards a shopping site, based on the quality of the shopping site, which can be seen as cognitive knowledge-based trust. Thus, to conclude, this research study aims to prove that the website quality of a shopping site could act to promote situation normality and improve the customers' belief in the shopping site's trustworthiness and their purchase intentions, to explain the success of both parties involved in an online B2C relationship.

2.5. Quality in the online shopping context

The concept of quality is very old and usually associated with products or services in the general brick-and-mortar context (Hackman and Wageman, 1995; Powell, 1995). Whereas, website quality or IS quality literature has only come into existence since the involvement of Internet-based systems in Internet-based communication processes within different contexts, such as online shopping, e-government, social media, e-banking, and online service systems (Blut, Wang and Schoefer, 2016; Scott, DeLone and Golden, 2016; Jeyaraj and Zadeh, 2020; Geebren, Jabbar and Luo, 2021). Maintaining high quality information systems has become a top priority for system developers, as the failure to produce high quality systems could prevent their survival in the long run (Mustafa, Kar and Janssen, 2020). MIS literature on website quality has been updated based on understandings adopted from the different research disciplines mentioned above. To understand the concept of quality and its dimensions from an online (website or a shopping site) point of view, it is necessary to define what quality means for web shopping systems (Agag and El-Masry, 2017). Clements, Pawlowski and Manouselis (2015, p. 1100) define quality as the "*totality of features and characteristics of a product or a service that bear on its ability to satisfy stated or implied needs*". This definition is ideal for the online shopping context, where information systems are designed for serving customers for different online shopping purposes, such as supplying information for products and brands and online product purchase assistance (Hsu, Yen and Chung, 2015; Kalia and Paul, 2021). For such systems, quality could

very likely be associated with dimensions such as the information and service provided on the website to help customers to shop better (Agag and El-Masry, 2017; McKnight *et al.*, 2017).

In the context of the current research and based on the understanding gained from the literature review, the current study assumes that, unlike other information systems, shopping websites provide information to allow customers to conduct online transactions and possess some unique characteristics that shape customer behaviour (Loiacono, Watson and Goodhue, 2007; Hsu, Yen and Chung, 2015; Agag and El-Masry, 2017; Kalia and Paul, 2021). For instance, certain information systems – for example, social media networks such as Facebook or Twitter, or e-learning systems – largely depend on information and design quality, even though they provide a service in a specific way (Khan, 2017; Al-Fraihat *et al.*, 2020; Villodre and Criado, 2020). Whereas information systems such as government informational websites would primarily work to deliver useful information and service to the users; in these cases, information and service quality (offline) would play a key role rather than design quality (Wang and Liao, 2008; Scott, DeLone and Golden, 2016). By contrast, online shopping web systems act both as informational sources and transactional sources (Loiacono, Watson and Goodhue, 2007; Kalia and Paul, 2021). Also, as discussed earlier, user behaviour from other IS contexts is different from customer behaviour in a shopping context. Online customers spend their time browsing for information about products and brands, and assessing other customers' reviews, price-related information, third-party trustworthiness and credibility signalling sources. Once they decide to make a purchase, customers could either pay online using credit and debit cards or cash on delivery. Most of the recent online shopping websites are providing new ways to serve their customers by providing both an offline and online service.

Thus, to study website quality in the online shopping context, one must consider the informational and transactional characteristics of online shopping and select the appropriate dimensions to represent the overall quality of a shopping site. In the online shopping context, Loiacono, Watson and Goodhue (2007) have proposed a measurement framework to examine the website quality of shopping websites. They have considered two critical tasks that are involved in shopping from an online website, which could be used to explain the overall web quality of a shopping website: gathering information before purchase and carrying out a transaction with the web vendor. These are the two primary tasks that every online customer usually performs while shopping

online. The current research suggests that the three dimensions of information quality, system quality, and service quality could combine to represent the two tasks suggested by Loiacono, Watson and Goodhue (2007). Online customers act as information seekers from online shopping websites, and therefore information quality and system quality would play an influential role. Besides, when customers try to make a purchase from a shopping website and seek to maintain a long-term relationship with it, service quality would be influential in addition to information quality and system quality. Thus, the current research identifies that, to study the quality of a shopping system, one needs to include the information, system design, and service dimensions. Based on this discussion, this study intends to include three factors of quality: information quality, system quality, and service quality.

Further, achieving situation normality is very possible with these three website quality factors, as they could provide the customers with a great sense of ease and enable access to the shopping site for different shopping purposes. Website quality can also reduce the perceptions of uncertainty by providing favourable conditions to improve trust (Chen *et al.*, 2016). However, the development of institution-based trust using website quality factors, and thereby providing situation normality, has not been thoroughly explained in a B2C online shopping context. By incorporating three quality factors, the current research intends to explain how attaining situation normality can improve customer perceptions of trustworthiness and purchase intention.

When it comes to explaining the trustworthiness of a shopping site to the customers, each of the individual factors of overall site quality has their unique role and effect, particularly when promoting situation normality to improve institution-based trust. The following sections of this chapter will provide an analysis of the existing literature that explains the effects of three quality factors on online customer beliefs and behavioural intentions, in order to clarify the gaps in the existing literature.

Customer trust has been suggested to develop or change throughout the lifetime of a B2C relationship, starting from the initial interaction between shopping sites and customers until the customers continue or leave the relationship (McKnight, Cummings and Chervany, 1998; McKnight and Chervany, 2002). In a way, the research studies in this field suggest that nurturing customer trust is a challenge for shopping sites, irrespective of customers' prior beliefs and attitudes. This highlights the importance for shopping sites in maintaining customer trust so as to win lifetime equity and thus gain

competitive advantage. This is where the role of the three quality factors is critical, although the information quality and design quality could win customers' initial trust as well as improving the trust of repeating customers. The service quality on the other hand represents overall quality, as a shopping site is an online service provider. Thus, the shopping site quality has a vital role to play to win customer trust for a lifetime as it largely represents the value offered by shopping sites in return (Parasuraman and Grewal, 2000; Parasuraman, Zeithaml and Malhotra, 2005). The following sections explain the individual quality factors in detail to highlight the gaps in the existing literature in relation to the construct relationships incorporated in this research study.

2.5.1. Information Quality

Information quality is one of the significant dimensions of website quality (Filieri, Alguezaui and McLeay, 2015) because, as an information system, the primary function of a shopping site would be to serve customers or users with information for shopping purposes. Shopping websites act as information providers as well as shopping providers when assisting online customers for different shopping purposes. So, the information quality could represent part of the overall quality of an information system considering the information output of a shopping website as an information provider. Indeed, the quality of information explains how effectively the system can deliver information to the customers to achieve their shopping objectives with minimal efforts. In MIS research, information quality is defined as "*A consumer's general perception of the accuracy and completeness of website information as it relates to products and transactions*" (Kim, Ferrin and Rao, 2008). The quality of information represents the aspects that make the information provided on the system more effective in terms of serving the users or customers while delivering its informational purposes as productively as possible. This could be more clearly understood through the dimensions of information quality. The information quality is measured in terms of the timeliness, accuracy, completeness and relevance of the information presented to the users (DeLone and McLean, 2003). The quality of information presented on a shopping website would be perceived as high quality when it attains the above dimensions of information quality.

Information quality is the most studied dimension of IS quality within the different streams of MIS literature, including the online shopping context. Research studies that have tested the effects of web quality have included information quality as an essential dimension (Xu, Benbasat and Cenfetelli, 2013; Hsu *et al.,* 2014; Ghasemaghaei and

Hassanein, 2016; Kim and Peterson, 2017; Mustafa, Kar and Janssen, 2020). These studies have suggested that information quality could influence user beliefs, satisfaction, attitudes, behaviour and intentions. Studies that are based on information systems acceptance and success use the dependent factors such as satisfaction, loyalty intentions, user beliefs, trust, use intention or purchase intention as the influences on information quality. In contrast, behavioural theories assume the attitude, perceived behavioural control, and behavioural intentions as the determinants of information quality. Besides, information quality could explain the professionalism, trustworthiness, and expertise of an information system or web system representing communicational behavioural psychology (Tseng and Fogg, 1999; Lowry, Wilson and Haig, 2014). In any sort of IS context, including online shopping, users or customers could learn the quality of information from their personal experience of using the system or site.

In terms of the context of the present study, information quality is believed to be a significant factor in terms of its effects on online customers' trust. In an online shopping context, information quality is observed and found to be influential over the formation of cognition-based trust, perceived risk, attitude towards a shopping website, customer satisfaction, perceived value, ease of use, loyalty intention, and purchase intention (Rahimnia and Hassanzadeh, 2013; Filieri, Alguezaui and McLeay, 2015; J. V. Chen *et al.*, 2015; Wang, Wang and Liu, 2016). This range of influence was even supported by the results of the Meta and Weight analyses. Wang, Wang and Liu (2016) have attempted to combine information systems success theory with commitment–trust theory to explain the effects of information quality on customer relationship commitment and trust through customers' perceptions of value and customer satisfaction. Though the three quality dimensions could directly explain customer trust beliefs, a number of studies have found that it is necessary to make customers satisfied and make them feel that they are interacting with a highly valued website in terms of quality (J. V. Chen *et al.*, 2015; Wang, Wang and Liu, 2016; McKnight *et al.*, 2017). Conceptually, information quality could build customer trust by signalling the competence, benevolence, and integrity of a shopping website along with the other two quality dimensions. J. V. Chen *et al.* (2015) support this hypothesis by suggesting information quality could explain customer trust while indirectly affecting e-loyalty, along with the two other dimensions of quality. Nevertheless, the current study has used the background support of loyalty conceptualization which conceptualizes e-loyalty as a determinant of customer trust. Based on the understanding of loyalty given by J. V.

Chen *et al.* (2015), trust in the online shopping context could be seen as a perception or intention or attitude of online customers' continuance of a business relationship with a shopping website. As the trust and loyalty share similar conceptualizations and are both similarly significant relationship factors, including such constructs in a single study did not allow the examination of trust effects on more substantial determinant factors, such as purchase intention. Because customer trust is bound to result when customers are loyal to the shopping sites, to understand the intensity of an online customer's continuance intention with a shopping site, one must examine the effects of trust on purchase intention, which could be possible if one considers the combined conceptualization of ISSM with source credibility theory.

The existing literature suggests that information quality can affect trust-related beliefs, attitudes and intentions. Empirical studies such as Ha and Stoel (2009), Beldad, De Jong and Steehouder (2010), Zhou (2012) and Kim and Peterson (2017) suggest that there is a direct effect of information quality on customers' trust in vendor. Also, online research studies (e.g., Kim, Ferrin and Rao, 2008; Kim and Niehm, 2009; Chen and Dibb, 2010; Ha and Stoel, 2012) introduce the idea that customers, through perceived information quality, evaluate whether the seller is interested in maintaining the accuracy, timeliness, usefulness, and relevance of the information to help them shop virtually over a long period of time. Therefore, the provision of such aspects would encourage the customers and make them think that the web vendor is competent and worth considering for online shopping.

To conclude, the information quality of a shopping site plays a role in assisting customers to fulfil their informational objectives and therefore influences their browsing behaviour, shopping behaviour, and purchase behaviour. In terms of the present study, a shopping site – acting as an information system – could promote customer perceived trustworthiness if the information quality of the site triggers perceptions of ease of use and usefulness. Thus, this could happen over any phase of the B2C relationship starting from the initial interaction and continuing throughout the relationship cycle. So, the importance of information quality will be unchanged in the case of initial and repeating customers. Further, the information quality could improve customers' shopping performance, as it could maximize the effects of the other two quality factors used in this study. Ultimately, customers could be able to sense a feeling of success when using the site, as they could perceive situation normality. Despite such strong reasoning and conceptual support, the existing literature from the online shopping context has not

empirically explained how shopping sites, by improving information quality, could promote situation normality to signal institution-based trust and improve customer cognitive trust.

2.5.2. System Quality

DeLone and McLean (2003) have provided an understanding of system quality by suggesting that system quality represents the quality of the information processing system itself. System quality in the online shopping context has been defined as "*technical and functional characteristics of an online shopping system pertaining to reliability, flexibility, accessibility and timeliness*" (Kim and Peterson, 2017, p. 46). In MIS research, system quality is always closely associated with information quality when studying the overall quality of an IS or in the present case a shopping website. If one considers the organizational perspective of an IS, the information is considered as the product; therefore, enhanced system quality can improve the navigability and accessibility and enable the users to use that information for the best of their informational benefits, in the present case purchasing products from a shopping site. System quality is almost studied a similar number of times as information quality in any context of MIS literature, including online shopping. This could be due to the close association between the two factors. This not only demonstrates the practicality of the two dimensions, as they assist online customers to improve their online shopping performance, but also shows how the two factors act at a conceptual level in synchrony to improve online customers' positive beliefs and attitudes towards a shopping site, such as improving customer perceptions of trust. This is because system quality improves online retailer visibility to convey dynamism, capability, credibility and trustworthiness (Luo, Ba and Zhang, 2012).

Conceptually, system quality includes factors such as system reliability, accessibility, flexibility, ease of use and usefulness (DeLone and McLean, 1992, 2003; McKinney, Yoon and Zahedi, 2002; Nelson, Todd and Wixom, 2005). Nelson, Todd and Wixom (2005) suggest that system quality represents the flow of information from the system to the end user. Thereby it can explain how freely the information could be accessed on a shopping site while reducing the efforts required by the customers to shop online. So, the system quality explains the success of site developers in making the site accessible to the shoppers online. At a conceptual level, system quality has connections to the perceived ease of use and usefulness constructs from the TAM theorization, as the quality of the system could reduce the efforts of users and help them to quickly access

the website. Thus, by making the site easily accessible and appear as being useful, the site quality can improve positive attitude towards the system.

Existing MIS research has provided a theoretical and empirical understanding of system quality. Several studies from MIS research (Gorla, Somers and Wong, 2010; Xu, Benbasat and Cenfetelli, 2013; Hsu *et al.*, 2014; J. V. Chen *et al.*, 2015; Kim and Peterson, 2017; McKnight *et al.*, 2017; Mustafa, Kar and Janssen, 2020) have studied this construct. These research studies suggest that system quality represents the quality of a web interface which allows the users to use the system. High levels of system quality could reduce the efforts that a system user requires to use the system. Also, high quality systems do not demand high web or Internet skills to access them.

In the online shopping context, there is empirical support and logical reasoning to claim that system quality can impact customer trust. Wells, Valacich and Hess (2011) suggest that the system quality of a shopping website acts as an internal signal that could provide structural assurance and improves perceptions of service quality to build online customer trust and satisfaction. Some research studies (Rahimnia and Hassanzadeh, 2013; Hsu *et al.*, 2014; Wang, Wang and Liu, 2016; McKnight *et al.*, 2017) have captured the effects of system quality on online customer trust. The effects of system quality on online customer trust beliefs are similar to the effects of information quality. In terms of trust conceptualization, system quality could show the competence and integrity of a shopping website to explain the trustworthiness of the site. Rahimnia and Hassanzadeh (2013) contend that to improve the marketing effectiveness of an e-vendor, one must nurture customer trust over website design. This study has found that the design dimension (system quality) combined with the informational dimension (information quality) could build customer trust.

In conclusion, system quality plays a role in improving navigability, which further enhances customer perceptions of ease of use and usability to trigger customer confidence and promote their trustworthiness beliefs. Further, Lowry, Wilson and Haig (2014) claimed that the system quality or design quality of a website strongly fosters dynamism to suggest the credibility of the site. They suggest that web design represents a nonverbal communication quality to make the customers perceive the professionalism of the site, as well as making the site appealing for online shopping purposes by improving trust beliefs. Moreover, system quality or design quality in a shopping website is largely responsible for the dynamism of the site and its ability to grab the

attention of customers, as well as improving navigability; it also provides hedonic motivation to the customers resulting in a sense of situation normality to improve customers' perceived trustworthiness.

There is a strong logic for understanding the system quality of a shopping site as providing assurance of situation normality and explaining the institution-based trust of a shopping site. But this logic is yet to be empirically examined, as there is no research study from the online shopping context that has considered this view. Therefore, the gap in the existing literature suggests the necessity of a study to empirically explain the effects of system quality on customer perceived trustworthiness and purchase intention, as outlined in the present research.

2.5.3. Service Quality

The third quality construct of this study, service quality, has a similarly important role as the first two quality constructs in terms of its ability to influence online customers' beliefs, attitudes and intentions. Service quality must be included in the analysis to observe the overall quality when studying the effects on online customers, due to the nature of the online shopping context (Petter, DeLone and McLean, 2013; Mishra, 2018; Kalia and Paul, 2021). By integrating hedonic and utilitarian elements of service quality, certain scholars (Bauer, Falk and Hammerschmidt, 2006; Blut *et al.*, 2015; Kalia, 2017) have provided a deeper understanding of service quality, suggesting that the service quality acts in coordination with information quality and system quality to enhance the perceptions of online customers. These studies have explained the impacts that service quality can have on online customers as they pass through each phase in the transaction: the information phase, where elements of service quality enable the customer to access the information with fewer efforts; the agreement phase, where service quality elements improve the navigation functionality; the fulfillment phase, in which service quality elements can indicate the privacy and security of customers; and the after-sales phase, where service quality elements confirm the benevolent nature of the shopping site. At each of these phases, service quality influences customer beliefs and attitudes, while supporting the informational and system assistance provided to the customer.

As online shoppers' service demands are ever expanding, so are the new ways of providing services to satisfy them. However, compared to the other two dimensions of quality, the service quality concept is very old (Parasuraman, Zeithaml and Berry,

1985), and is adapted from an offline context to the online web information systems context. Yet, initially, the MIS research has given less priority to this dimension compared to the first two dimensions of IS quality. Service quality is primarily considered as a marketing construct to explain the business organization's performance. SERVQUAL, introduced by Parasuraman, Zeithaml and Berry (1985) and Berry, Parasuraman and Zeithaml (1988), represents an early attempt to conceptualize the service quality construct in an organizational context and is mainly related to the brick-and-mortar context. Later, the service quality conceptualization was adapted for the Internet-based information systems context. Parasuraman, Zeithaml and Berry (1985) refer to service quality as a comparison between the customer's expectations and the company's performance, signalling the expectation–disconfirmation theory. The understanding of the service quality suggested by Parasuraman, Zeithaml and Berry (1985) could be applied to the information systems context. Yang, Jun and Peterson (2004) and Kalia (2017) have provided the conceptual dimensions of service quality in the online shopping context, adapting from the broader conceptualization given by Parasuraman, Zeithaml and Berry (1985) in the general brick-and-mortar context. Assurance, empathy, responsibility, reliability and responsiveness are the service quality dimensions suggested by Yang, Jun and Peterson (2004). Zeithaml (2000), DeLone and McLean (2004), Yang, Jun and Peterson (2004) and Parasuraman, Zeithaml and Malhotra (2005) were among the early research studies that have identified the importance of service quality as one of the dimensions of IS quality or web quality and have provided the conceptual understanding of the concept of service quality in the IS context.

Most of the early research studies that were focused on web quality have relied to a major extent on information and system quality dimensions. However, the service quality dimension has always been part of overall web quality; MIS literature has focused more on system and information quality, up to a point. The reason for this emphasis may be because early ISs were mostly informational. Inclusion of service quality as one of the critical dimensions of IS or web quality is gradually improving over time as new kinds of web systems, such as shopping systems, have evolved. From the review of the literature, this study has found that the use of the service quality construct as a dimension of overall web quality is frequently found in more recent MIS literature. This development might be due to the intense competition between a vast number of new web systems entering the market, where it must be necessary to give

priority to service quality. This necessity could be understood from both the customer and web vendor point of view.

A number of studies (Hsu *et al.*, 2014; Filieri, Alguezaui and McLeay, 2015; Agag and El-Masry, 2017; Kim and Peterson, 2017; McKnight *et al.*, 2017) have empirically examined the effects of the service quality dimension in the online shopping context. These studies found that service quality could be influential in determining online customer behaviour, attitudinal beliefs, user beliefs, customer satisfaction, and loyalty. The service quality in the IS context has been described by Kim and Peterson (2017, p. 46), in a definition derived from the understanding of service quality provided by Berry, Parasuraman and Zeithaml (1988), as a "*consumer's subjective evaluation of the interaction quality with a website and how well the service needs have been met*". These dimensions include necessary online service characteristics that could improve the shopping experience of online customers.

J. V. Chen *et al.* (2015) have also explained the effects of service quality on customer trust. Their study is an empirical testing of the information systems success model (ISSM) in the online shopping context. In contrast, Fang, Chiu and Wang (2011) studied the ISSM conceptualization alongside the psychological conceptualization adopted from justice theory. From this perspective, they claim that the customers need to feel in balance with their interactions or transactions with the shopping website in order for their trust to be nurtured. Online customers often consider the transaction cost suggested by Kim, Chung and Lee (2011) to understand the justice theory explained by Fang, Chiu and Wang (2011) to build trust in shopping websites. However, the existing literature has not thoroughly explained how the quality dimensions could build trust, focusing instead on how service quality merely satisfies the customer. Service quality is identified by the current study as an important dimension of overall IS quality. At the very basic level, service quality in an IS or web context can be understood through the three primary dimensions of empathy, assurance, and responsiveness (Parasuraman, Zeithaml and Berry, 1985; Pitt, Watson and Kavan, 1995; DeLone and McLean, 2003). These dimensions are very particular in an online shopping context and are key to online shopping websites. While these dimensions can be seen in general brick-and-mortar shopping, over the Internet the effects of these dimensions become more critical. This is due to the fact that, in Internet transactions, there will be no physical contact between the customers and vendors; instead, the site represents the vendor to assist the customers in achieving their shopping objectives. The risk perceptions will therefore be

very high in the online context. The vendors need to be more careful about delivering the right customer service to survive in a highly intense and competitive market. Also, the service requirements of today's online customers are constantly growing and taking new turns in direction. Coping with these demands and delivering a high-quality service is more challenging than ever. A range of studies (Zeithaml, Parasuraman and Malhotra, 2000; Tsikriktsis, 2002; Harris and Goode, 2004; Kim and Peterson, 2017; Oliveira *et al.*, 2017) have examined the effects of service quality on trust in the online shopping context.

Online shopping literature has seen considerable developments in examining the effects of service quality on customer trust. Studies have empirically captured the effects of service quality on online customer trust (Wang, Yu and Wei, 2012; Hsu *et al.*, 2014; Kim and Peterson, 2017; Oliveira *et al.*, 2017). Oliveira *et al.* (2017) have studied the effects of service quality based on the conceptualization derived from the organizational theory of trust. This study found that service quality can affect competence, benevolence, and the integrity characteristics of website trust by improving customer perceptions of satisfaction. This outcome is strongly suggested by Kim and Peterson (2017) who confirm the relationship based on the knowledge received from 150 empirical studies from the online IS context.

Overall, to the best knowledge of the researcher, no existing research study explains how the service quality could explain online customers' cognitive trust through the development of situation normality. The review of the literature suggests that it is necessary to examine the effects of service quality on customer trust as it could prolong the life of successful B2C relationships. In addition, there is a clear lack of literature that has empirically examined the effects of the three quality factors and customer trust, to suggest the possibility of forming situation normality that represents institution-based trust.

In summary, there is strong theoretical support and reasoning to explain the customer perceptions of trustworthiness and the improvement of institution-based trust by creating situation normality through the service quality. Yet, no existing research study from the online shopping context has empirically explored this idea. Although the relationships between site quality and customer trust have been explained at times, from a construct point of view, the idea of enhancing institution-based trust to improve customers' cognitive trust has not been empirically explained in the online shopping

context. By attempting to theoretically capture the construct relationships between service quality and the two other quality factors in this study, and their influence on customer trust, this thesis aims to provide useful contributions to the theory and practice.

2.6. Theories and Models to Explain the Effects of Website Quality

This section outlines the theories and theoretical models that explain the effects of website quality factors on online customers using shopping sites to purchase products. The MIS literature related to the online shopping context has seen the application of different theories and models that have conceptualized the effects of shopping site quality factors. Different research studies, based on different theoretical understandings, have explained the role of the three quality factors on online customer purchase behaviour and other beliefs including customer perceptions of site trustworthiness. Furthermore, there are special models and theorizations that have captured the effects of website quality. The following sections will review the existing literature that has theoretically explained and quantitatively captured the effects of shopping site quality on online customer beliefs and behavioural intentions.

2.6.1. Behavioural Theories

Behavioural theories, such as TRA by Ajzen and Fishbein (1980) and TPB by Ajzen (1985), could explain the effects of quality factors in the online shopping context or any other MIS context. TRA and TPB, at the primary level, propose the influential sequential nature of beliefs, attitude, and behavioural intentions on a specific behaviour. Conceptually, TPB adds a new concept of perceived behavioural control, in addition to the subjective norms and attitudes, as the antecedents of a person's behavioural intention that ultimately leads to a particular behaviour. TPB has been widely applied to study and examine different behaviours in different areas and research backgrounds. Behavioural research studies (e.g., Ajzen and Fishbein, 1973; Ajzen, Timko and White, 1982; Madden, Ellen and Ajzen, 1992) suggest that information or beliefs about an information system could affect behavioural intention and result in a specific behaviour determined either through attitude, subjective norm or perceived behavioural control.

The conceptualization from TRA and TPB could explain the effects of website quality factors (information quality, system quality and service quality), which could build a positive attitude or trust resulting in an online purchase intention (Vance, Elie-Dit-Cosaque and Straub, 2008; Chen and Dibb, 2010; Agag and El-Masry, 2017). The

research studies cited above have also suggested that trust could act as an attitudinal belief to improve positive attitude and influence customer purchase intention, as supported by TRA and TPB. Other research studies (Cenfetelli, Benbasat and Al-Natour, 2008; Sparks, Perkins and Buckley, 2013) have also posited such an assumption to explain the effects of quality factors on online customers.

In the online shopping context, the effects of quality factors have also been theorized using the expectation–disconfirmation theory which relies on customer satisfaction (Ha and Kitchen, 2020; Mustafa, Kar and Janssen, 2020). Based on this theorization, customers tend to compare their expectation with their actual experience when using a shopping site to measure their perceptions of satisfaction. By confirming the match between their expectations of information quality, system quality, and service quality with what they receive, customers will be satisfied or dissatisfied accordingly.

At the same time, several other theories have explained the effects of quality from different streams of MIS research. Theories such as source credibility theory (Hovland, Janis and Kelley, 1953), socio-cognitive theory (Bandura, 1986), the organizational theory of trust (Mayer, Davis and Schoorman, 1995), and theories based on loyalty, have also been seen as explaining the effects of web quality. MIS research has also introduced the study of the effects of quality and its dimensions from different perspectives. Some research studies investigate quality from the customers' point of view while others consider quality from an organizational point of view. For instance, Ho, Kuo and Lin (2012) have studied the effects of website quality from a socio-economic point of view, while Rahimnia and Hassanzadeh (2013) adopted a marketing point of view.

2.6.2. Other Theories and Models

Website quality has attracted the interest of research scholars as it is vital for the effectiveness of an information system as well as being important to the successful running of a web system or, in the current case, a shopping site. In the online shopping context, quality factors such as information quality, system quality, and service quality have been suggested to be influential in determining customer adoption or acceptance behaviour, as conceived by theoretical models like the technology acceptance model (TAM) and the unified theory of acceptance and use of technology (UTAUT).

The two acceptance beliefs proposed by TAM – perceived ease of use (PEOU) and perceived usefulness (PU) – are suggested to have strong conceptual associations with

quality factors (Davis, Bagozzi and Warshaw, 1989; DeLone and McLean, 1992; Petter, DeLone and McLean, 2013). Further, these two TAM beliefs could be determined by information quality, system quality, and service quality, acting as external variables proposed by TAM. These quality factors could improve customer perceptions of usefulness and could demand little effort to operate with superior information and design characteristics (Wang, 2008; Xu, Benbasat and Cenfetelli, 2013; Sedera and Lokuge, 2020). The other popular user acceptance model, UTAUT, has constructs such as performance expectancy and effort expectancy which share similar conceptualizations as TAM beliefs, as well as an elaborated understanding of the normative and behavioural beliefs suggested by TRA (Tamilmani, Rana and Dwivedi, 2020). The UTAUT includes perceptions of performance expectancy, effort expectancy, facilitating conditions, and social influence, and is designed to explain customer behavioural intention and behaviour (Venkatesh *et al.*, 2003; Venkatesh, Thong and Xu, 2012; Tamilmani, Rana and Dwivedi, 2020).

As per TAM, these quality dimensions affect the two TAM beliefs (PEOU and PU) in influencing the user's behavioural and use intention for utilizing an information system. IS research studies (e.g., Pai and Huang, 2011; Xu, Benbasat and Cenfetelli, 2013; Lee and Kwon, 2014; Rana *et al.*, 2015; Al-Fraihat *et al.*, 2020) have examined the effects of three quality factors on PU and PEOU beliefs from the viewpoint of technology or system acceptance theorization. These research studies have identified that the three quality factors would improve user perceptions of usefulness and perception of ease of use, and they could improve the customer perception of satisfaction.

There are models such as SERVQUAL (Parasuraman, Zeithaml and Malhotra, 2005) and WebQual (Loiacono, Watson and Goodhue, 2007) which were theorized purely based on the service aspects of quality in MIS literature. Parasuraman, Zeithaml and Malhotra (2005) have conceptualized the dimensions of the service quality construct in a modern IS context, whereas Loiacono, Watson and Goodhue (2007) have conceptualized web quality factors in light of the informational and transactional functions that an IS user experiences in an IS context. There is a Quality–Value–Loyalty chain which also explains the conceptual consequences of quality factors for improving an IS user's loyalty towards an IS. Each of these theorizations has their own perspective in terms of conceptualizing the effects of quality on system users and with regards to the competitive advantages to the system as well. These models have evolved over the years in how they explain the effects of quality dimensions on system users.

The inclusion of new dimensions of quality has become necessary as new kinds of ISs, such as online shopping systems, online learning systems, and online social interaction and communication systems, are becoming part of the everyday life of today's user. At the same time, new determinants of quality dimensions have been conceptualized both from the user and organizational perspectives.

Apart from the above theories and theorizations, there is one model that was built to explain the quality factors to determine the success of an IS. The information systems success model (ISSM) (DeLone and McLean, 1992; Petter, DeLone and McLean, 2013) explicitly captures the effects of quality dimensions on online customer satisfaction and use intentions. The ISSM is one of the best efforts in attempting to conceptualize the effects of quality factors in an IS context to determine IS success (Petter, DeLone and McLean, 2013). This theoretical model explains the IS quality effects on both users of the system and system developers. The model was built to explain the success of an information system as an information provider by incorporating the effects of three quality factors on user satisfaction and use intentions (Petter, DeLone and McLean, 2008, 2012). Even though this model has been tested several times over different streams of MIS literature to determine the success of information systems, only a handful of research studies in the field of online shopping have thoroughly examined the ISSM to explain the effects of quality factors in determining online customers' satisfaction or trust (see, for example, Gorla, Somers and Wong, 2010; Rahimnia and Hassanzadeh, 2013; J. V. Chen *et al.*, 2015).

ISSM has provided six success constructs, namely information quality, system quality, service quality, user satisfaction, use intentions and net benefits. Although Petter, DeLone and McLean (2013) have recommended considering trust as a success dimension, no attempts from the online shopping context have been found to do this. Research needs to extend ISSM analysis, with appropriate theoretical support, to include the understanding of success derived from trust. This revision is necessary because, as users' and developers' beliefs, attitudes, perceptions and intentions change over time, so do the information systems (Parasuraman and Colby, 2015). Today, online customers are largely depending on third-party sources to learn the trustworthiness and credibility of a shopping site to start or continue a shopping relationship with an online vendor (Benedicktus *et al.*, 2010; Chen *et al.*, 2016; Hsu, Yu and Chang, 2017). To attract new customers and retain existing customers, and to assist the customer by reducing uncertainties and risk perceptions, shopping sites are also depending on third-

party trust signalling sources (Bonsón Ponte, Carvajal-Trujillo and Escobar-Rodríguez, 2015; Özpolat and Jank, 2015; Agag and El-Masry, 2017; Filieri *et al.*, 2018).

2.7. Information System (Shopping Site) Success and Source Credibility

This section reviews the existing literature to critically discuss the use of the two background theorizations, which are integrated in this study to explore the effects of the three quality factors on customer perceptions of trustworthiness and customer purchase intentions. Table 2.1 presents the quantitative research papers that have empirically examined the construct dimensions of quality. The table also presents the empirical studies from different streams of MIS research that have tested the effects of quality factors on various dependent factors based on the theoretical support received from ISSM and SCT.

ISSM (DeLone and McLean, 2004; Petter and McLean, 2009; Petter, DeLone and McLean, 2013) is the most prominent theory to explain the role of quality factors as the dimensions of information systems success. To understand the theorization of the ISSM, it is first essential to clarify what success means in the online shopping context. Jenster (1986) proposes that information systems are developed to address a specific business need, such as being responsive to changing customer desires, to improve the product quality, or to enhance organizational communications. According to Rainer and Watson (1995), systems that fail to achieve those business objectives are very likely to be unsuccessful, and a definition of information systems success is thereby suggested. To explain the success of an information system, ISSM incorporates six constructs that include three quality factors – information quality, system quality, and service quality – alongside user satisfaction, user intentions to use the system and net benefits (benefits to the system and user). These six success constructs are indeed very important to explain the system success outlined by Rainer and Watson (1995). Whereas, the current study includes trust as a dependent success construct, as recommended by Petter, DeLone and McLean (2013), to extend the ISSM with an understanding of trust adapted from the SCT.

The theoretical research studies presented in Table 2.1, such as DeLone and McLean (1992, 2004) and Parasuraman and Grewal (2000), provide the conceptual understanding of quality and its dimensional constructs. On the other hand, empirical studies, such as J. V. Chen *et al.* (2015), Wang, Wang and Liu (2016) and Agag and Eid (2019), have tested the effects of quality constructs in different streams of IS research.

These empirical studies examine the effects of quality factors on users operating different kinds of information systems. The research studies presented in Table 2.1 are connected to the focus area of the current research. In addition to the broader review of literature, the current study also critically analyzes these focus research studies. Ultimately, by reviewing these research studies as well as undertaking a broader review of online shopping literature, the current study will be able to address the gaps identified in the literature in order to improve knowledge on the effects of quality factors on online customers.

Table 2.1 also includes research studies based on source credibility, to highlight the existing literature that has either examined or added knowledge to the application of source credibility theory with regards to building online customer trust. These research studies validate the dependent nature of trust on the three quality dimensions that are being supported by the theorization of ISSM discussed above. By including the research papers with an SCT application in the online shopping context, the current study can address the problems identified and the gaps highlighted, by representing a shopping site as an information provider, and the customer as a receiver of the information who assesses the credibility of the site based on the three quality factors.

The research studies presented in Table 2.1 are helpful in explaining the research gaps that were discussed in Chapter 1. The studies that are based on ISSM theorization suggest the necessity of including customer trust as a success determinant factor to extend the ISSM in the online shopping context. Whereas, the research studies based on credibility theory demonstrate that the existing literature largely adopts a credibility understanding based on message sources and third-party trust signalling sources. Analysis of these studies helps to explain why the credibility theory needs to be associated with shopping sites, which function as an information source to show their own credibility. Through their website quality, shopping sites could influence customer behaviour in relation to their trust development. Ultimately, Table 2.1 helps to identify this missing link and lead this research towards the combined background support of the ISSM and SCT to explain the effects of three quality factors on customer trust.

Table 2.1. The Literature on Website Quality and Site Credibility

Study (Year)	Theory	Sample	Analytical approach	Major findings
Sternthal, Dholakia and Leavitt (1978)	SCT	93	ANOVA	This study is based on the SCT understanding presented by Hovland and Weiss (1951), and it conducted multiple experiments to suggest that the true credibility of a source needs to be understood by the user in person through his or her cognitive understanding, rather than the general credibility of the source being learned from some external party. This study has highlighted that the credibility of a source could not always have similar effects on receivers' or users' behaviour. Further, this study has suggested the importance of perceived credibility in the initial interaction phase. These findings are very reasonable in the online shopping context where the credibility of shopping sites is often explained by third-party sources, but shopping sites fail to prolong relationships with the customer in the long run. Yet the customers could understand the site credibility through the website quality to maintain long-term relationships.
DeLone and McLean (1992, 2003)	ISSM	N/A	Review	One of the first studies to conceptualize different quality dimensions under one theorization. This study focused on developing dimensions that could explain the success of an information system. The authors have identified three antecedent quality dimensions, information quality, system quality, and service quality, that can affect users' satisfaction and use intentions to use the system, ultimately creating net benefits to both users and system developers.
Ballou *et al.* (1998)	Model Development	N/A	N/A	This study is an attempt to develop a manufacturing information quality model. The study is one of the very early research studies in the IS context that have studied the quality dimension. The study has identified some dimensions of information quality, such as timeliness and data quality, that are crucial for the system to deliver its purpose successfully.
Tseng and Fogg (1999)	Credibility Theory	N/A	N/A	This study has explained the meaning of credibility in a computing IS context by saying that credibility could be seen as believability which could be perceived through the quality of a system or person. This study has suggested four types of credibility including reputed and experienced credibility, which are discussed in the present research. This study suggested the importance of experienced credibility as it results from first-hand experiential knowledge, unlike the reputed credibility which is learned through some third-party source.

Table 2.1. (Continued)

Study (Year)	Theory	Sample	Analytical approach	Major findings
Parasuraman and Grewal (2000)	Pyramid model and Quality-Value-Loyalty Chain	N/A	Framework Development	This is one of the very few studies to examine the effects of quality on customer perceived value and their loyalty with the service provider. The current study has extended the Quality-Value-Loyalty chain concerning technology involvement in business operations.
Aladwani and Palvia (2002)	N/A	228	Exploratory Factor Analysis (EFA)	This study was set to develop a measuring instrument for system and information quality. The study has provided a clear understanding of the concept of quality in IS research. The study was able to successfully deliver an instrument for web quality that comprises the dimensions of information quality and system quality.
McKnight, Choudhury and Kacmar (2002b)	Framework (Trust Building Model)	1403	Structural Equation Modelling (SEM) LISREL	This research has examined the effects of customer trust on his or her intentions to transact with a web vendor. The study has conceptualized that the website quality of a web vendor could have a substantial impact on initial customer trust with that vendor. The study has also suggested that customer perceived site quality would influence a customer's trusting beliefs as well as their trusting intention. Besides, the current study has also confirmed the mediation of trust between perceived site quality and intention to purchase from the site.
Rai, Lang and Welker (2002)	Seddon's (1997) Model and ISSM	274	Structural Equation Modelling (SEM) LISREL	This research is an empirical comparison of two established IS models that explain IS success. Both models include similar quality dimensions. Results suggest the adequate performance of both models in terms of defining the success of an IS and also impact on the nature of particular IS use.
DeLone and McLean (2004)	ISSM	Case Studies	Review	This study is a re-evaluation of the original ISSM by the authors. The authors have successfully applied e-commerce success measures with the help of two case examples. This research has examined the dimensions of the DeLone and McLean (2003) ISSM model that has added the service quality dimension to the original ISSM model.
Harris and Goode (2004)	Oliver's Sequential Loyalty Chain	1750	Structural Equation Modelling (SEM) LISREL	This study has explained the role of trust and service quality for customer loyalty and satisfaction in an online shopping context. The study has proposed and examined a framework that consisted of service quality, perceived value, customer trust, satisfaction, and customer loyalty. It has explained the sequential nature of these constructs and suggested that service quality will improve perceptions of value leading to customer trust which results in satisfaction and their loyalty towards a shopping site. Overall, this study has suggested the importance of service quality in online shopping to determine the key relationship constructs included in this study.

Table 2.1. (Continued)

Study (Year)	Theory	Sample	Analytical approach	Major findings
Kim and Stoel (2004)	Loiacono's WebQual	273	Confirmatory Factor Analysis via LISREL	This study has provided a dimensional hierarchy of a web quality construct and its effects. The current study has conceptualized the effects of dimensions of web quality on trust and vice versa.
Yang, Jun and Peterson (2004)	Theoretical Study	N/A	N/A	This research study has provided dimensions of service quality in the IS context. This study has received the conceptual dimensions from Parasuraman, Zeithaml and Berry (1985) to give useful dimensions of service quality for web-based information systems.
Everard and Galletta (2005)	Framework	272	ANOVA	This study has examined the effects of the perceived quality of the online store on customer trust in the online store and intention to purchase from it. However, the current research has tested the presentation flaws as the antecedent to the perceived quality of the online store. They have considered dimensions such as poor style, incompleteness and error under presentation flaws. The study has highlighted that presentation of information with the lowest possible flaws would enhance the chances of improving customer perceptions of quality and their trust in the online store.
Nelson, Todd and Wixom (2005)	The framework of Information and System Quality	465	Structural Equation Modelling (SEM)	This research has thoroughly tested the dimensions of two quality constructs: information and system quality. In other words, the current research has deeply tested the ISSM, including the individual dimensions of each of the two IS quality dimensions.
Parasuraman, Zeithaml and Malhotra (2005)	Framework	858	Structural Equation Modelling (SEM) - AMOS	One of the first research studies that has conceptualized the concept of service quality in the IS context, adapting the conceptualization from the brick-and-mortar context. This research study has empirically examined the service quality construct from its dimensions.
Bauer, Falk and Hammerschmidt (2006)	Environmental Psychology and Flow Theory	384	Exploratory and Confirmatory Factor Analysis (CFA with LISREL)	This study attempted to test service quality in the online shopping context empirically. This study has explained various aspects that were important in the online shopping service context. The study has given knowledge of essential service quality elements over different phases of customer and shopping system interaction.

Table 2.1. (Continued)

Study (Year)	Theory	Sample	Analytical approach	Major findings
Lee and Kozar (2006)	ISSM	175	Regression and Structural Equation Modelling (SEM)	This research has tested the ISSM to explain how online customers tend to prefer websites for shopping based on the quality offered by the website. Authors have compared different shopping websites. Researchers have studied customers' assessments of the quality of multiple websites and their tendency to associate with a website. Thereby the study has observed both individual and organization impact resulting from the quality of the website.
Bai, Law and Wen (2008)	ISSM	180	Structural Equation Modelling (SEM) EQS	This study is an examination of the effects of quality factors on online customer purchase intention. Adapting to the online shopping context, authors have re-dimensionalized the two quality dimensions, namely functional quality and usability. The study has identified the significant effect of quality dimensions on customer satisfaction and online purchase intention. However, the results did not suggest any mediation of satisfaction between quality factors and purchase intention; this gives a future direction to replace the satisfaction with another conceptually more robust and similar construct, such as trust.
Cenfetelli, Benbasat and Al-Natour (2008)	TRA	1081	Structural Equation Modelling (SEM) LISREL	This research attempted to introduce marketing concepts with the quality factor to examine customer objective belief (satisfaction) and behavioural belief (perceived usefulness). By integrating service functionality with service quality, this study was able to capture both points of views of e-business, as a vendor and also as an IS.
Kim, Ferrin and Rao (2008)	Framework based on TRA	468	Structural Equation Modelling (SEM)	This study has explained different sets of trust antecedents in B2C relationships. The reputation of a vendor is suggested to be a result of third-party referrals. The cognitive-based and experience-based antecedents are suggested to influence the trust as customers learn them by themselves. Whereas, the cognition-based and experience-based trust antecedents given by this study suggest that the three quality factors used in the present research could act as both cognitive and experience antecedents to customer trust.
Petter, DeLone and McLean (2008)	ISSM	180 Papers	Review	This research is a review of research studies that have empirically tested ISSM and other success dimensions during the period 1992–2007. The study gives a deeper understanding of the effects of the three quality factors on users of different kinds of information systems.

Table 2.1. (Continued)

Study (Year)	Theory	Sample	Analytical approach	Major findings
Vance, Elie-Dit-Cosaque and Straub (2008)	Theory of Reasoned Action (TRA)	251	Structural Equation Modelling (SEM) SmartPLS	The focus of this research is to study the role of trust in IT artefacts. The study has assumed system quality and its dimensions as the antecedents of trust. Also, the study has examined the mediating role of trust between system quality dimensions and intention to use.
Wang (2008)	ISSM and TAM	240	Structural Equation Modelling (SEM) LISREL	This research is a re-specification of the ISSM model in an e-commerce context. The study has integrated the behavioural aspects into the ISSM model to examine the success of an e-commerce information system.
Ha and Stoel (2009)	TAM	298	Structural Equation Modelling (SEM) - AMOS	This research study has successfully integrated the e-shopping quality into technology acceptance theory, along with customer trust. This study has considered the overall e-shopping quality as the key determinant of online customers' trust, enjoyment, and ease of use. Also, the study has suggested the indirect effects of quality on customers' attitude and intention to shop.
Kim and Niehm (2009)	WebQual Model	266	Structural Equation Modelling (SEM)	This current study is one of its kind that attempted the examination of web quality dimensions on information quality. The study is based on the dimensions of web quality suggested by the WebQual model. However, the study has explained the effects of trust on customer loyalty; it failed to explain the interactions between quality factors and trust.
Poddar, Donthu and Wei (2009)	Congruence Theory, Self-Congruence Model	460	Structural Equation Modelling (SEM) LISREL	This research has tested the direct impact of website quality on online customer purchase intention. Interestingly, the current study has identified two unique sets of antecedents to website quality. The study has used two marketing constructs, brand personality and customer orientation, as the antecedents of quality which can also indirectly influence purchase intention through website quality.
Qureshi *et al.* (2009)	Jones and George's Theory	745	Structural Equation Modelling (SEM) - AMOS	This research study has conceptualized the effects of website quality on trust and repurchase intention of online customers. The study explains that, in a repurchase context, website quality can influence both trust and purchase intention directly. It was also proved that the website quality could affect purchase intention through trust as well.
Beldad, De Jong and Steehouder (2010)	N/A	Papers from the e-service Context	Review	This study has proposed a framework for trust in the online service context. The study has proposed three categories of antecedents to trust, namely customer-based antecedents, website-based antecedents, and organization-based antecedents. Information quality and graphical characteristics (system quality) are considered as website-based antecedents of trust.

Table 2.1. (Continued)

Study (Year)	Theory	Sample	Analytical approach	Major findings
Chen and Dibb (2010)	Framework	452	Exploratory Factor Analysis (EFA) and Structural Equation Modelling (SEM)	This study has theorized the effects of web quality on users' attitudes towards the site and trust. The study confirms that to improve the website approach intentions of users, you first need to cultivate users' positive attitude towards the site and their trust, which would be indeed possible to build from website quality.
Gorla, Somers and Wong (2010)	ISSM	800	Structural Equation Modelling (SEM) SmartPLS	This research study is an examination of the ISSM model from an organizational point of view. The study has tested the impact of the three quality factors from ISSM on the organizational impact, including the dimensions of impact such as product/service enhancement, market information support, and organizational efficiency.
Robins, Holmes and Stansbury (2010)	Source Credibility Theory (SCT)	34	Spearman Rho Analysis	This research study explains the relationship between visual design and people perceptions of the credibility of web or Internet-based consumer health-related information systems. Nevertheless, as this study has failed to define the 'health-related' products, the current study findings may not be universally generalized, because the word 'health' is used with a broader meaning and it is a largely public run industry (run by the government for the benefits of public health). Thus, the findings may not be applicable in a developing and underdeveloped country context.
Kim, Gupta and Koh (2011)	Value Framework	340	Structural Equation Modelling (SEM) - AMOS	This study confirmed the significant impact of navigation functionality, which represents the system quality by including characteristics such as operational efficiency and speedy transmission of information to signal trustworthiness of a web vendor.
Petter, DeLone and McLean (2012)	IS Success	N/A	Historical Review	This study is a historical review of information systems success understanding conducted by the ISSM inventors. The study has explained the evolution of the success theory in the information systems context over the years. The review dates back to 1950–60 when early information systems were used for data processing purposes, later moving into the decision support era, then the strategic and personal computing era, and finally reaching the current era of the customer-focused information systems. The study has explained how different phases have seen the evolution of success theory based on the purposes the ISs are used for, ultimately leading to the current days of customer-centric information systems. The study has not only provided an historical evolution of IS success theory, but also gives the current challenges and future opportunities while suggesting the importance of redefining the dependent factors of IS success.

Table 2.1. (Continued)

Study (Year)	Theory	Sample	Analytical approach	Major findings
Zhou (2012)	Elaboration Likelihood Model (ELM)	240	Structural Equation Modelling (SEM) LISREL	This study has explained the importance of information quality, system quality, and service quality along with the customer's perceived reputation and structural assurance to improve initial trust. This study has highlighted that, in the absence of previous direct experience, customers are very likely to be influenced by the reputation and structural assurances to build trust in the vendor. However, the three quality factors will play a significant role in determining the initial trust as the three quality factors could explain the competence, benevolence, and integrity of the vendor.
Flanagin and Metzger (2013)	Source Credibility Theory, Signalling Theory	1207	MANCOVA Analyses	This study has explained how online customers can distinguish expert and user reviews about the credibility of an information source and how credibility of that information source can influence customers' characteristics, such as perceptions of credibility, dependence on the information, customers' confidence in information accuracy, customers' evaluation congruence, personal evaluations and their behavioural intentions. The study suggests that general reviews or viral information that can signal the source credibility of an information system could only explain credibility, customer dependence on the information, and their behavioural intentions. These customer characteristics could easily be influenced by such information available through practices adopted by "information systems" today. Whereas the current study has provided a way to deal with such information through the information valence that increases customers' dependency on information sources in the long run. The findings of the study have some serious implications for the customer attraction schemes followed by "information systems". By adopting the viral marketing plans followed by such systems, the site may not flourish or get customer equity. Notably, in a universal context, copying or following such plans could prove disastrous, as this study suggests the strong association of social influence with it. The current study adopts this theorization to explain the effects of shopping system quality factors on customers' trust and purchase intentions over the combined conceptualization of ISSM and source credibility. The results of the current study, therefore, could explain the quality customization according to the society or region of operation.

Table 2.1. (Continued)

Study (Year)	Theory	Sample	Analytical approach	Major findings
Petter, DeLone and McLean (2013)	IS Success	N/A	Review	This study is also from the developers of ISSM. The review study has included research studies published after 1992, when ISSM was first introduced, until 2007. The study has suggested the consideration of defining variables that determine the success of an IS based on the context of the IS. This study has highlighted the importance of task characteristics, people characteristics, organizational characteristics and technological characteristics to redefine the success determinant variables. The study has suggested the extension of ISSM with appropriate variables to improve the understanding of success theory.
Rahimnia and Hassanzadeh (2013)	ISSM	100	Structural Equation Modelling (SEM) SmartPLS	This study strongly recommends the use of customer trust as a mediator for website quality dimensions, as being significant in the marketing effectiveness of shopping websites. The direct effects of quality dimensions on trust were also proved to be significant.
Sparks, Perkins and Buckley (2013)	TRA	537	Regression Equations Three-way ANOVA	This research has based its conceptualization on an adaptation of the behavioural reasoning suggested by TRA (Fishbein and Ajzen, 1975). It has considered customer trust as a behavioural belief that could build a positive attitude to improve online customers' purchase intentions in addition to the quality of a shopping website. As the online trust has been conceptualized as an antecedent to offline customer attitude, the current study has successfully explained the trust transfer from an online to offline context. As the trust itself could be an attitude, trust explaining the customer beliefs may not be as effective as it is for explaining customer purchase intention. Further, the ISSM conceptualization of the current study could also be explained by TRA; the current research has considered the use of trust-based theory and source credibility theory to understand the effects of three quality dimensions on customer trust and ultimately their purchase intentions.

Table 2.1. (Continued)

Study (Year)	Theory	Sample	Analytical approach	Major findings
Xu, Benbasat and Cenfetelli (2013)	Wixom and Todd model, ISSM and TAM (Three Quality Model)	128	Structural Equation Modelling (SEM) PLSGraph	This research has attempted to combine ISSM with the technological, behavioural model TAM in an e-service context. The researcher has conceptualized the three quality factors as object-based beliefs, which would lead to an object-based attitude, which further enhances behavioural beliefs such as ease of use, enjoyment and usefulness. Ultimately these result in behavioural intention to use the information system in the question. This research has empirically tested the Wixom and Todd model, which is indeed an extension of ISSM into behavioural understanding. The conceptual model allows the examination of the effects of quality satisfaction resulting from quality factors on users' behavioural beliefs, attitudes and behavioural intention. The three quality beliefs are considered as objective-beliefs that can influence behavioural beliefs in leading to behavioural intention.
Hsu *et al.* (2014)	ISSM	253	Structural Equation Modelling (SEM) SmartPLS	This research has combined the trust construct with ISSM in a post-purchase context. The study has considered trust along with quality as the antecedents to the repurchase intention of online customers. Trust is considered as a direct antecedent to customer satisfaction which is, of course, an antecedent of repurchase intention. Due to the nature of the current study context (post-purchase), trust has been identified as the antecedent to websites' overall quality.
Lowry, Wilson and Haig (2014)	SCT	220	Structural Equation Modelling (SEM) SmartPLS	This study shares similar knowledge to that provided by Tseng and Fogg (1999), as it differentiates credibility types. This study has explained the importance of system logo and design aspects while explaining the effects of customer disposition to trust and distrust on customer trust and distrust beliefs in an initial interaction phase that decides future relationships with the system. This study has suggested the four types of credibility, including experience credibility which results from first-hand knowledge and surface credibility that is understood through the design and logo of a web vendor.

Table 2.1. (Continued)

Study (Year)	Theory	Sample	Analytical approach	Major findings
Zhang *et al.* (2014)	Dual Process Theory	191	Structural Equation Modelling (SEM)	This study has explained the effects of online reviews on customer decision making. The findings of the study have some strong directions for the future research, as this study explains that the quality and quantity of the reviews as well as the credibility of the review source could influence customer purchase intentions and could result in a bias. This needs to be given careful consideration as there is a large amount of third-party credibility signalling sources or focus on the quantity aspect of reviews and even hired or paid quality reviews. Therefore, research needs to explain how customers could improve their decision making without depending so much on such third-party review-based credibility sources.
J. V. Chen *et al.* (2015)	ISSM	227	Structural Equation Modelling (SEM) - AMOS	This research has empirically tested the ISSM with the three dimensions as antecedents. The study, however, has replaced the dependent factors of ISSM with trust and e-loyalty while keeping the satisfaction construct from ISSM. The study has confirmed the strong effects of three quality dimensions on users' trust and their loyalty towards the e-commerce system.
Filieri, Alguezaui and McLeay (2015)	Framework (Relies on Beldad, De Jong and Steehouder, 2010)	366	Structural Equation Modelling (SEM) - AMOS	This research has empirically captured the effects of three quality dimensions on online trust. Interestingly, the current research has followed a framework provided from the literature by Beldad, De Jong and Steehouder (2010), and has considered the quality factors as the website-based antecedents that can influence trust. Moreover, it explained the opinion leadership behaviour seen in an online tourism shopping context. This study explains that if tourism customers build trust in tourism portals, they engage in e-WOM adoption and sharing.
Gao, Waechter and Bai (2015)	ISSM and Flow Theory	462	Structural Equation Modelling (SEM) AMOS	This study has combined the ISSM with flow theory to explain the relationship between three quality factors and customer trust, flow experience, and satisfaction to improve their continued intention towards mobile purchase. The study has suggested the importance of three quality factors to improve trust and satisfaction while making the customers deeply involved in interactions with a mobile shopping interface. This study has also suggested the significant impact of customer trust on flow and thereby its indirect effect on customer satisfaction through the flow.

Table 2.1. (Continued)

Study (Year)	Theory	Sample	Analytical approach	Major findings
Rana *et al.* (2015)	ISSM	419	Linear Regression Analysis	The study has examined an extended ISSM with technology acceptance theory in an e-governance context. The study has suggested the effects of system quality and information quality on citizens' perceptions of ease of use and usefulness to influence their behavioural intention and levels of satisfaction. The third quality factor, service quality, has only been proved to have a significant effect on citizen perception of satisfaction, which could be due to the nature of the current study context.
Bilgihan (2016)	Generational Theory	2500	Structural Equation Modelling (SEM) AMOS	The study highlights the importance of utilitarian and hedonic features of a website that are important for effective navigation and flow to build young customers' trust and loyalty intention. The hedonic and utilitarian aspects observed by this study represent the website design and navigability. The study highlights that "*A successful e-commerce website is one that magnetizes customers, makes them feel the site is trustworthy, dependable, and reliable*" (Bilgihan, 2016). The findings of this study do suggest that design quality or system quality is an important factor to promote online customers' trust. In a way, this study has provided support to the assumption that system quality could explain the credibility of a shopping site.
Chen *et al.* (2016)	Model based on TRA	448	Structural Equation Modelling (SEM)	This study has explained the effects of different types of information sources on customer decision making concerning customers' levels of susceptibility to informational influence. The study has explained the possibility that all three types of information sources, i.e., e-WOM sources, neutral sources, and the brand website itself, could influence customer attitude and purchase intention. Particularly, the study highlights that customers with high levels of susceptibility to information tend to rely more on e-WOM information. Whereas, customers with low susceptibility to information would tend to rely on their own decision making.
Filieri (2016)	SCT and Grounded Theory	38	Open and Axial Coding	This study explains how online customer reviews influence a customer's persuasion. The study conceptualizes that to perceive a review to be trustworthy, a customer would consider the trustworthiness of the source, trustworthiness of the message, the valence of the review, and review pattern while being moderated by a customer's involvement, experience with reviews, and type of the medium; this makes the process complicated as well as there being a possibility of deception which could sometimes lead to misjudgements. Whereas, the present study focuses on explaining how a customer could assess the credibility of a web vendor through his or her perceptions of three quality factors without being influenced by any third-party review.

Table 2.1. (Continued)

Study (Year)	Theory	Sample	Analytical approach	Major findings
Ghasemaghaei and Hassanein (2016)	N/A	452 Articles	A Comprehensive Review of the Literature	This study has reviewed the literature on information quality to explain the role played by information quality in determining customers' experience and decision making in the online environment. Through the comprehensive analysis, this study has identified that the state of information quality research has been largely focusing on explanation and prediction of approach, and consequences of information quality. The study has found prominent antecedents of information quality, such as website characteristics, the user characteristics, social and task characteristics. On the other hand, the study has also presented the consequences of information quality, such as satisfaction, website quality, trust, perceived ease of use and perceived usefulness.
Tam and Oliveira (2016)	ISSM and Task Technology Fit Model	233	Structural Equation Modelling (SEM) SmartPLS	This research study has integrated the ISSM with the Task Technology Fit (TTF) model which is built from the performance impact theory and explains an IS performance impact. The TTF model mainly deals with the matching of capabilities of an IS with the user requirements of a task. By combining the ISSM with TTF, the current study has found that the three quality factors of ISSM are important in influencing the task technology fit which could further influence individual performance and use intention. This study has recommended future research to extend the ISSM with trust theories.
Wang, Wang and Liu (2016)	Commitment–Trust Theory and ISSM	280	Structural Equation Modelling (SEM) SmartPLS	The study has tested a conceptual model which is an integrated model built from commitment–trust theory and ISSM. The authors have conceptualized that the three quality factors of ISSM could indirectly affect customer trust and relationship commitment through perceived value and customer satisfaction. On the whole, the researchers have successfully validated an IS quality-oriented theory integrated with a consumer behaviour theory.
Agag and El-Masry (2017)	TAM, Beldad *et al.* (2010) and TRA	1431	Structural Equation Modelling (SEM)	The research study has conceptualized and confirmed the effects of web quality on trust in addition to some other antecedents. The study has also incorporated the mediation effects of web quality on customer purchase intention through trust. The study has followed the conceptualization of ISSM to include information quality, system quality, and service quality as the dimensions of overall web quality.

Table 2.1. (Continued)

Study (Year)	Theory	Sample	Analytical approach	Major findings
Gao and Waechter (2017)	ISSM, TAM, UTAUT, IDT, and TCE	851	Structural Equation Modelling (SEM)	To examine the role of initial trust in the mobile payment service context, this study has integrated several ideologies from IS theoretical models such as ISSM and TAM. Results of this study have suggested that the three quality factors are important to improve customer initial trust, and the trust built over the three quality factors would improve customers' acceptance of using the service. The study suggests that if the mobile system wins the user trust over the three quality factors, the user could perceive the usefulness of the service, while the perception of effortless usage could improve usage intention.
Kalia (2017)	N/A	30 Papers	Content Analysis	This study is a content analytic research project that focused on developing methodological grounds for scale development of e-service quality for the context of online retail. The study has included some legendary research studies based on e-service quality, such as e-SERVQUAL and WebQual. The study has suggested that, due to its nature of multidimensionality, empirical examination service quality is not as easy as the other quality factors. The results also suggest that the service quality in the e-retail context could include the measuring dimensions of other quality factors, such as system quality, design quality, and information quality. Thus, the findings in a way suggest that service quality has strong associations with the other quality factors in an online shopping or retailing context.
Kim and Peterson (2017)	N/A	150 Studies	Meta-Analysis	The study has combined empirical studies to propose the most prominent antecedents and consequences of online trust. The study has identified antecedents such as perceived security, perceived reputation, perceived information quality, perceived system quality, service quality and perceived usefulness; consequences such as purchase intention, attitude, loyalty, and satisfaction are suggested. Besides, the current study has also accounted for various possible moderators that could influence the trust and use intentions in e-service or e-commerce context.
Li *et al.* (2017)	WebQual Model	298	Structural Equation Modelling (SEM) AMOS	This study has examined the effects of the website quality of a hotel on customer trust and booking intention. The study is based on the WebQual model which has given usability, ease of use, and entertainment as the dimensions of website quality. The study has conceptualized the direct effects of these four dimensions on trust and booking intention as well as indirect effects on booking intention through trust.

Table 2.1. (Continued)

Study (Year)	Theory	Sample	Analytical approach	Major findings
McKnight *et al.* (2017)	Two-Factor Theory and Trust Theory	145	Structural Equation Modelling (SEM) - PLS (XL-Stat PLSPM)	This research is an attempt to examine the effects of three quality dimensions on both trust and distrust beliefs in a B2B context. While doing this, the current study has drawn a clear distinction between service quality and the two remaining dimensions of quality. The study has also provided the indirect effects of the three quality dimensions on relationship commitment, perceived risk and continuance intention through trust or distrust.
Filieri *et al.* (2018)	Dual Process Theory	570	Structural Equation Modelling (SEM) – AMOS 22.0	This study gives knowledge of the effects of e-WOM on online customer decision-making behaviour by signalling the surface credibility of shopping systems. This research has conceptualized two categories of antecedents, namely informational influences and normative influences, on customers' perceptions of information usefulness. The current study distinguishes the effects that an e-WOM source could have on customer perceptions of information usefulness. In a way, the current research opens doors to the debate over the practices adopted by today's online portals to attract customers. This research explains the impact of customers' in-group and out-group association with their peer groups and effects on their information adoption. At the same time, the current study also suggests the normative influences on customer adoption to information. However, in today's global context of online shopping, the findings of the current research may be useful in the online tourism context. The findings of the current research may not be applicable in the context of general online shopping, as each of the countries has its own normative beliefs and influences that frame the customer perceptions, attitudes, behaviours, and beliefs over their lifetimes, towards shopping online. This could explain why online tourism customers mainly prefer visiting countries in which they feel high levels of affinity (Oberecker and Diamantopoulos, 2011). This study believes that the three quality factors, if built according to the regional markets, would be enough to build customers' trust as well as their purchase intentions. This research has provided a solution to the problem identified by Flanagin and Metzer (2013).

Table 2.1. (Continued)

Study (Year)	Theory	Sample	Analytical approach	Major findings
Luo, Luo and Bose (2018)	Dual Process Theory	338	Linear and Multiple Regression - SPSS	The research findings of this study are in line with Filieri *et al.* (2018) by identifying the moderation effects of sense of belonging of online customers with the sources that provide online informational assistance to shoppers. The current research has identified that online customers tend to be inclined towards the reviews generated by the opinion leaders with whom they feel in-group association. Nevertheless, the current research may not be applicable in the global context, as the information generated by the opinion posters could go viral and could negatively influence online shoppers' attitudes, beliefs, and perceptions and ultimately influence the customer behaviour. Nevertheless, the three quality factors could alone influence online customer trust by signalling the website's credibility in the long run. This research, therefore, attempts to investigate such a conceptual combination to explain the effects of quality dimensions on online customer trust.
Xu and Du (2018)	ISSM, TAM and Affinity Theory	426	Structural Equation Modelling (SEM) AMOS	In the digital learning context, this study has combined ISSM with TAM to explain the effects of three quality factors on users' perceptions of ease of use and usefulness. The study has found that system quality and service quality have a more significant impact on PEOU and PU compared to information quality. The study suggests that the three quality factors will affect a user's affinity towards a digital library. The study has also explained the indirect effects of three quality factors on customer satisfaction and loyalty through the users' perceptions of usefulness of using the digital library system.
Zha *et al.* (2018)	Elaboration Likelihood Model (ELM)	1000	Structural Equation Modelling (SEM) SmartPLS	This study has explained the moderation effects of focused immersion which refers to the amount of focus that an information user needs to put in to access the information for a certain task. The study has identified a positive moderation effect of focused immersion on the information quality of a source-information fit to the task; and a negative moderation on the relationship between reputed credibility of the source-information fit to the task. The results are suggesting that people who do not like to put in efforts to obtain task-related information would largely depend on reputed credibility, while people who possess focused immersion would be influenced more by the quality of information rather than reputed credibility. The results of this study suggest that some information users have a tendency to depend on reputed credibility to make decisions as it does not require more effort and is easy, which could negatively affect them in the long run.

Table 2.1. (Continued)

Study (Year)	Theory	Sample	Analytical approach	Major findings
Zhou and Jia (2018)	Uses and Gratification Theory (UGT)	223	Structural Equation Modelling (SEM)	This study has explained how website quality, that includes information quality, system quality, and service quality, influences relationship quality with customers. The study has examined the direct effects of three quality factors on customer satisfaction, trust, and commitment, as well as indirect effects through parasocial interaction and psychological distance which differentiates interpersonal communication relationship with the human-system relationship. The study has highlighted the importance of three quality factors for relationship quality to prolong long-term relations with improved trust.
Agag and Eid (2019)	Based on Trust Theory	793	Structural Equation Modelling (SEM)	This study has developed a model that incorporates different sets of trust antecedents. The study has considered website quality as a key antecedent of trust along with third-party recognition. As the current study has also highlighted the importance of the natural propensity to trust to build customer trust, along with website quality and third-party recognition, it could be assumed that customers' cultural background (which usually results in one's propensity to trust) could influence the way he or she depends on the website quality and third-party sources to improve trust in a website.
Kang and Namkung (2019)	Elaboration Likelihood Model and TAM	351	Structural Equation Modelling (SEM)	The current study has examined the effects of information quality and source credibility of an information source on customers' perceptions of usefulness and ease of use accessing the information from the source to improve customer trust in a retailer. This study has conceptualized the information quality as the central route and source credibility as the peripheral route to influence customers' perceptions. Customers' perceptions of ease of use and usefulness have mediated the effects of information quality and source credibility on customer trust. However, the current study has ignored the role of the information quality of the retailer, as well as the expertise of the retailer, to improve customer trust.

Table 2.1. (Continued)

Study (Year)	Theory	Sample	Analytical approach	Major findings
Jeyaraj (2020)	N/A	74 Studies	Meta-Regression	The study is meta-analytic research that has reviewed the literature on the relationship between system usage and individual impact, which is a key relationship of ISSM. The study has highlighted that the effect of system usage on individual impact could vary and depends on the characteristics of individual research contexts. These results are very useful for the present study. Online shopping is different from other contexts where information systems' characteristics have some unique features. In such a context, the effects of usage on individual impact must not be understood as being the same to how they are in other kinds of information systems.
Mustafa, Kar and Janssen (2020)	Expectation Disconfirmation Theory (EDT)	230	Structural Equation Modelling (SEM) AMOS	An interesting study that combines failure theory with the ISSM. The current research has examined the effects of aspects such as inaccuracies in information, non-navigability of the system, and lack of empathy on the failure of three quality dimensions. The current study is one of its kind that attempted to measure the failure of an IS and its impacts on customers.
Geebren, Jabbar and Luo (2021)	ISSM	659	Structural Equation Modelling (SEM) SmartPLS	The study has empirically tested the ISSM in the mobile banking context with the addition of customer trust into the ISSM theorization. The study has conceptualized that trust could be a mediator for the three quality factors on customer satisfaction. The results suggested the complete mediation in the case of service quality and partial mediation for the remaining two constructs. Though the ISSM and existing literature have strongly proposed the significant effects of three quality factors on customer satisfaction, including trust as a mediator between such relationships may not be very effective. Nevertheless, the findings of this study are useful as this study has focused on post-adoption behaviour of mobile banking customers.

With regards to the two background theorizations adopted within the present study, the review of the literature suggests that the concept of quality is often empirically tested using behavioural theories, marketing theories, and cognitive learning theories. Conceptually, ISSM (DeLone and McLean, 1992), WebQual (Loiacono, Watson and Goodhue, 2007), and SERVQUAL (Parasuraman, Zeithaml and Berry, 1985) have developed measurement dimensions for different web quality constructs that could be adapted in any context of MIS research, including the online shopping context. Comparatively, the use of ISSM is limited in the online shopping context in comparison to the other contexts of MIS research. There are certain research studies (e.g., Bai, Law and Wen, 2008; Petter, DeLone and McLean, 2008; Kim and Niehm, 2009; Gorla, Somers and Wong, 2010; Filieri, Alguezaui and McLeay, 2015; McKnight *et al.*, 2017) that have empirically tested quality or its dimensions in the online shopping context based on the conceptualization from ISSM.

Based on the synthesized review from the research studies presented in Table 2.1, it could be claimed that the existing research studies that have empirically examined the effects of shopping site quality using the ISSM theorization have ignored the possibility of institution-based trust as a means to improve customer cognitive or knowledge-based trust. It could also be understood that the existing literature has largely focused on reputed credibility, which involves the development of customer trust perceptions from third-party credibility signalling sources. The use of the two theories in the context of online shopping also stress this point. The ISSM is mostly validated by users, with no suggested extensions from the researchers, such as the addition of customer trust as a construct. Even the few studies that have extended the ISSM to include customer trust did not provide a thorough conceptual explanation of trust. At the same time, the SCT understanding has been largely associated with reputed credibility. Such an application largely represents the online customer behaviour based on the influences of third-party message sources. This has indeed created a theoretical argument to represent a practical understanding of the SCT theorization in the online shopping context. The SCT, which explains the communication psychology between a source and receiver, has now been extended to include the involvement of intermediaries that influence the behaviour of both source and receiver. The current study, on the other hand, attempts to address an omission in the literature, by reducing the gap between the source and receiver and considering only the two parties involved in an online business relationship. Thus, the theoretical integration could explain the customer trust and purchase intention formation

as influenced by the three quality factors. These relationships give a shopping site institution-based trust that could be empirically captured in terms of the experienced trustworthiness credibility explained by SCT.

2.8. Online Purchase Intention

Online purchase intention (OPI) is the most popular determinant outcome variable in the online shopping literature that has examined customer online behaviour (Moon, Chadee and Tikoo, 2008; Martín and Herrero, 2012; Rose *et al.*, 2012; Pappas, 2018). In fact, this construct plays a conclusive role in determining the most vital aspect of a B2C relationship, which is customer confirmation of the dependability of a shopping site. Thus, it could be seen as the beginning of a relationship that resulted from the awareness of two parties of the value involved in the B2C relationship. It indeed confirms customers' readiness to become involved in a business relationship with a shopping website. In the online shopping context, OPI is often studied as a determinant variable when observing online customer purchase behaviour. The behavioural theories TRA and TPB could provide the best conceptual understanding of online purchase intention as a determinant of purchase behaviour. Empirical studies (e.g., Agag and El-Masry, 2017; Hansen, Saridakis and Benson, 2018; Zaremohzzabieh *et al.*, 2021) have considered the conceptualizations of TRA given by Ajzen and Fishbein (1980) and of TPB given by Ajzen (1985). Research studies have explained the behavioural intention via the purchase or use intention in online shopping and other IS contexts. These theories have supported the conceptualization of online purchase intention as a dependent variable in the current study. Information system models that are based on TRA, TPB and purchase intention conceptualizations, such as TAM, have included the behavioural intention as the important dependent factor.

In the online shopping context, online purchase intention is considered mainly as the willingness or likeliness of the customers to purchase from shopping websites (Pascual-Miguel, Agudo-Peregrina and Chaparro-Peláez, 2015; Oliveira *et al.*, 2017). The measuring dimensions implemented by these empirical studies include customer willingness, customer confidence, comfort, and customer likeliness to purchase from an online shopping website. The IS quality or web quality is strongly accountable for these dimensions of online customer purchase intention (Bonsón Ponte, Carvajal-Trujillo and Escobar-Rodríguez, 2015; Ghasemaghaei and Hassanein, 2016; Tam and Oliveira, 2016). The quality of a shopping website would improve the confidence of online users or customers by delivering them high levels of information quality, system quality, and

service quality. The aim of system or web developers is to make their system or website as easily accessible as possible. Usually, the easily accessible systems, systems with high quality information (timely information and reliable information), high system quality (design quality, navigation quality, and ease of use), and high service quality (including both offline and online assistance and care) are considered to prompt purchases by online customers. This is because a website that has high quality will appeal to customers as a competent and trustworthy online shopping provider. Customers tend to feel motivated and confident in dealing with such websites that possess the aforementioned quality dimensions (Petter, DeLone and McLean, 2013; Li *et al.*, 2017; Agag and Eid, 2019). The effects of quality factors on online customer purchase intention are already well established in the online shopping literature. This was also supported by the results of the meta-analysis and weight analysis. All three factors studied in this research have been proved to be significant antecedents to purchase intentions, with considerable levels of research focusing on these relationships. Thus, there is nothing new to improve regarding the direct effects of three quality factors on customer purchase intention.

However, the inclusion of OPI plays a conclusive role, acting as a dependent factor to customer perceptions of trustworthiness which are in fact resulting from site quality factors. The present study has several reasons for including such a construct as an ultimate dependent factor to the antecedents discussed so far. Acting as a direct dependent factor to trust, the OPI explains the intensity of the trust perceptions which result from the three quality factors. The OPI indicates the levels of experiential cognitive understanding of customers which resulted from the efforts of shopping sites to promote their institution-based trust through the three quality factors. Further, the OPI acts as a conclusive construct within the new integrated theoretical framework developed by this study. As a dependent factor, OPI represents the net benefits construct from ISSM and the resultant factor from SCT, indicating the credibility understanding of a customer. Besides, the product type of the current study (furniture), which largely consists of experience characteristics, may cause customer reluctance to purchase online. Thus, to provide product-related contributions, the inclusion of OPI could explain the importance of site quality to trigger customer perceptions of trustworthiness.

2.9. Customer Web Skills

In addition to the relationships between the constructs discussed above, this research also includes a secondary study that aims to empirically explain the moderation effects

of customer web skills. Customer web skills could be understood as the set of skills required by web users to perform web-based shopping-related functions and defined as a set of skills that is important for a successful online interaction and transaction. Skills associated with information gathering and use of information for shopping purposes could be seen as web skills in an online shopping context. Existing literature from the online shopping context has explained the effects these web skills could have on online customer shopping behaviour. Mancha *et al.* (2014, p. 202) defined web skills as "*an individual's perceived mastery when using the Internet*". Online customers can demonstrate skills such as browsing skills, interacting skills, and communication skills when they shop from shopping websites. In addition, online customers could also apply their academic, personal, social and Internet skills while they conduct online shopping. Thus customers, who possess higher levels of such skills, could use the shopping sites to improve their online shopping performance and achieve their shopping objectives.

Customer web skills in the online shopping context has been associated with flow understanding, which generally explains the navigation, ease and comfort of customers using shopping sites to fulfil their shopping objectives (Pace, 2004; Ranaweera, McDougall and Bansal, 2005; Mahnke, Benlian and Hess, 2015; Wani *et al.*, 2017). It is understandable that customers with sufficient web skills could access shopping sites with ease and less effort. The decision-making capabilities of customers with proficient web skills is also higher than customers with low levels of web skills. Further, the customers with competent web skills tend to be proactive and often take the roles of opinion leaders in Internet-based communications, including online shopping (Ismagilova *et al.*, 2021)**.** Thus, customers who possess high levels of web skills can use their skills to understand the overall value received and to improve their purchase intentions.

As discussed previously, customer trust, acting as an antecedent of OPI, is often found in online shopping literature and is probably the most studied relationship (Kim and Peterson, 2017; Oliveira *et al.*, 2017; Agag and Eid, 2019; Xiao, Zhang and Fu, 2019). The results of meta-analysis and weight analysis conducted by the current research also suggest that Trust–OPI is the most studied and significant relationship in online shopping literature. In the current study, this relationship plays a conclusive role in explaining the effects of the three quality factors on customers' willingness to make a purchase.

The current study will examine the moderation effect of customer web skills on the relationship between trust and purchase intention, for a variety of reasons. Web skills have been referred to as the expertise related to web usage and computer technology (Beldad, De Jong and Steehouder, 2010). The effect of online customer web skills in moderating the relationship between trust and purchase intention could provide new knowledge, especially considering the product type that has been employed by this research. The concept of trust in the current study is developed from the three quality antecedents which are very likely to be affected by customer expertise and web skills. By examining the moderation effect of web skills between trust and purchase intention, this study could explain how customers with different web skills build purchase intentions differently based on the perceived trustworthiness that has resulted from site quality. Besides, there are no research studies from the online shopping literature that have explained the moderation effect of customer web skills on the relationship between trust and purchase intention. A number of studies from the online shopping context have explained the moderation effects of the online customer experience on customer behaviour (Chang and Chen, 2008; Venkatesh, Thong and Xu, 2012; Liu *et al.*, 2020). However, the experience of Internet shopping or Internet use may capture the skill levels of a customer, but it does not explain the complete effectiveness of customer web skills. For instance, a customer who has ten years of online shopping experience may not be as skilful as a customer who has only been shopping for a year. Web skills instead represent the overall skills that a customer possesses, while shopping experience only represents their familiarity with online shopping. No research attempt has been found that explains the moderation effect of customer web skills on customer behaviour. Thus, by investigating this issue, the current study will add knowledge to the existing literature on online customer behaviour.

By conceptualizing the moderation effects of customer web skills, this study is aiming to contribute to the literature and practice with regards to the possibility of varying effects of customer web skills on customer perceived trustworthiness and OPI.

2.10. Chapter Summary

The current chapter has critically reviewed the existing literature with regards to the effects of IS quality and its dimensions. This study has primarily concentrated on understanding the areas that have not previously been the focus or explored in the online shopping literature related to the effects of quality factors on customer trust. The review of the existing literature has helped to identify the essential areas where this

study can improve knowledge on the effects of quality on online customer trust and purchase intentions with a new conceptualization and findings. This chapter concludes by identifying some research gaps which will inform the direction of the rest of the study. The researcher has identified appropriate background theories that will help develop conceptualizations and create a model to address those gaps.

After clarifying the concept of quality in the web information systems context, the current study digs deep into the dimensions of quality. The review of literature also explores the research on quality dimensions and their effects from different streams of MIS literature, including studies from the online shopping context. After analyzing the various effects that the quality dimensions could have on users of web systems, the researcher has identified the most suitable dimensions of quality for the online shopping context. The researcher primarily focused on observing the literature that explained the effects of quality dimensions on customer trust. The current study concludes from the existing literature that the three dimensions of quality – information quality, system quality, and service quality – are essential to explain online shoppers' perceptions of trustworthiness in shopping websites. Based on the review of literature, this study will develop a framework to empirically explain how conveying institution-based trust by providing situation normality through site quality will assist customers in making trust-related decisions based on their first-hand experiential knowledge. Further, this research study confirms the necessity of examining the moderation effects of customers' web skills on the relationship between trust and purchase intention.

Finally, this chapter has identified some unexplored areas in the literature in terms of construct relationships between quality dimensions and customer trust, and the necessity for the theoretical extension of an IS quality-based model (ISSM) with communication theorization (SCT). To address the gaps that are discussed in this chapter, this research conceptually connects the chosen constructs under the combined theoretical umbrella adapted from the two theorizations.

CHAPTER 3: CONCEPTUAL FRAMEWORK AND HYPOTHESES

3.1. Introduction

Previous chapters have explained the gaps identified in the literature regarding the effects of three quality factors on customer trust and highlighted how these gaps can be addressed by the new theoretical understanding developed within this thesis. To investigate the three quality factors as antecedents to customer perceived trustworthiness in a shopping site, and also to extend analysis to include the effects of customer trust on purchase intention, this research requires a theoretical framework to integrate and relate the constructs discussed in the previous chapter. Thus, the current chapter will provide theoretical and logical support to build a conceptual model incorporating the constructs of interest and to empirically explain the construct relationships.

Based on the discussions from Chapters 1 and 2, the current study assumes that it is possible to explain customer perceptions of shopping site trustworthiness when they experience situation normality, which occurs when shopping sites provide high levels of information quality, system quality and service quality. To support these construct interactions, a theoretical rationale is required. By integrating the ISSM theorization with the credibility theory (Petter, DeLone and McLean, 2013, Hovland and Weiss, 1951), the present research aims to explain how online shopping sites could demonstrate their trustworthy characteristics to their customers, through the three quality factors, to improve customer trust and purchase intention.

Therefore, this study is going to consider the background of ISSM (DeLone and McLean, 1992, 2003; Petter, DeLone and McLean, 2013) and SCT (Hovland and Weiss, 1951) to explain customers' perceived trustworthiness in shopping sites and purchase intentions in relation to the three quality factors: information quality, system quality, and service quality. The first of the two background theories of the current model, the Information Systems Success Model (ISSM), originated from an information systems communication context, and it was conceptualized to determine the success of information systems based on three quality factors and their effects on users using the system (J. V. Chen *et al.*, 2015; Zhou and Jia, 2018; Agag and Eid, 2019; Jeyaraj, 2020). The second background theory of the current model is the Source Credibility Theory (SCT), which explains the communication psychology in a communication relationship between a source and receiver. At the basic level, the SCT states that a

source can improve the receiver's trust when the source convinces the receiver by showing expertise, trustworthiness and dynamism (Hovland, Janis and Kelley, 1953; Lowry, Wilson and Haig, 2014; Beldad, Hegner and Hoppen, 2016; Fan *et al.*, 2018; Kim, Kandampully and Bilgihan, 2018). By applying this understanding to modern-day information systems, users' or customers' trust has been explained through various factors that define the credibility in terms of either expertise, dynamism, or trustworthiness of an information system (Chen *et al.*, 2016; Zhou, Lu and Wang, 2016; Hsu, Yu and Chang, 2017; Tan, Wang and Tan, 2019). More specifically, existing research has highlighted the conflict between the credibility learned through users' or customers' first-hand experience, and through third-party credibility signalling sources (Zhou, Lu and Wang, 2016; Tan, Wang and Tan, 2019). However, the current study only investigates the trustworthiness dimension given by SCT; the other two dimensions are implicitly accepted when explaining the empirical effects of the present study.

The current chapter will provide an improved theoretical connection between quality constructs as antecedents that explain the creation of institution-based trust through the customer experience of situation normality; this enhances customer perceptions of trustworthiness as a result of customers' first-hand experienced knowledge. The two background theorizations therefore play individual roles in explaining the mutual success of the two parties involved in the online B2C relationship. Thereby, the current chapter explains the model relationships through the theoretical lenses of the integrated theorization built by this study. The current chapter will also provide empirical support from existing literature that explains the rationalization behind the relationships constructed by this research.

The rest of this chapter will describe the individual theoretical backgrounds, and then discuss the integration of the two theorizations adopted in this thesis.

3.2. Information Systems Success Model

ISSM is a quality-based user behaviour theory that explains user satisfaction and use intentions based on three quality antecedents. To understand the theorization of the ISSM, it is first essential to clarify what success means in MIS. Information systems success, as suggested by Rainer and Watson (1995), occurs when information systems are developed to address certain specific business objectives, such as being responsive to customers' ever changing needs and requirements. The objective could be either to improve the product quality, to enhance organizational communications, or to provide

value for satisfied users. Information systems that fail to support these business objectives are very likely to be unsuccessful (Mustafa, Kar and Janssen, 2020; Kalia and Paul, 2021). The ISSM conceptualization includes six constructs which were defined as the dimensions of an information system's success: information quality, system quality, service quality, use intentions, user satisfaction and net benefits. Chapters 1 and 2 have explained how these six constructs have been conceptualized by ISSM to represent the success of an IS as given by the ISSM inventors (DeLone and McLean, 1992, 2003; Petter, DeLone and McLean, 2013). In summary, the ISSM explains the success of any information system through the relationships between the six constructs. However, Williams, Rana and Dwivedi (2012) and Kim and Kishore (2019) have suggested that the success constructs proposed by ISSM actually address the benefits to both system developers and users or customers to explain the overall success of an IS, whereas ISSM primarily represents the system developer perspective.

To understand this issue, it is helpful to consider how the debate has evolved over time. Within the body of information systems research, there was a massive conflict and dispute to conceptualize the system success dimensions until DeLone and McLean (1992, 2003) established a robust model to explain IS success. DeLone and McLean (1992) reviewed the research based on IS success during the period 1981–1987 and followed the conceptualizations of Shannon and Weaver (1949) and Mason (1978), who suggested the levels or phases during the flow of communication or information; this review process enabled them to model a six-dimensional conceptual model for determining any IS success. Over time the ISSM has been revised and upgraded (DeLone and McLean, 2003; Petter, DeLone and McLean, 2012, 2013). At the basic level, the ISSM theorization is based on the serial nature of communication or information flow. Broadly speaking, these conceptualizations suggest that an IS produces information which will be used by users, and users will make their decisions based on the information delivered by the system. This information will influence both the individual who uses the information for some specific task and the organization that develops the information to help the user to use the information for his or her task fulfilment (Williams, Rana and Dwivedi, 2012; Petter, DeLone and McLean, 2013; Kim and Kishore, 2019). This conceptual nature of communication or information flow provides the conceptualization for ISSM factors, which in turn influence the success of an IS that organizes this entire communication flow between the system and the end user. ISSM theorization can be narrated from the beginning of the development of the

information through to the impact on the users' behaviour while they assess the three quality factors, to the subsequent improvement of use intentions and satisfying usage needs, and ultimately in the delivery of net benefits to the organizations and users.

By adapting the sequential nature of information suggested by Shannon and Weaver (1949) and Mason (1978), DeLone and McLean (1992) have theorized IS success. The system quality construct of ISSM would examine the success of an IS through various measures including the convenience of access, the flexibility of the system, response time, reliability of the system, ease of use, and usefulness. The product that is produced by an IS is information. The information quality construct will measure the quality of the information produced by the IS using measures such as accuracy, precision, timeliness, completeness, relevance, understandability, and so on; and the effects of the system and information quality dimensions would be examined in the effectiveness or influence phase through use, user satisfaction, individual impact and organizational impact dimensions of success in ISSM. The conceptual model of ISSM can be seen in Figure 3.1 below.

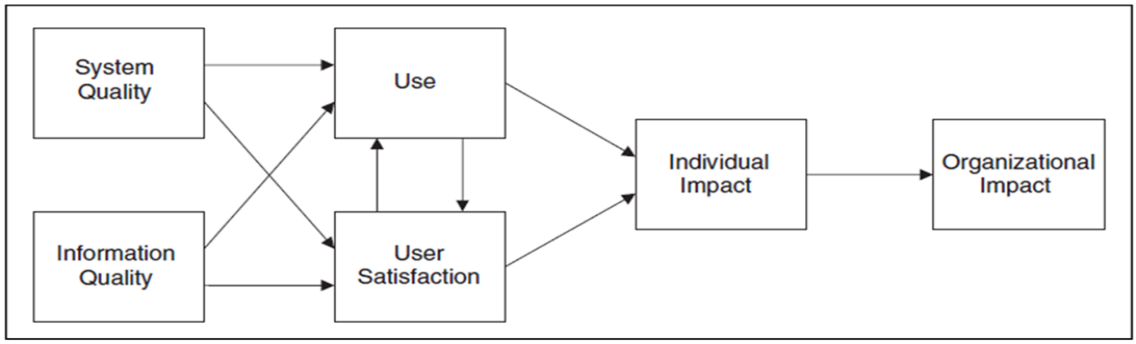


Figure 3.1. Information Systems Success Model (DeLone and McLean, 1992)

The initial version of ISSM conceptualizes no effects of service quality in measuring the success of an IS. DeLone and McLean (2003), realizing the importance of service quality in determining IS success, extended the original ISSM with the addition of service quality as an extra dimension. They also integrated the personal impact and organization impact by conceptually replacing them with a new dimension called net benefits (Petter, DeLone and McLean, 2012, 2013; Dwivedi *et al.*, 2015). The upgraded version of ISSM can be found in Figure 3.2 below. Adopting the conceptualizations from the service quality literature, DeLone and McLean (2003) have introduced service quality as the third quality antecedent of ISSM.

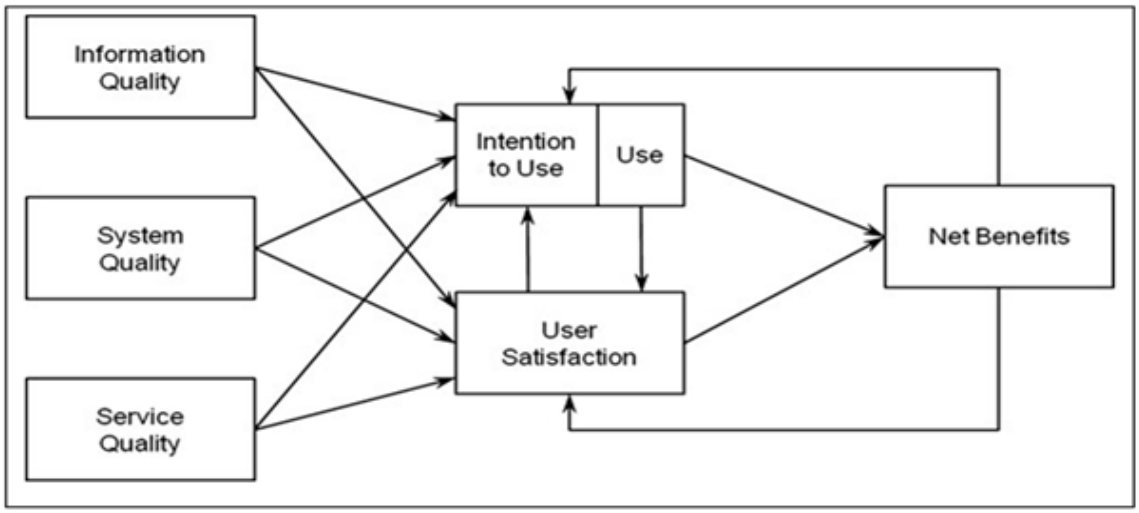


Figure 3.2. Information Systems Success Model (DeLone and McLean, 2003)

From the theorization of ISSM, it is understood that the six success constructs presented by ISSM explain the success of an IS by including both user and system developer points of view (Petter, DeLone and McLean, 2012, 2013; Dwivedi *et al.*, 2015). The model allows the examination of the success of an IS as a producer or a developer of information, while addressing the perceptions of a user or customer using the system based on the three quality antecedent factors and two dependent factors: user satisfaction and use intentions. Whereas, the net benefits explain the individual and organization impact mainly considering the measures of productivity and the benefits achieved or expected (Petter, DeLone and McLean, 2012, 2013). ISSM developers and research studies that are based on ISSM have suggested that the dimensions of the net benefits could also represent user relationship commitment, loyalty, user perceptions of performance enhancement, decision-making behaviour and so on (Williams, Rana and Dwivedi, 2012; Waheed, Klobas and Ain, 2021).

Application of ISSM can be found in different contexts and fields of MIS research, including online shopping. Nevertheless, the use of ISSM as a background theory to explain the effects of quality factors on customer trust is limited in the online shopping context (Hsu *et al.*, 2014). However, these relationships have often been examined using the conceptualizations of other theoretical backgrounds (Filieri, Alguezaui and McLeay, 2015; Agag and El-Masry, 2017; McKnight *et al.*, 2017). There is very limited research from the online shopping context that explains the effects of the three quality factors on customer trust, specifically by extending the understanding of success

through the development of a relationship based on credibility as explained by source credibility theory. As discussed previously, the combination of ISSM with SCT will address the research problem and cast light on the research gaps highlighted by the current research study.

The literature has offered some interesting perspectives on the ISSM model; for example, IS success is viewed from the perspective of individual users (Sabherwal, Jeyaraj and Chowa, 2006), and user involvement is seen as a necessary condition for the successful development of an information system (Ives and Olson, 1984; Petter, DeLone and McLean, 2013; Kim and Kishore, 2019). These ideas are supported by Mason (1978) whose work provided a foundation for ISSM; he suggested that measuring the impact of an IS is to determine if the output of an information system results in any changes to the user behaviour when using the system. However, while the satisfaction and use dimensions can include some measures of perceptions of use, performance and behaviour, the entire model is IS specific. DeLone and McLean (2003) and Petter, DeLone and McLean (2013) suggest the limitation of ISSM by stating that, in their view, satisfaction and usage measures are not very acceptable alternatives to measuring performance. This statement implies that the ISSM may not allow for the thorough examination of the important changes in perceptions, attitudes and behaviours of users when using a system. For this objective, one may need a conceptualization that could extend the effects of the three quality antecedents on to such factors that are vital in determining users' attitudes and where intentions are important. The current study will attempt to achieve this objective by extending the ISSM to include online customers' trust using the conceptualization adapted from source credibility theory.

3.3. Source Credibility Theory

Source Credibility Theory (SCT) is the second background theory that will be supporting the conceptual framework of the current research. The effects on online customer trust of the three antecedent factors from ISSM will also be explained using SCT. The role played by SCT is to represent the customers' point of view regarding the effects of the three quality factors on customer trust, while also representing the shopping sites' efforts to promote effective online business communication. This is because SCT explains customers' first-hand cognitive perceptions of site trustworthiness and therefore theoretically supports the concept of knowledge-based trust. The term source credibility was first coined by Hovland and Weiss (1951). As previously explained, this theory suggests that in a communication relationship between

a source and a receiver, the receiver could be convinced when the source presents itself as credible by showing its expertise, dynamism, and trustworthiness. This theory dates to an era of traditional communication when communication exchange was through the means of electric telegraphy using analog codes. This theory has been adapted within modern-day IS research to explain interpersonal and organizational communications using modern digital communication and information technologies (Banerjee, Bhattacharyya and Bose, 2017; Chen *et al.*, 2019; Hsieh and Li, 2020; Chang, Zhang and Gwizdka, 2021). As discussed in Chapter 2, the theory has been largely associated with the Internet-based communications context and specifically with users' decision making and behaviour changes depending on message sources, such as third-party reviews, trust and credibility signalling sources. However, based on the knowledge provided by Chen *et al.* (2016) and Mpinganjira (2018), this theory could also explain the communication effects of a shopping site on the customer, as the shopping site is itself a source of information for online customers to help them achieve their shopping objectives by assisting them with decision making. At the same time, Casado-Aranda, Dimoka and Sánchez-Fernández (2019) and Tan, Wang and Tan (2019) explain the conflicting nature of credibility learned by users from their first-hand experience and third-party sources. The majority of the existing literature from the online shopping context has used the background support of SCT theorization in association with reputed credibility, which relates to customer dependence on third-party message sources. In contrast, the current study focuses on explaining the first-hand experienced credibility which could be potentially acquired through the presence of three quality antecedents and how this credibility can build customer trust in the context of a shopping site to explain online B2C relationships. Supporting the views of the present study, Giffing (1967) strongly suggested the negative effects on people's decision making when they rely on others' opinions rather than using their own assessment of a source, and also highlighted the importance of cognitive experiential decision making which is largely useful in the context of online shopping today.

To further understand the source credibility theorization in the context of online shopping, the present study assumes that it is necessary to discuss what is meant by source credibility for online shopping sites. According to Hovland and Weiss (1951), source credibility is the overall value of the extent to which a communicator is perceived to be an expert and it is also the degree of confidence in the communicator's intention to communicate his or her expertness. Luo *et al.* (2015, p. 308) define source

credibility as "*information recipients' perceptions of an information source's expertise and trustworthiness*". According to Hovland and Weiss (1951) the source credibility theory denotes how, in a communication source and user relationship, the user can be convinced when the source presents itself as credible. Authors have developed this theory from the perspective of a communication developer and receiver relationship. This theory, at the primary level, explains how a communication source could signal its credibility to the receiver. The SCT is a kind of communication relational theory that explains how the receiver of a communication, or in the current case the online shopper, would understand website credibility through the trustworthiness, expertise, and dynamism shown by a shopping website (Lowry, Wilson and Haig, 2014; Luo, Luo and Bose, 2018; Gilal *et al.*, 2020). Thus, when the credibility understanding is adapted to the online shopping context, this theory could explain the readiness of online customers to be involved in a relationship (communication) with a shopping site, by understanding whether or not the shopping site is professional and trustworthy. This could be learned through the perceptions of credibility that could be explained from various factors, such as information quality, system quality, and service quality.

Hovland and Weiss (1951) state that source credibility could also be explained in terms of two dimensions of effectiveness, as in the case of trust theorization. The first dimension represents the learning of the credibility of a source (Zhou, Lu and Wang, 2016; Tan, Wang and Tan, 2019), while the second dimension represents the effect of the credibility on users' decision-making behaviour (Zhang *et al.*, 2014; Ismagilova *et al.*, 2020). At the very basic level, the source credibility theory expresses how, in a communication relationship, the characteristics of a communicator would affect the receiver's acceptance of the message and communicator. In the online shopping context, various factors could signal the expertise and trustworthiness of a shopping website, such as a website's quality dimensions (Petter, DeLone and McLean, 2012, 2013; Lowry, Wilson and Haig, 2014). The current research has included both the learning dimension and affective dimensions of source credibility. The current study presumes that the three quality factors, by signalling the credibility of a shopping website, would result in positive trust; this trust would then affect customer purchase intention. Therefore, the current model could explain both the processes of learning the credibility of a shopping website and the affective side of that source credibility understanding.

Thus, the role of SCT as a background theory for the present research is to support the trust construct as a dependent factor to the three quality factors, as well as an antecedent

to customer purchase intention. While trust is a crucial relationship construct in the context of online shopping, SCT is a theory based on the communication relationship between two parties involved in an online B2C relationship. In the information systems context, the source credibility has been understood as users' or customers' beliefs of expertise, dynamism, and trustworthiness in an information provider such as a shopping site (Kalia, 2017; Kalia and Paul, 2021).

Hsieh and Li (2020) claim that, in the online environment, the importance of source credibility is more vital because it helps online customers build trust towards shopping websites while reducing their risk perceptions. Sternthal, Dholakia and Leavitt (1978) and Harmon and Coney (1982) explain that expertise, dynamism, and trustworthiness are inherent characteristics of source credibility, and this idea has been empirically supported in the modern day IS context (Lowry, Wilson and Haig, 2014; Ayeh, 2015; Gilal *et al.*, 2020). These studies have investigated the assumption that credible sources show trustworthy characteristics; in other words, trustable sources are considered credible. This might suggest one dimension of source credibility, which is the learning of source credibility. On the other hand, Hovland and Weiss (1951) and Hovland, Janis and Kelley (1953) claimed that the sources that appear credible could improve users' trust. This assertion refers to the affective dimension of source credibility. Generally, the credibility of a referent source could be observed from various factors, such as competence, integrity, the benevolent nature of the source, resourcefulness, skill set, dynamic nature and so on. Sources that show these characteristics are assumed to be credible and dependable. From the perspective of ISSM, Petter, DeLone and McLean (2013) have suggested that the three quality factors (information quality, system quality, and service quality) are enough to impact trust by signalling the dimensions of credibility mentioned above. In fact, some of these credibility dimensions are also vital dimensions of cognitive trust (McKnight, Cummings and Chervany, 1998; McKnight and Chervany, 2002; McKnight *et al.*, 2017). So, this research assumes that the credibility of a shopping website that is learned from the three quality factors would improve customer trust.

Relating the theory to this thesis, SCT suggests that websites could win customer trust by showing their credibility to their customers. The present research mainly considers the trustworthiness dimension to explain the effects of three quality factors on customer trust and further extends the effects of customer trust on purchase intention. Source credibility provides a strong theoretical background as far as the trust understanding is

concerned in the current study context. This is because, based on the credibility theory, a shopping site could present itself as credible if it was a well built and maintained site in terms of information, design, and service. However, in the online shopping context, as discussed in Chapter 2, the understanding of SCT has often been restricted to third-party information sources that signal customer trust-related beliefs, attitudes, and intentions towards a shopping site. This reputed credibility refers to the understanding that customers' attitudes and behaviours are affected by credible message sources. In contrast, the present research aims to explain the possibility of customer trust development by triggering customer trustworthiness perceptions through the site quality. This understanding could explain how a shopping site acting as an information source as well as a shopping provider, when designed with high quality, could convey trustworthiness to improve customer trust and purchase intention. The outcome of this process is experienced credibility.

To explain this idea from the perspective of ISSM theorization, the three quality factors are suggested to impact upon information system users' beliefs, attitudes, and behaviour. The experienced credibility that is signalled through the three quality factors of ISSM could impact users' or customers' trust, representing the measure of satisfaction from the ISSM, while the customers' purchase intentions could represent the organizational impact proposed by DeLone and McLean (1992) or the net benefits indicated by DeLone and McLean (2003) and Petter, DeLone and McLean (2013). Therefore, the effects of the three quality factors on customer trust and purchase intention could be understood in a more holistic sense when combining an ISSM perspective with an SCT point of view. The integration of the two concepts will be further discussed in the next section to explain the theoretical framework of the present research.

3.4. Integration of ISSM and SCT

This section presents the rationale for the integration of the two background theories used in this research. ISSM provides an understanding of success in relation to the effects of three antecedent factors (information quality, system quality, and service quality) and three dependent factors (user satisfaction, use intentions, and net benefits). Whereas SCT presents an understanding of credibility based on three dimensions (expertise, dynamism and trustworthiness) suggesting that the users would be convinced to become involved in a communication relationship when they perceive that the source is credible. The integrated theorization therefore explains how online customers could

be convinced to trust a shopping site through their first-hand cognitive understanding of trustworthiness credibility, as learned from the presence on the site of three quality factors. The current conceptual model thereby integrates the quality factors suggested by DeLone and McLean (2003) and the notion of trust adapted from SCT by Hovland and Weiss (1951).

On a theoretical level, the conceptual model of this study aims to explain the success of both parties involved in an online business communication relationship: the shopping site and the customer. A shopping site can build customer trust by suggesting its expertise, dynamism and trustworthiness through the three quality factors. Thus, the development of customer trust and purchase intention is seen as a sign of the site's success, while the customer's understanding of site credibility and trustworthiness is seen as a success for the customer. This conceptualization is possible with SCT, as the theory explains that the information receiver (customer) could be convinced to trust the source (shopping site) when the three quality factors convey the site's expertise, dynamism and trustworthiness. This idea is also supported by the ISSM developers Petter, DeLone and McLean (2012, 2013), as they have recommended the empirical testing of trust in the online shopping context, with regards to the three quality constructs, with a suitable theoretical extension.

The ISSM has been extended to combine with SCT in the current research, but the original constructs of ISSM, such as user satisfaction and net benefits, have been dropped in this study. The reason for this decision is that customer satisfaction is mostly associated with the post-purchase evaluation of the customer experience with the given IS. The use of customer satisfaction is thus restricted in relation to the post-purchase experience with a shopping website. DeLone and McLean (1992) and Petter, DeLone and McLean (2013) define satisfaction as the user's overall response to the use of the output of an IS. The definition suggests that the concept of satisfaction needs to be understood through the user's complete experience with an IS that includes browsing for information and finishing a purchase. Thus, satisfaction is mostly associated with post-purchase and may not explain prospective consumers' behaviour completely (Ha, Janda and Muthaly, 2010; Lin and Lekhawipat, 2016; Liu *et al.*, 2020), based on the expectation–disconfirmation theory. As satisfaction is a beneficiary response of a customer towards their completed shopping expedition with a shopping website, the current study does not conceptualize this construct in the current model. However, the three quality factors could signal the customer satisfaction in the first interaction by

signalling functional performance as well as meeting the utilitarian expectations of customers (Liu *et al.*, 2020), and the service quality dimension largely requires a successful purchase experience to assess customer overall satisfaction thoroughly (Taylor and Strutton, 2010). Fassnacht and Köse (2007) argue that customer satisfaction develops over time through a customer's overall response to the purchase and consumption experience with a given system. This argument is further supported by Martín, Camarero and José (2011) who describe the concept of satisfaction as implying the accomplishment of expectations as well as a positive and affective state that could result from previous outcomes in an online B2C relationship. Thus, by combining their initial interaction assessment and evaluation of the first successful transaction, customers tend to enjoy overall satisfaction. Instead, the inclusion of trust could capture a fixed and strong opinion of the user or customer towards the website enabling them to start or to prolong the relationship, which could represent both their initial interaction and repeated interaction (Kim, 2014).

As seen in Figure 3.3 below, the ISSM quality factors are acting as antecedents of the current model, with the trust and purchase intention serving as the dependent variables. Trust is acting as a dependent factor for the three quality dimensions and also as the antecedent to customer purchase intention. At the same time, trust is shown to have mediation effects between the three antecedents and purchase intention. This mediating effect could be understood in the light of how the current integration of the two background theories is situated within the context of the well-known behavioural theories TRA and TPB. The three quality factors could act to invoke attitudinal beliefs, which could form a positive attitude of trust towards a shopping website. This attitude would further lead to customer online purchase intention, as recommended by the TRA. Further, the current integration of the two theories could also be supported in the light of the conceptualizations of the two individual theories. As previously discussed, the integration of the two theories can withstand scrutiny from the perspective of either of the two theories. In terms of the ISSM conceptualization, the current model includes the three quality antecedents, with trust and online purchase intention as the dependent factors that could replace customer satisfaction, use intentions or net benefits. As well as providing theoretical support to the antecedental nature of the three quality factors, the ISSM also represents the success of a shopping site as the three quality factors are conceptualized to promote situation normality to improve customer trust. Whereas the SCT assumes that online customers can learn the trustworthiness of a shopping site

from their first-hand experiential knowledge to make trust decisions, representing the concept of success from the customers' point of view. The next section will present the conceptual framework developed by the present research.

3.5. Conceptual Model and Hypotheses Development

This section of the chapter provides a detailed overview of the conceptual framework developed by the current study. The development of the research hypotheses will also be provided in this section. The conceptual model of this thesis is shown in Figure 3.3, showing the constructs and their relationships as conceptualized by the researcher. The rest of this section will explain the theoretical and empirical support that justifies the relationships in the model. The conceptual and logical reasoning behind every relationship within the new conceptual model is also presented.

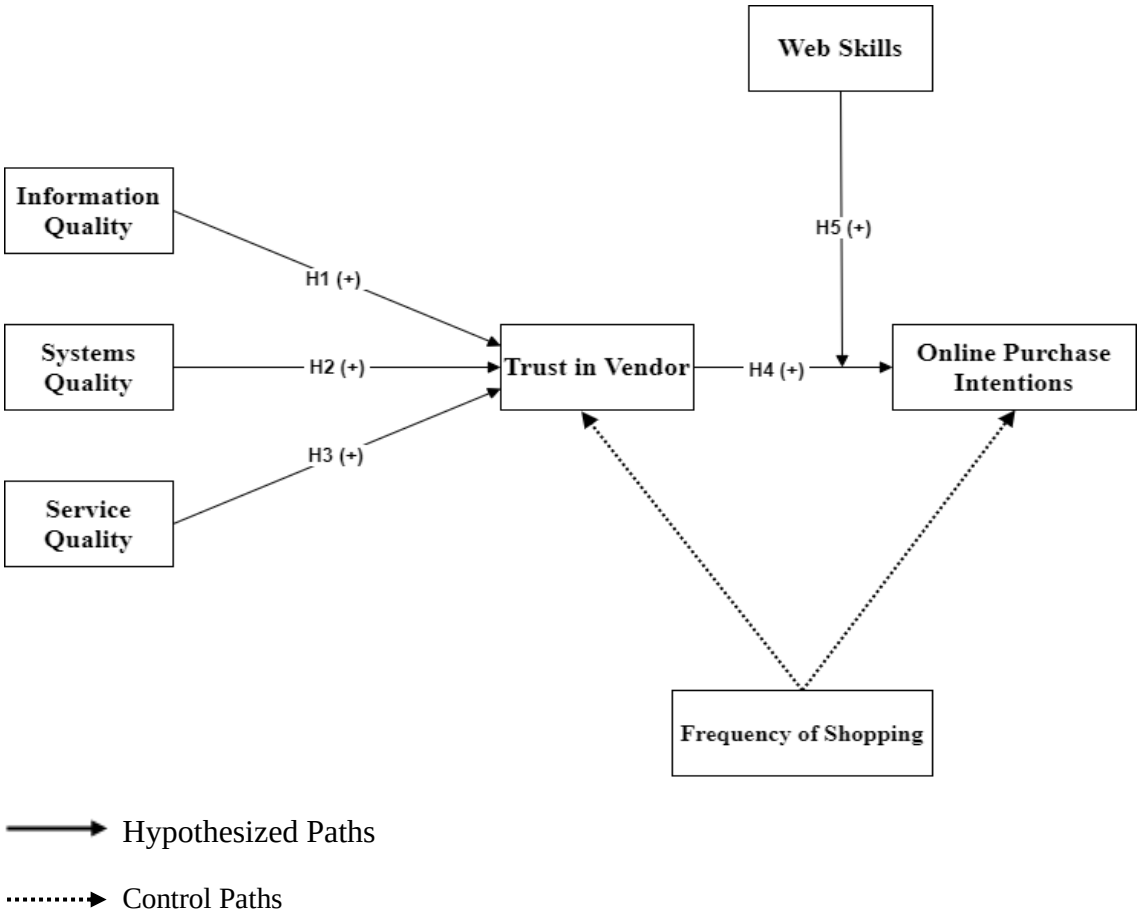


Figure 3.3. Conceptual Model Derived from ISSM and SCT

The following sections provide the rationale for the model relationships with appropriate logical and empirical support taken from the existing online shopping literature. Thus, the following sections will provide a practical reasoning for the construct relationships developed by the present research.

3.5.1. Information Quality and Trust in Vendor

Information quality will be acting as one of the three antecedents to customers' perceived trustworthiness. Theoretically speaking, this study assumes that, along with the two other quality factors, information quality creates situation normality and can therefore convey institution-based trust so that customers can improve their trust perceptions. Conceptually, information quality includes the dimensions of information completeness, relevance, format, timeliness, accuracy, and usefulness. These dimensions are essential for successful interactions between customers and online shopping websites. Relevant, complete, timely, accurate and useful data could build a positive attitude towards the shopping website. Customers could easily trust a website that shows these characteristics. Information with such characteristics is bound to achieve customer trust and help organizations achieve their goals. In the online shopping context, information quality is observed and found to be influential on cognition-based trust (Nicolaou and McKnight, 2006; Kim and Niehm, 2009; Pearson, Tadisina and Griffin, 2012; Ghasemaghaei and Hassanein, 2016). DeLone and McLean (1992) suggested the importance of information quality for determining the success of an information system and conceptualized it as an essential antecedent dimension of ISSM. This research has modelled information quality as one of the antecedent constructs to the building of trust in the vendor.

In relation to the overall theorization of the present study, information quality, by creating situation normality, will convey institution-based trust to the customers. Customers will be able to understand the trustworthiness of a web vendor as they perceive the credibility from the information quality, and this serves to improve their cognitive trust.

Research studies such as Beldad, De Jong and Steehouder (2010), Zhou (2012, 2013), Kim and Peterson (2017) and Geebren, Jabbar and Luo (2021) have suggested the direct effect of information quality on trust in vendors in the e-commerce context. Online research studies including those by Kim, Ferrin and Rao (2008), Kim and Niehm (2009), Chen and Dibb (2010) and Ha and Stoel (2012) have affirmed that customers, through perceived information quality, evaluate whether the seller is interested in maintaining the accuracy, timeliness, usefulness, and relevance of the information to help customers shop effectively. Conceptually, information quality would signal the competence and integrity of the shopping website by suggesting the resources, skills, truthfulness, and commitment of shopping websites. Thus, customers would improve

their trust towards a shopping website that provides high quality information. Further, Tseng and Fogg (1999) and Tan, Wang and Tan (2019) contend that, based on first-hand experience, people generally decide whether or not to trust other parties, in the present case an online shopping website. The effect of information quality on customer trust is key to the current study. The information quality of a website is only understood through the direct involvement of a user using the system. Shopping websites may signal their credibility through various practices to win customer trust, such as hiring third-party e-WOM sources, but one could assess the information quality of a website only through first-hand experience. With its ability to change customer attitudinal and cognitive beliefs, information quality could influence online customer trust and help to maintain long-term relationships with shopping websites. Based on theoretical and empirical support, the following hypothesis is formulated:

H1: *Information Quality is positively related to Trust in Vendor.*

3.5.2. System Quality and Trust in Vendor

The second antecedent of the current model, system quality, represents the design and navigation of a site that could improve the site's functionality. System quality from a shopping site perspective can be recognized by its usability, availability, reliability, adaptability and the fast response time of the system (DeLone and McLean, 2004). System quality conceptual dimensions include response time, navigation, convenience and ease of use, which all serve to make a system more user-friendly, thereby improving the ordering process and thus influencing the trustworthiness of a shopping website (J. V. Chen *et al.*, 2015; Kim and Peterson, 2017). It has been argued that customers may abandon ordering items online if they find the system harder to explore, thus they tend to overlook poor service outcomes (McKnight *et al.*, 2017). Gefen, Karahanna and Straub (2003) noted that the system's ease of use has a direct effect on trust. J. V. Chen *et al.* (2015) also found system quality to be a strong influencer of trust.

By providing ease of access and improving navigability and functionality, system quality is able to display situation normality to the customers of a site and improve their confidence while promoting institution-based trust. On the other hand, customers improve their first-hand cognitive trust through their personal experience of using the site and this helps to improve their perceptions of trustworthiness towards the web vendor.

Analyzing 19 studies that have examined the relationship between system quality and trust in an e-commerce context, Kim and Peterson (2017) found a significant relationship between these variables. McKnight, Choudhury and Kacmar (2002b) also identified that website quality could be a strong predictor of trust. Furthermore, Agag and El-Masry (2017) stressed that if a website improves customers' navigation, and is responsive, empathic and supportive, while being perceived as secure and safe, the customer will form a positive impression about the website, which could eventually be considered as reliable. Yoon (2002) also proposed that the navigation functionality of a website would be positively related to trust in the site. Similarly, J. V. Chen *et al.* (2015), McKnight *et al.* (2017) and Geebren, Jabbar and Luo (2021) stated that the navigation functionality of an e-commerce website directly influences online customers' trust. So, every dimension of system quality could impact customer trust in a shopping website. Based on the above discussion, the following hypothesis can be formulated:

H2: *System Quality is positively related to Trust in Vendor.*

3.5.3. Service Quality and Trust in Vendor

The final antecedent of the current study, service quality, represents the provision of effective service to online shoppers during their time online on a shopping site and after the purchase. According to the ISSM conceptualization, service quality determines an individual's intentions to use a system (Petter, DeLone and McLean, 2013). Conceptually, service quality includes three dimensions: empathy, assurance and responsiveness. Service quality has a strong conceptual ability to signal the trustworthiness of a shopping website and improve the level of customers' trust in the site. The three dimensions of service quality considered by the current research mainly improve customer confidence in online shopping websites. In e-commerce literature, research studies by Collier and Bienstock (2009), Kuo, Wu and Deng (2009), J. V. Chen *et al.* (2015), Kim and Peterson (2017) and Oliveira *et al.* (2017) have observed the positive relationship between service quality and perceived trust in vendor and online purchase intention. The current study conceptualizes that service quality would directly influence trust in a vendor.

Generally, customers perceive good service quality as a vendor's efforts to maintain good relationships with the customers (Su, Swanson and Chen, 2016). Thus, conceptually, the service quality could signal the benevolent nature and integrity of a shopping website. In the online shopping context, where risk perceptions are high,

service quality could improve a customer's perceived trust in the vendor by giving customers confidence in the website (Gao and Waechter, 2017; Kalia and Paul, 2021). Kim and Peterson (2017) argued that customers tend to appreciate online vendor's efforts to provide high service quality; it is indeed a signal through which online vendors can show their expertise, integrity and benevolence in order to explain their trustworthiness to their customers and maintain long-term relationships. Besides, Oliveira *et al.* (2017) suggested that service quality is a robust interaction-based construct that could build a customer's online trust by delivering successful informational and transactional interactions. In general, the service quality of a shopping website refers to both the offline and online service that online customers can expect (Kalia and Paul, 2021). The online service would enable the customers to shop more productively, while the offline service would further enhance the trust perceptions by delivering the final service to the customers. In addition, the service quality has a strong ability to promote situation normality to improve customers' perceived trustworthiness. This conveys both institution-based trust from the sites' perspective while developing cognitive trust from the customers' perspective.

In the absence of prior experience with a shopping website, customers rely on online service quality to improve their trust in the online vendor so as to continue the relationship with a site (Su, Swanson and Chen, 2016; Gao and Waechter, 2017). Service quality also enhances the trust of repeat customers to maintain long-term relationships with shopping sites (McKnight *et al.*, 2017; Dai and Salam, 2020; Kong *et al.*, 2020). Further, in the online shopping literature (e.g., Kim and Peterson, 2017; Oliveira *et al.*, 2017; Geebren, Jabbar and Luo, 2021) there is strong support for the positive effects of service quality on trust in the vendor. Based on this discussion the researcher postulates that:

H3: *Service Quality is positively related to Trust in Vendor.*

3.5.4. Trust in Vendor and Online Purchase Intention

While the theorization of the current study is primarily associated with customer trust, the inclusion of customer purchase intention adds value to the findings. In any kind of business, whether offline or online, trust is necessary for customers to engage in any monetary transactions with a shopping vendor. In the online shopping literature, perceived trust has been considered as the most significant antecedent of customer online purchase intention. In the online shopping context, the customer trust has been

defined as "*a consumer's subjective belief that the selling party or entity will fulfil its transactional obligations as the customer understands them*" (Kim, Ferrin and Rao, 2008). Research studies conducted by Andrews and Bianchi (2013), Ashraf, Thongpapanl and Auh (2014) and Fang *et al.* (2014) have suggested the significant and positive relationship between the trust in vendor and online purchase intention, and this is one of the most studied relationships in the online shopping context. Online shopping literature suggests the importance of trust as a risk reducer, motivator, and confidence builder that can improve the willingness of customers to purchase from a shopping website. The relationship between trust and purchase intention is the key determinant factor resulting from the integration of ISSM and source credibility theories to provide the background support for this study. Therefore, this study assumes that when shopping websites improve their quality factors, this action could signal the experienced credibility of that site, improving customers' trust and resulting in a stronger purchase intention. Based on this discussion, this study hypothesizes:

H4: *Trust in Vendor is positively related to Online Purchase Intentions.*

3.5.5. Moderating Effect of Web Skills

There are no studies that have captured the moderation effects of online customer web skills on the relationship between customer trust and purchase intention with a site. Customers with different levels of web skills tend not to react in a similar fashion when it comes to improving purchase intention over trust. This study intends to address the research gap and provide recommendations to shopping websites on how to deal with customers with different sets of web skills.

3.5.5.1. Web Skills

The web skills of customers will be tested as a moderator in terms of the relationship between trust and purchase intention in this study. The review of the literature has identified the necessity of employing the web skills of customers as a moderator to determine customer purchase intention based on their trust. In the online shopping context, research studies undertaken by Jarvenpaa, Tractinsky and Saarinen (1999), Novak, Huffman and Duhachek (2003), Hoffman and Novak (2009) and Rose *et al.* (2012) have explained the effects of customer web or Internet shopping skills. Customers' web skills are suggested to be largely associated with the flow concept, which is referred to as a cognitive experiential state. As discussed in the literature review chapter, these skills are subjective and bound to differ from customer to

customer based on their interpersonal skills, e-literacy and so on. Customers with high web skills are usually found to be proactive over shopping websites (Koufaris, 2002; Ding *et al.*, 2010; Rose *et al.*, 2012).

There is some simple logic that could explain the moderation effects of customer web skills on the relationship between trust and purchase intention. Customers who possess high levels of web skills tend to be more precise in judging the trustworthiness of shopping websites. They can differentiate the trustworthy websites from less trusted websites more accurately based on factors such as information quality, system quality and service quality. Also, the literature suggests that customer skill could influence their satisfaction (Ding *et al.*, 2010). To improve purchase intention with a given shopping website, highly skilled and less skilled customers would behave differently as their cognitive and experiential understanding of the three quality factors differ (Rose *et al.*, 2012). Customers with fewer web skills could hesitate and may not be fully ready to make the purchase even though they are aware of the trustworthiness of the given shopping website, whereas skilled customers would not rely on third-party sources but rather on their own understanding to make decisions. To examine this issue, the current research postulates that:

> ***H5:*** *The impact of trust in vendor on online purchase intention is moderated by web skills, such that as trust in vendor increases and the degree of web skills increases, the effect of trust in vendor on online purchase intention becomes more positive.*

In order to reduce any possible variations that might arise due to the differences amongst the sample respondents in terms of their shopping experience, the present study has employed frequency of shopping as a control variable when examining the effects of trust in the online context (Wani *et al.*, 2017). Frequency of shopping has been suggested to influence online customer behaviour across the different product contexts and to influence customer perceptions over different modes of web informational channels (Zhou and Wang, 2014; Zhang *et al.*, 2017). In addition, to compensate for the moderating effects of customer web skills, which could sometimes vary according to the level of shopping experience, the present study has incorporated this control variable.

3.6. Chapter Summary

The current chapter has explained the development of the conceptual model and how it has been adapted from the two existing theories. This chapter has also discussed the principles of the two background theories, and the necessity of their integration to address the gaps identified by this research. The chapter has thus presented the conceptual framework based on the combined theorization from ISSM and SCT. The role of ISSM has been explained as supporting the quality antecedents theorized within this research. Whereas, the SCT has provided support to the dependent constructs of the current model. The conceptualization that is derived from the two theories enables the current study to examine the effects of the three quality antecedents on customer trust and the effect of the trust on customer purchase intention. The chapter has also provided conceptual and empirical support to the model relationships, including the moderation effects of customer web skills. Overall, the current chapter has presented the theoretical and logical rationale for the current conceptual model and its relationships.

CHAPTER 4 RESEARCH METHODOLOGY

4.1. Introduction

The previous chapter has conceptualized a model to inspect the effects of certain antecedent constructs on online customer trust in shopping websites and online purchase intention. This chapter determines and implements appropriate methods and techniques to test the proposed hypotheses and relationships conceptualized in the previous chapter. The current chapter identifies and discusses the most appropriate research methods to complement the conceptual model developed in Chapter 3. This is an explanatory project attempting to examine existing theories or models or the extension of existing theories with appropriate conceptualizations. Thus, the current study is going to be based on quantitative and deductive research that will test the relationships formulated based on existing theories. The theoretical and conceptual assumptions from the previous chapters will be addressed in the current chapter with the formulation of an appropriate philosophical stance and methodological research approach, as well as suitable data collection and data analysis methods.

Section 4.2 outlines the various research philosophies and justifies the philosophical position taken by the researcher to conduct the current research. Sections 4.3 and 4.4 explain the nature of the present research by presenting a suitable approach that could allow the empirical examination of the construct relationships mentioned previously. Section 4.5 presents the unit of analysis, while section 4.6 describes the design of the present research. Section 4.7 presents a detailed description of the data collection methods employed to validate the conceptualizations and assumptions made by the study. Section 4.8 outlines the pre reliability tests and validity measures taken by the study. Sections 4.9 and 4.10 describe the target population and sampling procedure, including the sampling frame, and sampling technique and sample size. Section 4.11 specifies the precautions considered by this research to deal with the prominent concern of common method variance. Section 4.12 presents the ethical considerations taken by this research. Section 4.13 provides the measurement model assessment details. Section 4.14 presents the preliminary data analysis techniques used by this research to explain the fit of the data. Finally, section 4.15 is dedicated to the structural equation modelling which is the analysis method for the present study.

4.2. Research Philosophy

Of the possible epistemologies (i.e., positivism, interpretivism and critical realism), Lee (1991, pp. 343–344) says "*a positivist approach involves the manipulation of theoretical propositions using the rules of formal logic and the rules of hypothetico-deductive logic so that the theoretical propositions satisfy the four requirements of falsifiability, logical consistency, relative explanatory power and survival* ". Further, the axiological assumption emphasizes the role of the researcher's subjective values when undertaking research (Collis and Hussey, 2009). It is important to comprehend the role of personal values in various phases of the research process (Hirschman, 1986; Greenbank, 2003; McLachlan and Garcia, 2015; Rowe, 2018) because the choices of a researcher in terms of their ontological and epistemological position could be influenced by the researcher's competency and personal values (Greenbank, 2003).

The research philosophy adopted by a research study contains relevant assumptions through which the researcher visualizes the world (Saunders, Lewis and Thornhill, 2019). Research philosophy can be referred to as the improvement of research assumption, knowledge, and the nature of the research (Saunders, Lewis and Thornhill, 2007, 2019; Foss and Hallberg, 2014). Thus, the philosophical choices that are made determine the critical aspects of the problem addressed by a study, in terms of formulation of research strategy, data collection and analysis (Saunders, Lewis and Thornhill, 2012). Hirschman (1986, p. 238) specifies that "*scientific philosophies are based on a set of primary assumptions that are accepted on faith; that is, they are based on beliefs about the nature of reality whose truth or falsity is not subject to empirical test*". The critical concern is not about whether the research should be theoretically informed; instead, it is about identifying methods and tools that could help the study to address the question of interest (Davis and Marquis, 2005; Saunders, Lewis and Thornhill, 2012; McLachlan and Garcia, 2015). These ideas are pertinent in the current study context, which intends to explain the effects of three quality factors of an IS on online customer trust, because the primary purpose of social research is to study how well the existing philosophical alternatives are reflected and how well they have been defended concerning the substitutes the research could have embraced (Hirschman, 1986). This aspect is also clarified by Hirschman (1986) who states that just as the concept of marketing has evolved with the perceptions of people and their needs over the years, so have the methods of knowledge gathering to address the recent problems. Thus, what is important is that the inputs from the traditional humanistic modes of

inquiry are explicitly adapted to address socially constructed phenomena, such as the study of online customer behaviour (Hirschman, 1985; Arend, 2003; Powell, 2003). The forthcoming sections will identify the appropriate philosophy that could help the researcher address the concerns of this research. The choice of philosophy made by the researcher in this section will be directed towards the selection of methods and techniques that will allow for data collection in an effective and meaningful manner. On the other hand, to test the conceptual model developed for this study, the selection of the right philosophy will undeniably play an important role. The following sections will first discuss the different potential research approaches and then identify the most suitable approach for the current research.

4.2.1. Positivist Research

Positivism emphasizes that the social world reflects the natural world. The positivist epistemology suggests that knowable or measurable degrees of objective knowledge can be achieved using the correct scientific methods (Hirschman, 1986; Hunt, 1991; Saunders, Lewis and Thornhill, 2012). On the other hand, a positivist ontology stresses that the objective reality is out there to be found through the experiential knowledge of a natural phenomenon (Chen and Hirschheim, 2004; Hanson and Grimmer, 2007; Saunders, Lewis and Thornhill, 2019). This definition insists that reality needs to be understood through the knowledge acquired from the subjects that are involved in a phenomenon. Positivist research typically attempts to validate theory to improve the predictive understanding of the phenomenon (Orlikowski and Baroudi, 1991; Chen and Hirschheim, 2004). Positivist research assumes that knowledge can be measured by numbers and figures (Spender, 1996; Chiva and Alegre, 2005). The positivist approach usually distinguishes independent and dependent variables to elucidate and predict their occurrence under study (Cassell and Symon, 1994; Ngwenyama and Lee, 1997). Generally speaking, positivist approaches, including laboratory experiments and survey-oriented research, are intended for theory and hypothesis testing. This kind of research primarily uses quantifiable data but can utilize qualitative data as well (Powell, Lovallo and Fox, 2011). An understanding of philosophical assumptions is of tremendous significance for researchers (Orlikowski and Baroudi, 1991; Leitch, Hill and Harrison, 2010; Behfar and Okhuysen, 2018), as this understanding helps to identify the research approach as well as the particular methods selected by researchers as part of that approach (Calder, 1977; Hirschman, 1986). Accordingly, the positivist paradigm must

be further discussed to comprehend its ontological, epistemological, axiological, and methodological philosophical assumptions (Bryman and Bell, 2015).

A positivist approach is concerned about validity, rigour and replicability (Hunt, 1991). However, positivism is criticized for its disregard for historical and contextual conditions and its deterministic descriptions of phenomena (Orlikowski and Baroudi, 1991; Lee, 1999). It is necessary to employ the right methods when the researcher considers using this approach. Mauthner and Doucet (2003, p. 413) suggest that "*data analysis methods are not just neutral techniques. They reflect, and are imbued with, theoretical, epistemological and ontological assumptions – including conceptions of subjects and subjectivities, and understandings of how knowledge is constructed and produced*". The question of whether social reality is real is often asked in discussions about ontological existence. From this perspective, social reality can be further categorized into objectivism and subjectivism (Brannick and Coghlan, 2007; Cunliffe, 2011). Objectivism (or realism) specifies that social reality is external and objective in nature. It occurs regardless of the researcher's knowledge about its existence and characteristics. Researchers can get to know about it only when it is discovered (Cunliffe, 2011). However, subjectivism emphasizes that social reality is created or anticipated by the researcher's insight and understanding (Zachar and Leong, 1992; Cunliffe, 2011). Therefore, it is evident that researchers who adopt the positivist paradigm consider objectivism as an ontological assumption, which stresses that social reality is objective and external to the researcher (Powell, Lovallo and Fox, 2011; Zyphur and Pierides, 2020b). The current research is concerned with hypotheses regarding the relationship between the independent variables (i.e., information quality, system quality and service quality) and the dependent variables (trust in vendor and online purchase intentions) of the proposed conceptual model, and is supported by theoretical justification rather than the researcher's beliefs and assumptions; therefore, objectivism is a more appropriate form of ontological research for such a study (Cunliffe, 2011).

Positivist epistemological assumption stresses that what is considered by the researcher as adequate knowledge needs to be derived from observables (Hunt, 1991; Cook and Brown, 1999). This is all about determining the link between the researcher and what needs to be researched. For a positivist approach, researchers need to formulate their research formally, use passive voice, assimilate quantitative terms and embrace conventional definitions (Collis and Hussey, 2009). Finally, methodological assumption

identifies the process of research (Edmondson and Mcmanus, 2007). The positivist paradigm stresses the following stages of the research process: deduction of hypothesis, operationalization, reductionism, analysis, and generalization (Zyphur and Pierides, 2020a). Positivist researchers distinguish how the objective of a theory is to formulate hypotheses that can be validated and thus produce explanations of laws to be assessed (Dubé and Paré, 2003; Zyphur and Pierides, 2020b). Thus, positivism appears to be the best choice for the current study, because the research involves the development and validation of a conceptual model that has been built using the causalities adapted from existing theories, ISSM and SCT. To address the research question, the project therefore requires observable and quantifiable data to test the theoretical integration of the construct relationships.

Positivist research ensures that concepts can be operationalized or measured using quantitative methods in their simplest form (Zyphur and Pierides, 2020a, 2020b). The current study is mainly concerned about the influence of one variable on others, which is in other words the cause-and-effect relationship between the variables (Godfrey and Hill, 1995; Behfar and Okhuysen, 2018; Zyphur and Pierides, 2020b). Such research prefers to undertake a cross-sectional design of data gathering when there is not enough resource, and the timeframe of collecting data is somewhat limited (Collis and Hussey, 2009). However, it would not be sensible to ignore other options as they have their own merit, but it is essential to understand their suitability for this research. Also, given the deductive nature of the present study and the need to meet the research objectives, a model that has been built from existing theoretical assumptions must be tested and validated. This research study needs to examine the hypotheses formulated in the last chapter, and for this purpose data needs to be collected from selected respondents.

4.2.2. Interpretive Research

Even though positivism is considered as a more favourable choice of philosophy for the current study, one must not ignore the fact that interpretivism is gaining popularity in this field. Following their observation of the existing literature in the field of MIS research, a number of studies (Walsham, 1995; Chen and Hirschheim, 2004; Leitch, Hill and Harrison, 2010) have suggested that the epistemological choice between interpretivism and positivism is an important issue for IS researchers. Unlike positivist research, interpretive research focuses on subjective knowledge acquisition (Saunders, Lewis and Thornhill, 2009, 2012; Durcikova, Lee and Brown, 2018). In contrast to positivism, interpretivist research emphasizes that the social world does not mirror the

natural world but is instead a product of social actors and processes and hence needs a dissimilar positioning. Leitch, Hill and Harrison (2010, p. 69) state that "*interpretivism is based on a life-world ontology, which argues that all observations are theory- and value-laden and the investigation of the social world is not, and cannot be, the pursuit of detached, objective truth*". Therefore, interpretive researchers try to optimize the distance between the researcher and the object being researched (Chen and Hirschheim, 2004).

Interpretive research mainly relies on qualitative data; however, sometimes, it gains an advantage from using quantitative data as well (Chen and Hirschheim, 2004; Leitch, Hill and Harrison, 2010; Goldkuhl, 2012). Unlike a positivist research approach, interpretive research implements an inductive approach that initiates with data and attempts to develop a theory about the existence of interest using the observed data (Leitch, Hill and Harrison, 2010; Gioia, Corley and Hamilton, 2013). With interpretive research, the focus is more towards constructivism, where there is no specified objective or reality (Cassell and Symon, 1994). Critics of interpretivism comment on the context where the participants' intentions are inconsistent with their actual behaviour, and the idea that bias may be introduced by researchers' interpretations (Orlikowski and Baroudi, 1991; Leitch, Hill and Harrison, 2010; Saunders, Lewis and Thornhill, 2012). This is indeed in contrast to the positivist approach, where the researcher largely depends on objective knowledge. Though interpretivism is a dynamic paradigm for research studies, for the current research it cannot be beneficial, as the researcher needs to test existing theories rather than introduce a new one. Further, the constructs and relationships employed in the current study are very well established and thoroughly tested in different contexts of IS research, including the online shopping context. The current study has collected enough empirical research that explains these construct relationships (see Chapter 2). Also, the theoretical concepts providing the background for the current study, ISSM and SCT, are popular and have been empirically examined several times. Thus, the use of an interpretive approach for testing such relationships may not produce any new insights either from a construct or theoretical perspective. Besides, the integration of the two theories is needed to explain a particular piece of objective knowledge in order to address the problem identified by this study and to offer generalizations.

4.2.3. Critical Realism

The final stance of epistemological philosophy is critical realism, which is different from positivism and interpretivism as it aims to critique the status quo to transform the social phenomena being examined and overcome unfair social relations that cause separation and authority (Fairclough, 2005). Therefore, critical realist epistemology pays attention to contradictions in the existing society to resolve the social disparity (Leitch, Hill and Harrison, 2010). However, this epistemology has been criticized at times for its specific focus on economic factors and deterministic postulations (Orlikowski and Baroudi, 1991). It appears that the present research may not be successfully addressed using this philosophy, and there is scholarly evidence to support this notion. Madill, Jordan and Shirley (2000) suggest that critical realism reflects an inherent subjectivity in the development of knowledge, whereas the current study relies on examining the objective reality derived from existing theories. Thus, adopting such a philosophical stance would not be of value to the current research.

4.2.4 Selecting the Positivist Approach for this Research

It is suggested that the methodological choice of the researcher must be determined by the philosophical position of the researcher and the phenomenon in question (Holden and Lynch, 2004). Positivist research is based on the drifts of the quantitative data, the inclinations of hypothesis testing, and is supported by highly specific and concise data, and it is believed to be a feasible choice to be used for this research. In contrast, interpretive epistemology is mostly concerned with the complexity of the human senses, and this makes it a more appropriate philosophy for use with a qualitative methodology (Hudson and Ozanne, 1988; Leitch, Hill and Harrison, 2010). Likewise, as critical realism is linked with inconsistencies in the existing society to resolve social disparity, it cannot be an appropriate philosophy for the current study. Thus, it is strongly believed that the positivist paradigm is the most appropriate choice for this thesis due to its nature and context.

IS research is well established with a vast number of research studies explaining IS user behaviour. IS research has witnessed the theoretical application of theories derived from customer behavioural psychology and sociology. There are IS-related models, such as ISSM, TAM, UTAUT, WebQual, and e-SERVQUAL, which were built to explain online user or customer behaviour. The current study is focused mainly on exploring the effect of a relevant set of variables to determine online customers' trust in shopping sites and their purchase intentions. The antecedent constructs of this study are

constituted to explain the customers' trust and purchase intentions for shopping sites by using a theoretical model adopted from two existing IS communication theorizations relating to information systems success and source credibility. Thus, for the current study, the researcher needs to use a positivist lens to validate the conceptualizations made using the two adopted background theories (Chang, Liu and Shen, 2017; Zeithaml *et al.*, 2020). Besides, the current study largely represents the trust in communication relationship between online shopping vendors and customers.

The current study's focus is to explain the role of the three quality factors – information quality, system quality, and service quality – in determining customer trust and purchase intention based on a specific understanding of the success of a shopping site that signals its expertise, dynamism and trustworthiness. As previously explained in Chapters 1, 2, and 3, ISSM and SCT are providing background support to the current study to address the issues identified. The integrated conceptual model developed for this thesis has hypothesized causal paths between the three quality factors, customer trust and customer purchase intention. To validate a conceptual model, the current study requires objective quantifiable data from a portion of the online customer population, which could confirm the assumptions made by this research concerning the construct relationships in the light of the combined theorizations. This description suggests the deductive nature of the current study for which a positivist paradigm is an ideal choice (Leitch, Hill and Harrison, 2010; Shepherd and Sutcliffe, 2011).

In addition to the main research, as previously discussed in Chapters 1 and 2, the present research has also employed two statistical review methods. A subjective exploratory methodology is the paradigm for these two methods for knowledge acquisition, since the aim is to acquire knowledge from selected quantitative research studies. As discussed previously, the role of these two methods is to provide a synthesized understanding of the effects of the focus constructs and relationships from a selected pool of research studies. Thus, such a knowledge accumulation could represent a subjective approach, as it is a qualitative process that is applied to quantitative studies. Further, based on the results obtained from those review methods, the present study has planned a positivist objective investigation to address the gaps proposed by this research.

Having justified the choice of philosophy, the next section will discuss the current research approach. As this project is a positivist research study, the approach and methods used will be closely related to positivist research philosophy.

4.3. Deductive vs. Inductive Approach

The deductive approach is generally linked to what can be perceived about a systematic investigation, which generally includes the advancement of an existing theory by exposing it to a vigorous assessment. Notably, it is a prominent means of investigation in the study of natural sciences where laws provide the foundation for clarification, and allow the expectancy of phenomena, envisage their existence and hence allow them to be organized (Chen and Hirschheim, 2004; Collis and Hussey, 2009). Robson (2002) suggests five progressive phases by which a deductive approach can advance: **[i]** by developing a hypothesis based on an existing theory or theories, **[ii]** by formulation of assumptions in operational terms, **[iii]** by examining the hypothesis using the data collected from a subset of the population, **[iv]** by explaining the findings to address the problem identified and **[v],** if necessary, by upgrading the theory according to the results achieved. A further effort is then made to confirm the amended theory by reverting to the initial step and reiterating the entire progression. The deductive approach has several significant features. The first of them is that this approach allows for the explication of causal effects between constructs. Second, to follow the principle of scientific rigour, the deductive approach directs that the researcher should be liberated from what they need to observe. Third, the constructs will be operationalized and assessed based on the objective knowledge gathered quantitatively (Behfar and Okhuysen, 2018). Finally, the deductive approach is supposed to be generalizable, and for this to happen, it is expected that the sample is of sufficient numerical size (Saunders, Lewis and Thornhill, 2012).

An alternative way of conducting research is through the adoption of an inductive approach. The purpose of such an approach generally is to understand what is going on in order to better comprehend the nature of the problem through subjective knowledge (Locke, 2007; Shepherd and Sutcliffe, 2011; Behfar and Okhuysen, 2018). The task would then need to make sense of the data gathered through an interview process by analyzing and organizing such data. The formulation of the theory would be the outcome of this analysis, which is not the purpose of the current research. Inductive, approach-oriented research is specifically related to the setting where such events are conducted. Therefore, the inductive approach is primarily associated with the qualitative

interpretive methodology, which involves developing a new theory (Gioia, Corley and Hamilton, 2013). The current research is not working on the formulation of theory but is designed to test causal relationships between variables using quantitative data. Thus, the deductive approach will be more appropriate and useful for this kind of research. Further, the deductive approach is most suitable with studies that adopt a positivist philosophy involving the testing of an existing theory or theories (Shepherd and Sutcliffe, 2011; Agag and El-Masry, 2016), in the form of validating the conceptual models that explore conceptual interactions between constructs of interest. This can be seen in the case of the current study, which has built a conceptual model with the constructs and theorizations adapted from two existing theories.

Further, Bagozzi (1979) characterizes the two types of research as follows: exploratory research represents the theoretical domain, while explanatory research represents the operational domain. Malhotra and Grover (1998) differentiate the two types of research study by suggesting that exploratory research involves a deeper understanding of the topic and the development of new concepts and theories, usually without any model development and hypotheses formulation, whereas explanatory research deals with the empirical examination of the existing theories. The latter type of study usually examines the causal relationships between the constructs in a model derived from an existing theory or theories. Thus, studies that aim to introduce new concepts and theories would provide a deeper understanding of the concepts rather than explaining their interactions using qualitative data.

Thus, the characteristics of the current study reflect a positivist deductive philosophy. The next section will further explain the reasoning for the positivist philosophical stance adopted by the current research.

4.4. Qualitative vs. Quantitative Research

From a broader perspective, quantitative and qualitative methods are two well-known research approaches. Quantitative research is often linked to the objective ontological position, a positivist epistemological alignment and a deductive approach. In contrast, qualitative research generally considers a subjective ontological position and an inductive approach (Bryman, 1984; Kaplan and Duchon, 1988). The qualitative approach utilizes quantification in collecting information that is used to test a theory. Quantitative research reviews the relationships between variables, which means that the data is presented in a numerical form and is assessed through various statistical

techniques (Eisenhardt, 1989). Conversely, in qualitative research, the phenomena are difficult to quantify or cannot be quantified and hence the analysis focuses typically on words and themes and is represented using observations and documents. Quantitative research is more valuable for assessing propositions or hypotheses, as in confirmatory analyses, whereas qualitative research is considered more suitable for discovery, as in exploratory situations (Bryman, 1984; Eisenhardt, 1989).

There are research studies that are found in the online shopping literature that represent different behavioural theories including TRA and TPB, Social Cognitive Theory, and Social Learning Theory (Bian and Forsythe, 2012; Bianchi and Andrews, 2012; Andrews and Bianchi, 2013; Ashraf, Razzaque and Thongpapanl, 2016). Technology use and acceptance theorizations also feature, such as UTAUT and TAM (Venkatesh *et al.*, 2011; Venkatesh, Thong and Xu, 2012; Chen *et al.*, 2016). Psychological theories represented in the literature include the Theory of Trust, Commitment–Trust Theory, Balance Theory, Value Theory and Loyalty Theory (Beldad, De Jong and Steehouder, 2010; Chen and Dibb, 2010; J. V. Chen *et al.*, 2015; Agag and El-Masry, 2017; Banerjee, Bhattacharyya and Bose, 2017), while other studies focus on the Theory of Marketing (Bello, Katsikeas and Robson, 2010; Ashraf, Thongpapanl and Auh, 2014; Bhargave, Mantonakis and White, 2016; Gölgeci *et al.*, 2019; Algharabat and Rana, 2020). These aforementioned research studies are quantitative in nature, and they have examined online customer beliefs, attitudes, and purchase behaviours using different antecedents. Quantitative research studies such as these have provided knowledge on online customer and IS user behaviour based on the aforementioned theories. Generalizations provided by these studies have provided objective insights which have been used by research scholars and site developers to create sites for the benefit of online shopping customers.

While quantitative research offers summary information on various characteristics and hence is considered useful for tracing trends, qualitative research provides detailed information on certain characteristics and is useful for discovering hidden motivations and values (Alvesson and Kärreman, 2007; Laumer, Maier and Weitzel, 2017; Foroudi *et al.*, 2018). Besides, quantitative research involves more structured data gathering using controlled measurement. The quantitative methodology is also ideal for studies that are required to generalize their findings, specifically, the studies that test existing theories to address gaps in the literature (Payne and Williams, 2005; Gibson, 2017; Carvalho *et al.*, 2019). Moreover, building new theories is more likely to be associated

with qualitative methodology (Bryman, 1984). In contrast to quantitative research, qualitative research encompasses more unstructured and real-life approaches that need subjective interpretation. Also, the researchers' stance usually differs between qualitative and quantitative research studies. Qualitative research generally places greater stress on the credibility of respondents and the researcher is considered very much a part of the research acquiring an 'insider' viewpoint (Jankowicz, 2005; Bryman and Bell, 2007; McDaniel and Gates, 2010), whereas in quantitative methodology, researchers do not try to influence the respondents' responses but rather observe the reality, acting as a stranger.

There are various methods through which the data for quantitative research can be gathered, such as experiments, surveys, observations and personal interviews. Among these options, surveys are a useful method of data collection to form a large sample in a limited period and they enable standardization and uniformity of wording and sequencing of questions (Thambusamy and Palvia, 2020). The questions in the surveys generally tend to be comprised of closed questions, and there are different types including postal surveys, telephone surveys, electronic or online surveys or in-person surveys (Fowler, 2009). Surveys are the most useful tool for data collection in quantitative studies that gather information from a selected sample that represent a population of interest. By collecting the data and analyzing the data received from such a sample, a quantitative study could be able to generalize knowledge to the population of interest (Pinsonneault and Kraemer, 1993).

Surveys can be either cross-sectional or longitudinal in nature. A cross-sectional survey usually collects data at one point in time to capture the respondents' intentions and perceptions at that moment. Whereas, a longitudinal survey collects data multiple times in a set period to observe the changes in intentions and perceptions over time (Bryman and Bell, 2007; Bhattacherjee, 2012; Saunders, Lewis and Thornhill, 2012). Marketing practitioners, academics and researchers most often tend to use cross-sectional surveys, as it is likely to benefit them with reduced costs, improved respondents' cooperation and quick analysis (Rindfleisch *et al.*, 2008). Even in this specific research setting, the studies that represent the online shopping context use the survey as the most popular method of data collection. Given its advantages include the ease of generalizability, this could be the reason why it has been mostly used. The survey allows the researchers to understand what consumers think of constructs at a given point of time. Thus, the respondents provide the information with no pre- or post-association with the researcher

and the study being conducted. A large number of studies have collected data using a cross-sectional survey technique. More precisely, the cross-sectional survey technique seems useful particularly in examining online customer behaviour. Several studies on online shopping, for example Ba and Pavlou (2002), Eisingerich *et al.* (2015), Clemons *et al.* (2016), Darke *et al.* (2016) and Mallapragada, Chandukala and Liu (2016), have successfully adapted the cross-sectional survey approach for their research studies.

Experimental studies use a tightly controlled setting allowing researchers to manipulate independent variables and control for additional variables. However, survey methods allow for a degree of generalization not suitable in experiments. Secondary analysis (e.g., meta-analysis) of the existing data could be considered as another alternative quantitative method, which requires collecting data from the available studies in a particular area of research and analysis; for example, this exercise could be performed to understand the cumulative impact of one variable onto another (Bhattacherjee, 2012). Interviews in their structured format can also be used for analyzing quantitative data where the interviewer asks the questions and records the answers. In this format, all respondents have been provided with a uniformly structured survey, which can be implemented by asking respondents the same set of questions in the same order and these questions are precise with a fixed set of responses (Bryman and Bell, 2011).

Moreover, qualitative data can also be gathered using various methods. Interviews are a more adapted form of data collection which could typically take place in an unstructured or semi-structured format. In contrast to a questionnaire, the interview may encompass particular instructions so that the interviewer can record personal remarks and comments. The interview provides different views of the same question from participants belonging to different socio-economic backgrounds. Moreover, in contrast to mail surveys, the interviewer can clarify any concern or issue raised by the interviewee. Similarly, the interviewer can also ask any follow-up questions that could be pertinent and related to the key question. Nevertheless, interviews are time-consuming and resource intensive. The most usual forms of interviews are personal or face-to-face interviews, focus groups, and telephone interviews (Bhattacherjee, 2012). As the qualitative research approach is based on words rather than numbers (Miles and Huberman, 1994), the interview may not be a suitable method of data collection for the current research. In addition to this, qualitative studies found in the literature, for example Oberecker, Riefler and Diamantopoulos (2008), Beldad, De Jong and Steehouder (2010), Tsai *et al.* (2011), Safari, Thilenius and Hadjikhani (2013) and

Filieri (2016), were all concerned with new conceptualizations, new theory developments, or a review of the existing quantitative studies. For instance, Oberecker, Riefler and Diamantopoulos (2008) dealt with conceptualizing the construct of affinity in the e-commerce marketing context, whereas Beldad, De Jong and Steehouder (2010) conducted a literature review which proposed the antecedents of trust in e-commerce. So, the use of a qualitative approach to examine customer behaviour is not seen very often in online shopping literature.

With regards to the other interview formats, the effectiveness of focus groups could be restricted by strong characters who dominate the discussion, and some other participants may not get the opportunity to put forward their views at all (Bryman and Bell, 2007; Collis and Hussey, 2009; Bhattacherjee, 2012; Saunders, Lewis and Thornhill, 2012). Case studies can be used to discuss phenomena, develop theory and to determine theoretical concepts and relationships (Irani *et al.*, 1999). Case studies can have as a unit of analysis an individual, an occurrence, a particular organization or a community (Myers, 1997). Adopting a case study may be appropriate when the research question is derived using 'how' and 'why' questions, rather than 'how many', 'how much', 'where' and 'how often', which is not quite relevant to the current case. Although the focus of research based on a case study is concentrated more on qualitative data, both qualitative as well as quantitative data can be used as different sources of information (Yin, 1993). As it is evident that the two fundamental approaches can be used for any research, the choice of approach in this study will now be justified.

4.4.1. Preferred Research Method

The quantitative approach has been identified as the most appropriate option for the current research, as it provides ease and efficiency to the data collection process that is required in order to validate the conceptual model and to generalize the results. Hypothesis testing, measurement of variables and generalizable extrapolations characterize positivist research (Orlikowski and Baroudi, 1991). Chapter 3 has conceptualized the proposed research model in terms of the theoretical underpinning. It has also provided the empirical justification to examine the factors influencing consumers' online purchase intentions in the UK context and the need to generalize results to the population of online customers. Therefore, a positivist epistemology, an objective ontological position and a deductive approach are the best options for this research. Surveys are found to be the most suitable method of data collection across the studies on consumers' online intention and behaviour (e.g., Ha and Stoel, 2009;

McCole, Ramsey and Williams, 2010; Pascual-Miguel, Agudo-Peregrina and Chaparro-Peláez, 2015; Chen *et al.*, 2016). The majority of studies that have examined online consumer behaviour have used a survey approach to validate their models. The characteristics and advantages associated with the survey approach make it a favourite method for data collection from large samples. However, it is essential to understand whether or not the selection of the survey as the data collection tool is appropriate for the current research. The advantages, such as faster response times and fewer resource requirements, may compel the researcher to adopt this approach. Nevertheless, one must ensure that it allows the researcher to collect and validate the correct data to make appropriate conclusions.

There are several reasons that support the selection of the survey as the data collection tool for this study. Comparatively speaking, when considering the other methods – such as case studies or observations – the survey is an ideal means of data collection in this scenario. In a survey, the key objective is to test the existing theory by examining the causal relationships between constructs (Bhattacherjee, 2012). This is the objective of the current doctoral research, in which the formulated hypotheses advance causal relationships between constructs in a conceptual model derived from two background theories. Another strength of the survey is its ability to evaluate an enormous variety of unobservable data, including users' preferences, attitudes, beliefs and behaviours, or any other information over the observable units, that makes the quantitative approach a preferable research method for data collection method in this thesis. However, case studies include the evaluation of the phenomenon where the time and scope of evaluation can be controlled. This method is most appropriate when researchers are interested in the relationship between perspective and the phenomenon of concern (Pinsonneault and Kraemer, 1993). Although focus groups can be considered as a type of group interview, they are different in that they are designed to explore different themes or topics in depth, and they are not undertaken with the point of view of saving time or money. Moreover, the intention is to secure the contribution of members as a group rather than individuals. The role of a researcher in a focus group is more of a moderator than an interviewer. This also makes the quantitative survey method a preferable approach for the current research over the focus group approach, since the latter is generally associated with qualitative data.

The survey will be conveyed to the appropriate participants using online/email questionnaires and/or paper-based questionnaires where appropriate (Bhattacherjee,

2012). As this research intends to use probability sampling for data collection, where there is a need to provide equal opportunities to all the respondents from various backgrounds, age groups and locations, it is deemed appropriate to design both a paper-based questionnaire and online questionnaire.

4.5. Unit of Analysis

Specifying the unit of analysis is important for positivist deductive research studies, in order to clarify the importance and application of results for the research question that the study is aiming to answer (Hair *et al.*, 2010, 2014). Hair *et al.* (2014, p. 640) define the unit of analysis as the "*Level to which results apply*". The current study, by examining the effects of three quality factors on customer trust, is aiming to demonstrate that shopping sites could improve customer trust by showing their trustworthiness and credibility through the website quality. Providing this knowledge would help the shopping sites and customers to reduce their dependence on third-party sources which can sometimes negatively influence customer decision making. Alternatively, customers can determine the credibility of a shopping site from their first-hand cognitively learned credibility, which results from their own experience of using the shopping site without any third-party assistance. For this aim, the current study has built a conceptual model which is derived from two background theorizations, which needs to be validated using objective knowledge acquired from customers. Thus, the unit of analysis for this study will be the customers who interact with the shopping site. This study will gather the customers' perceptions of quality, which facilitate their understanding of the expertise, trustworthiness and dynamism of the site and help them to develop their trust in the given shopping site.

To elaborate further, the current conceptual model has its origins in website quality literature as well as in users' relationship trust and purchase behaviour literature. Therefore, the unit of analysis for this study must include both the study of information systems success in the online shopping context, and an exploration of customer trust and purchase intention development based on the understanding of site credibility. From the perspective of website success regarding the three quality factors or dimensions, this study is attempting to clarify how the quality of a shopping site could signal the experienced credibility of a shopping system to improve users' trust and their purchase intentions. To empirically test this understanding, this study will examine the effects of quality factors on online customers' trust and purchase intentions in a developed country context.

4.6. Research Design Process

A careful design strategy is needed to help achieve the aim and objectives of this research study while addressing the research problem and gaps. Saunders, Lewis and Thornhill (2009, 2019) have suggested that a clear research design is needed to explain the overall process of a study which is aimed towards providing new knowledge in a research focus area. The current study will conceptualize the relationships between three quality factors (i.e., information quality, system quality, and service quality), and customer trust and purchase intention. This relationship will be explained using the combined understanding adapted from ISSM and SCT ideologies. To accommodate the causal relationships between the constructs in a theory-driven manner, this study will design a conceptual model. The conceptual model is derived from the two background theories and the theoretical significance of this combined model will enable the research question to be answered, and the gaps identified by the study to be addressed. Besides, the logical reasoning between the construct relationships will be represented by hypotheses derived from the understanding received from the background theorizations, as well as the existing literature that has empirically validated those relationships. These hypotheses will then be tested with the data collected from selected samples to examine the assumptions made by this study concerning the theory and construct relationships.

The characteristics of the current study reflect a positivist deductive research design that receives theoretical support from the literature, based on which the study will build a conceptual model and hypotheses to explain the causal paths in the model. The positivist deductive design is strongly recommended as being suitable for research studies that rely on theory testing to provide new knowledge (Zyphur and Pierides, 2020b). The study will employ the structural equation modelling (SEM) method suggested by Byrne (2010) to test the conceptual model with the data collected from customer samples. This technique provides several useful and effective means of assessing the conceptual model in terms of data and model functioning and fitness. The technique will not only be able to explain the construct relationships and provide hypotheses testing but also generate deeper insights into customer behaviour based on the background theoretical understanding. The results obtained from the SEM will be discussed in line with the background theorization to address the research problem and to bridge the gaps identified in the current literature. The study will then provide contributions to theory and practice, and will suggest future research directions.

In summary, by adopting such a research design, the current study has carefully planned to conduct this research in order to achieve its stated aim and meet the prescribed research objectives. Figure 4.1 presents a tabular representation of the research design. The different phases presented in Figure 4.1 provide a brief summary of the individual chapters and their roles in the current research.

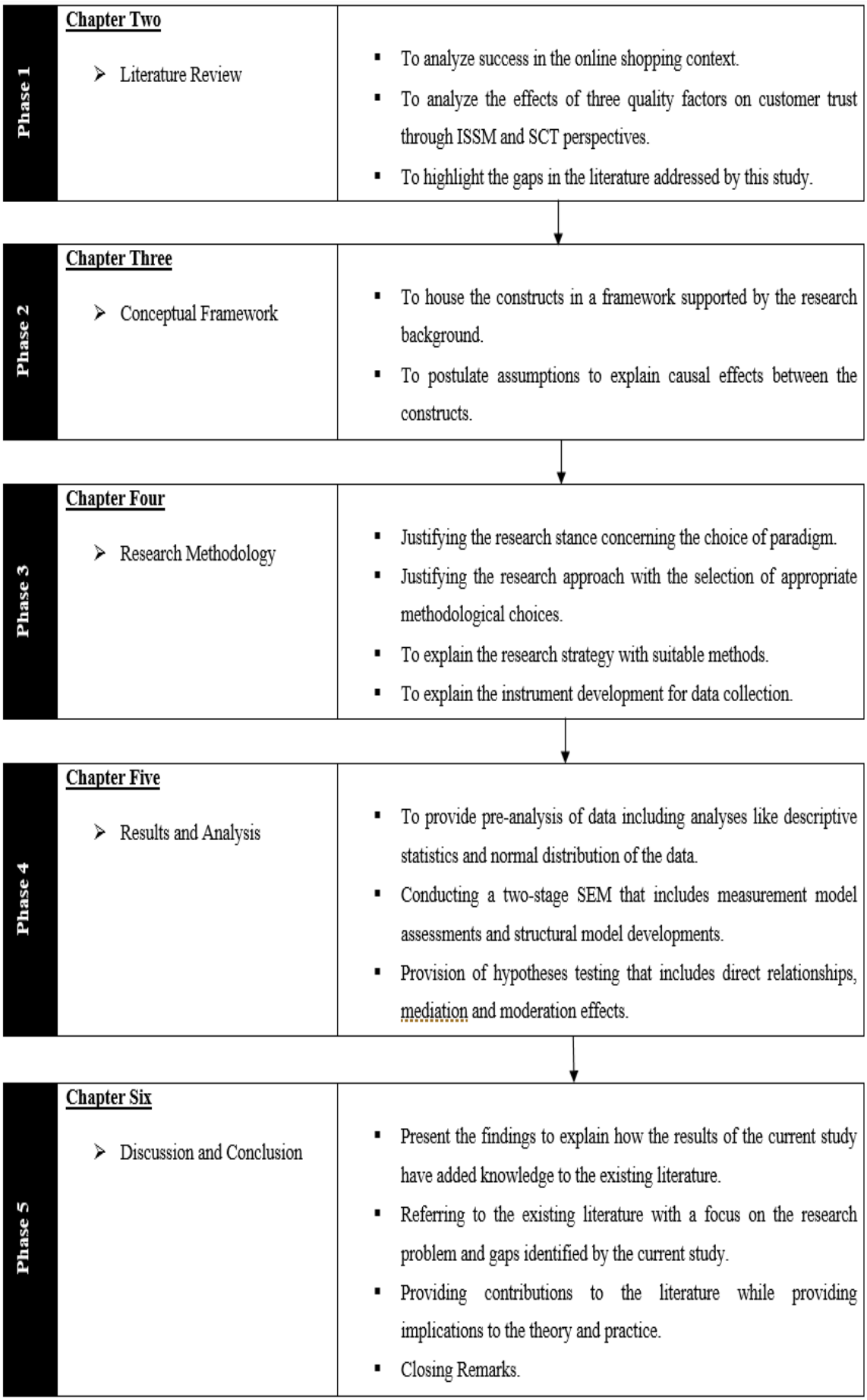


Figure 4.1. Research Design

4.7. Data Collection

Evaluating and identifying the appropriate philosophy and approach for the current study is vital. The right approach must employ the appropriate data collecting methods and tools to acquire the data needed to validate the conceptual model presented in the current research. The methods and tools selected to collect the data should be in tune with the philosophical stance of the researcher while being suitable for the nature of the current study. Thus, the current section will outline the methods employed by the researcher to conduct a positivistic deductive quantitative research study.

4.7.1. Questionnaire Design

Generally, to conduct a quantitative survey, it is essential to develop a survey instrument. Questionnaires are deemed to be a reasonable option for collecting quantitative data for this research study. Questionnaires are often used as part of a quantitative deductive approach (McKnight *et al.*, 2017; Hughes, Swaminathan and Brooks, 2019). Questionnaires could be seen as a planned technique of quantitative data collection which include a sequence of written or verbal questions so that the participants can provide their opinions (Orlikowski and Baroudi, 1991; Webb, 1992; Saunders, Lewis and Thornhill, 2009, 2012).

The first step in the design phase is to identify appropriate measurement scales that could explain the conceptual latent constructs included in the model of this study. The background theories of this study led the researcher to include constructs and relations that are shown in the conceptual model in the previous chapter. In this study, the researcher has developed hypotheses that suggest relationships between the variables that will help to address the gaps identified in the literature. Although all the constructs were taken from previous studies, their operationalization within the current conceptual model will only be possible if using the correct scale items. The constructs can then be operationalized into measurable variables. It is essential to carefully operationalize the constructs by allocating sufficient time to this process, as no further changes can be made once the data has been collected for the measurements specified for the given constructs (Bryman and Bell, 2007; Bhattacherjee, 2012). Constructs can be measured using survey questions and these are individually known as items. Items operate at the practical level and, when combined, they represent the construct as a variable (Bhattacherjee, 2012). Constructs with multiple items signify the strength of a construct (Churchill and Iacobucci, 2005).

4.7.2. Measurement Scale Development

The constructs used in building the current conceptual model are widely known and well explained in online shopping literature. Several studies have already empirically and thoroughly tested the current constructs under different scenarios. Selecting the items to examine the model constructs would not therefore be difficult. However, the use of unimportant measuring items may not be effective. The correct combination of measurement items must effect the operationalization of the model constructs in the context of the current research (Zyphur and Pierides, 2017, 2020a, 2020b). The researcher has taken the precautions suggested by Zyphur and Pierides (2017, 2020a, 2020b) to select the most suitable and reliable measuring items to represent the current model constructs of this study.

The current conceptual model incorporates six constructs, namely Information quality, System quality, Service quality, Trust in vendor, Online purchase intentions, and Web skills. Four items were adopted from Kim and Niehm (2009) to examine the information quality construct: information accuracy, timeliness, quality and relevance. These are the dimensions that are employed by this study to signal the source credibility and trustworthiness of a shopping website to explain customers' trust and purchase intentions with the web vendor. The aforementioned dimensions of information quality are important for online shopping purposes as they could clearly explain the experienced source credibility discussed in the previous chapters. The accuracy, timeliness, quality and relevance may not fully be explained through third-party signals such as e-WOM and the reputation of a web vendor (Kang and Namkung, 2019); customers could only fully understand these dimensions of information quality as a result of their first-hand experience of using a shopping system (Petter, DeLone and McLean, 2013; Tan, Wang and Tan, 2019). These dimensions of information quality could suggest a shopping system's expertise, dynamism and trustworthiness to explain customer trust. The quality dimensions could be understood as representing the success of a shopping system in terms of winning customers' trust to provoke their purchase intentions.

The next construct, system quality, will be examined using three measures adopted from DeLone and McLean (1992): ease of use of a website, the flexibility of learning and interaction quality. These dimensions of system quality were discussed in previous chapters, where it was explained that the system quality could represent the quality of an information system in a particular context, and specifically in the current context of

online shopping. As discussed, a shopping system acts as both an information provider and a transactional platform (Kim, Kim and Park, 2010; Kalia and Paul, 2021). The three dimensions of system quality are deemed to be necessary to fulfil these two purposes of a shopping website, because the three measuring dimensions used to examine system quality represent both informational as well as transactional aspects. This study assumes that it may not be practical to signal these dimensions of system quality through various third-party signalling practices (H. Li *et al.*, 2015; Tan, Wang and Tan, 2019), because a customer could only learn how easy and flexible a shopping system is based on his or her interaction with a shopping website. Thus, the interaction quality (system and design), in a way, acts as a key experienced-based signal that could build customer trust and purchase intention. This could also be seen as indicating the success of that shopping system.

Four items were adapted from Oliveira *et al.* (2017) to represent the service quality construct. The measures that are observed by this study are time taken, effort needed, the assistance offered, and the value received from a customer point of view. This selection has been made based on the conceptualizations of the construct service quality from the previous chapters that explain how fulfilling the transactional objectives of online customers builds customer trust. The conceptual role of service quality in accounting for information systems success (DeLone and McLean, 2003; Petter, DeLone and McLean, 2013) could be best explained with the aforementioned dimensions of service quality. These service concept dimensions are adapted from the brick-and-mortar context to explain online service for the improvement of the shopping experience as well as for enhancing customer trust and purchase intentions (Zeithaml *et al.*, 2020). Therefore, the service quality, which may be signalled sometimes by third-party sources to explain the trustworthiness of a shopping system (Filieri *et al.*, 2018; Casado-Aranda, Dimoka and Sánchez-Fernández, 2019), could enormously enhance online customers' beliefs, attitudes, and perceptions, particularly when customers perceive high levels of information and system quality through their first-hand experience. In a way, the service quality acts as a catalyst to building customers' trust and purchase intentions based on their perceptions of information and system quality.

The trust in vendor construct is being represented by five measuring items adopted from Fang *et al.* (2014) and Oliveira *et al.* (2017). These measures could test respondents' overall trust, based on their perceived trustworthiness, perceived reliability and perceived dependability of the online shopping vendor. These measures were selected

because they derive from a research study (Oliveira *et al.*, 2017) that examined overall trust by testing an assumption that it is possible to build customer overall trust in a shopping site through only three quality dimensions. The measures are arranged sequentially to test the overall quality while representing the three primary dimensions of trust: competence, integrity, and benevolence. As the overall conceptualization of this study has been developed from an existing model, information systems success, by including the additional dimensions of trust, this study could explain more firmly how the three quality dimensions signal the experienced credibility to explain online customer trust.

Four measurement items were adopted from Hausman and Siekpe (2009) and Oliveira *et al.* (2017) to examine online purchase intention, which is the decisive variable of the current conceptual model. The measuring items that represent the purchase intention construct in the current model play a conclusive role in explaining customer willingness and readiness to buy from an online shopping site (see Table 4.1 for details). Indeed, these four measures explain the intensity of willingness of a customer to depend on a shopping site for informational and transactional purposes, as discussed in the previous chapters. The arrangement of these items supports the ordinal nature of the construct measurement so that the participants' feelings could be explained more thoroughly.

The measuring items for web skills were adopted from Rose *et al.* (2012). Four items represent this construct (see Table 4.1 for details), which is acting as a moderator, as discussed in the previous chapter. Respondents' web skills were assumed to influence the relationship between customer trust and purchase intention in this study. Therefore, the measuring items associated with this construct need to examine how skillful the respondents are in terms of using web shopping systems for shopping purposes. Thus, the measurement dimensions of web skills justify the fact that differences in respondents' shopping experiences may not be determined by the amount of time they spend on shopping, but instead by the amount of confidence they show in online shopping which could represent their overall skills adapted from their use of Internet-based information systems. As a result, this construct could explain how the variances in customer experiential skills related to web use can influence the relationship between customer trust and purchase intention.

In addition to the model constructs, this study has also included a specific construct, the internal moral perspective, which is defined by Northouse (2013, p. 264) as "*a self-*

regulatory process whereby individuals use their internal moral standards and values to guide their behaviour rather than allow outside pressures to control them". This construct will be used in this study to address the common method bias issues that may arise. By using this construct as a marker variable, the researcher could avoid the concern of common method bias. Four items were adopted for this construct (Leroy *et al.*, 2015) (see Table 4.1 for details). This construct is not involved in any relationship with the model constructs of this study except for customer trust. The reason for selecting this construct is to understand online customer behaviour when customers interact with information systems. Particularly, the quality in the general context for human interactions (where information communicator and receiver are both humans) is very dissimilar to the quality based in a human–computer interaction (communication between a shopping site and customer). Thus, the selection of IMP is ideal for the present case as this construct has theoretically semantic links with customer trust; there is no conceptual similarity with the three quality antecedent dimensions of the current study. Sample members' responses for this construct could effectively identify the biases when trust is resulting from three quality factors in an IS–customer relationship. This is because the respondents' moral standards and values in a general human relationship could explain the method biases when trust is developing from information system quality. Therefore, the results of the current study could be useful in building ISs with more realistic (and humanistic) behaviour to improve online customer trust.

While selecting the set of items representing a particular construct, the researcher tried to adhere as closely as possible to the original study or studies that have proposed or used the given construct(s). To ensure consistency and to address the reliability and validity of used scales, the research relies on the papers that have thoroughly examined the constructs of the current model. Use of previously formulated and validated measures for a construct allows the researcher to cumulate knowledge and compare the performance of constructs across all such studies that might have used this construct (Boudreau, Gefen and Straub, 2001). For this research, items were selected by congregating all possible items for the given construct in the extant literature of the consumer behaviour studies, which confirmed the choice of items that were fully representative of the specified construct. The researcher was also careful in terms of the quality of the items collected from the previous papers. All the measuring scales were collected from the top journals identified by the Association of Business Schools (ABS) between 2015 and 2018 (using the ABS Academic Journal Guide that rates the top

international journals). The journals considered by the current study are largely from the online shopping literature. When there is any overlap of studies in terms of considering the same construct with minor variation in their items, this research carefully checked each situation and ensured that the most distinct and relevant set of items representing that construct was taken into consideration.

Further precautions were also taken to ensure the complete representation of the construct in question. Each one of the constructs was represented with at least three measuring items as recommended in the literature. At the same time, actions were taken to reduce any possible misunderstandings or phrasings. To address these points, this study carefully examined if all the items adopted by a study focusing on the construct of trust in the online store were similar to the ones that used the construct of trust in the vendor. If there was an instance in which the meaning of the question was found to be different, except for the wordings of 'online store' and 'vendor', and if it was found that a question created for trust in the online store can also represent an item for trust in the vendor, that item was included under the construct 'trust in vendor' by changing the wordings of the specific item to 'trust in a vendor'. For example, if an item was phrased as 'this store is trustworthy' (Heijden, Verhagen and Creemers, 2003) for an online store and there was no equivalent item for the 'trust in vendor' construct it was decided to include this item in the proposed construct by replacing the term 'store' by 'vendor'. Table 4.1 presents the constructs and their corresponding items with the sources from where the items have been adopted.

Interval level variables are similar to ordinal variables, except for the fact that the intervals between the values are equally spaced (Bhattacherjee, 2012), such as in the case of temperature. Statistical techniques such as structural equation modelling, which is based on the distance between quantitative points on a scale, require interval level data (Gill and Johnson, 2010). The Likert scale is the most commonly used form of response to the measurement of construct items (Garland, 1991). It is essential to consider the number of anchors when using a Likert scale. Both five-point and seven-point Likert scales are widely adopted in online shopping literature. When deciding on the number of anchors, it is imperative to consider whether the proposed research needs a mid-point in the anchors. The inclusion of a mid-point in the anchors ensures that the response is not skewed, as respondents may prefer to opt for a neutral choice in cases where they do not agree to either a positive or negative response (Churchill and Iacobucci, 2005; Bhattacherjee, 2012). As it has been argued that researchers should use

as wide a scale as possible, the seven-point Likert scale has been very successfully used in preventing any response bias, rather than the five-point Likert scale (Allen and Seaman, 2007). Based on the above discussions, it would be reasonable to say that a seven-point Likert scale would be the most suitable form of scale for the current study.

In reference to the selection of a response rating scale, Maurer and Pierce (1998) strongly recommend the use of Likert scales to improve the predictability of the responses while making the respondents' job easy and at the same time strengthening the generalizations of the findings. This study has employed a seven-point Likert scale as recommended by Maurer and Pierce (1998) and Leung (2011) to improve the reliability and validity of the responses and to improve the response rate with an increased self-efficacy of the respondents participating in the survey. Also, the seven-point Likert scale could give respondents enough choices to provide their knowledge regarding the questions of study interest. Compared to six and eight pointers, the seven-point option includes a neutral option, allowing the respondent to stay neutral in cases where they do not wish to respond positively or negatively to the question.

Table 4.1. Measurement Items for Selected Constructs for The Proposed Model

'A seven-point Likert scale is adopted across all constructs unless specified'		
Constructs	**Items**	**Sources**
Information Quality	**1.** The IKEA website provides accurate information. **2.** The IKEA website provides updated information. **3.** The IKEA website provides high quality information. **4.** Information on the IKEA website is relevant to me.	Kim and Niehm (2009)
System Quality	**1.** I think that learning about the IKEA website is easy. **2.** The IKEA website is flexible to interact with. **3.** I find the IKEA website easy to use.	DeLone and McLean (1992)
Service Quality	**1.** The time I spend in order to shop at the IKEA website is highly reasonable. **2.** The effort involved in shopping at the IKEA website is worthwhile. **3.** The service experience at the IKEA website is excellent. **4.** I found significant value by shopping at the IKEA website.	Oliveira *et al.* (2017)

Table 4.1. (Continued)

'A seven-point Likert scale is adopted across all constructs unless specified'		
Constructs	**Items**	**Sources**
Trust in Vendor	**1.** I like to trust IKEA. **2.** I think IKEA is trustworthy. **3.** I like the reliability of IKEA. **4.** I value the trustworthy characteristics of IKEA. **5.** IKEA is dependable.	Fang *et al.* (2014) and Oliveira *et al.* (2017)
Online Purchase Intentions	**1.** I will definitely buy from the IKEA website. **2.** I intend to purchase through the IKEA website if I have to buy furniture online. **3.** I am likely to make a purchase from the IKEA website if I need to buy a product. **4.** I would feel comfortable buying products from the IKEA website.	Hausman and Siekpe (2009) and Oliveira *et al.* (2017)
Web Skills	**1.** I consider myself knowledgeable about good search techniques for Internet shopping. **2.** I am extremely skilled in Internet shopping. **3.** I know how to find what I am looking for when Internet shopping. **4.** I know somewhat more than most users about Internet shopping.	Rose *et al.* (2012)
Internalized Moral Perspective	**1.** I stay true to my personal values. **2.** I act in accordance with what I believe in. **3.** People can count on me to behave in the same way over situations. **4.** I act according to personal values, even if others criticize me for it.	Leroy *et al.* (2015)

4.7.3. Demographic Questions

In addition to the main questionnaire, it would be necessary to ask respondents certain demographic questions to determine their age, gender, and nationality. These questions are aimed towards understanding general information including education levels, occupation, gender, and age group. This questionnaire is also designed to provide some basic understanding of respondents' online shopping experience, knowledge and usage of websites for online purchasing. All the questions are close-ended questions, which allow the respondents to choose an answer from a pre-determined set of options as recommended by Saunders, Lewis and Thornhill (2012) and Collis and Hussey (2014).

All the measuring items are presented in the form of close-ended and multiple option questions. Such questions are associated with certain advantages. Webb (1992) suggests

that this type of close-ended multiple-choice question can be administered quickly while taking few resources and little effort to process. At the same time, these questions could improve the respondents' cooperation levels as they make the respondents life easy.

Bhattacherjee (2012) suggests that the structured survey has five different types of response formats, including dichotomous, nominal, ordinal, interval level and continuous forms. The dichotomous response format provides respondents with two unordered options, such as 'yes/no' or 'male/female'. The researcher is offered with more than two choices with no intrinsic order for nominal responses (Bhattacherjee, 2012). For example, different options for the question related to occupation can be considered under a nominal response, i.e., 'student | unemployed | retired | employee - part time | employee - full time | self-employed'. When the respondents are offered two or more ordered choices, the response obtained is called the ordinal response (Bhattacherjee, 2012).

4.7.4. Question Sequencing and Presentation

After deciding the questions that should be included in the questionnaire, it was necessary to determine how to structure the questionnaire (Hair *et al.*, 2007). There are broadly three categories of questions in the questionnaire: opening questions, objectives-based questions and classification questions. The opening questions are aimed to stimulate the respondent's interest in the study, so it is recommended not to include sensitive questions in the initial section of the questionnaire. Such questions also include the screening question to make sure that the respondent meets the criteria to be a part of the population from which the research is trying to get its response (Hair *et al.*, 2007). The second section represents the questions related to the research topic and is presented in a logical order. So, researchers are advised to use the funnel approach to ensure that generic questions are always presented before the more specific questions are asked (Hair *et al.*, 2007; Collis and Hussey, 2009).

The third section includes classification questions related to the respondent's demographic characteristics. Such questions could be asked at the beginning of the questionnaire to help respondents to gain confidence and flow by responding to relatively more comfortable questions (Collis and Hussey, 2009). However, other schools of thought argue that such questions might discourage the respondents to answer the rest of the questions related to the research topic and hence suggest keeping such questions towards the end of the questionnaire. It is also recommended that

keeping such questions until the end might be useful to improve on response rates and minimize errors (Hair *et al.*, 2007). Following the suggestions from the above discussion, for this study the researcher decided to keep the questions in the following order: opening questions, objective-related questions and classification questions. The necessary techniques have been carefully considered by the researcher to achieve the appropriate sequencing and productive presentation of the questions.

4.7.5. Survey Method

As discussed previously, the current study requires quantitative data to validate the conceptual model. Surveys are strongly recommended as an effective and proven means of collecting quantitative data (Jick, 1979; Gable, 1994; Yauch and Steudel, 2003; Yang *et al.*, 2015; Agag and Eid, 2019; Thambusamy and Palvia, 2020). The survey method has been described by Orlikowski and Baroudi (1991, p. 12) as a "*primary data collection technique, and inferential statistics is the data analysis method used to 'discover' causal laws*". When compared to other methods of data collection, the survey has its strengths such as controllability, deductibility, repeatability, discoverability, and representability. Moreover, the survey method provides a strong ability to make generalizations (Gable, 1994). These strengths make the survey suitable for use with a quantitative deductive approach. The current study collects the primary data from a sample of online shoppers from the UK to validate the model, which is itself deduced from two background theories. Hypotheses formulated in the current research are derived from an examination of two existing theories, ISSM and SCT, which have been integrated to address the problem identified by this study. Thus, quantitative data is necessary to examine the conceptual model for the current study. Further, the surveys are a straightforward and quick means of data collection with limited resources. The current PhD research could largely benefit from adapting the survey as a data collection method, because the characteristics and advantages associated with survey research could help to empirically validate the conceptual model and validate the results in a universal context. The rest of this section will discuss the tools and techniques that the current study will use to conduct a field survey for data collection.

4.7.6. Pre-Test of Questionnaire

Pre-testing is implemented to test whether the questionnaire produces the intended response, and uncovers any unclear wording or errors before the questionnaire is revealed to the larger audience (Zikmund, 2000; Burns and Bush, 2002). Such a survey is performed before a small group of experts, generally scholars, who are requested to

comment on the content as well as the quality of the questions. They are also asked to indicate difficulties in understanding any wordings or the proper understanding of a question and the presence of any apparent bias (Zikmund, 2000). The researcher ensured that the questionnaire was pre-tested correctly to avoid any such error before it was used for pilot testing. Pilot testing is the next stage of the data collection process and a step before the questionnaire is finally distributed to the respondents from the target population. The researcher had the assistance of panellists, who helped with the pre-test of the questionnaire. Academics and scholars from marketing and commerce departments played the role of panellists to pre-test the developed questionnaire for this study.

Panel members were from four universities from the UK. Scholars from Swansea University, University of Bradford, University of Wales Trinity Saint David and the University of East Anglia participated in the pre-testing. Panel members included Heads of Departments, Professors, Assistant Professors, PhD students, and post-PhD scholars. A total of 25 members acted as the panel members for pre-testing this questionnaire. The role played by these panellists has added value to the current study. There were some useful suggestions received from these panel members, who highlighted issues including the recommended use of seven-point Likert scales, the merging and deletion of several questions, the problem of negative statements implemented along with positive statements in the questionnaire, recommendations for a change of order of questions representing each construct, and the use of the third person in some places. Some panellists asked for explanations and examples where there could be a possibility of confusion. The questionnaire was refined, including the recommendations given by the panel members. In addition to the given suggestions, several other alterations were made to address miswording, simplify more challenging terminology, and change double-barrelled questions.

Simple methods have been used to improve the operationalization of the current items in the questionnaire. The order of the questions was changed to follow the process of online shopping: customers search for products, then search for review information, then they buy from the websites. A few minor changes were made concerning some remaining items. For example, the researcher considered some other suggestions, such as getting rid of repetitive questions, dropping misleading questions, and providing examples in places.

4.7.7. Pilot Testing

Pilot testing is a commonly overlooked but immensely important phenomenon in the research process. It helps the researcher reveal likely problems in the research design and instrumentation. It also certifies the uniformity of the measurement instruments and validates items used for the constructs in the proposed model. Pilot testing is conducted typically using a small subset of the target population. This test primarily performs two objectives: to improve the quality of the questions and to test respondents' understanding and clarity before the actual survey takes place (Miles and Huberman, 1994; Saunders, Lewis and Thornhill, 2009). Teijlingen and Hundley (2001) state that pilot studies improve the internal validity of a questionnaire in various ways. There are several advantages for the researcher associated with the pilot testing, such as getting feedback to identify ambiguous and difficult questions; recording the time taken to fill in the questionnaire; assessing the response rate; and re-phrasing the questions if necessary. As the current research model has several variables with the strong possibility of ambiguity, pilot testing has proved useful in this case. Pilot testing for this study employed a sample of 55 postgraduate students and research scholars to receive efficient feedback for improving the questionnaire. The data collected from the pilot testing will also be tested for preliminary reliability and validity purposes.

After organizing a successful pilot test, the researcher would proceed to the actual data collection process from the target population (Bhattacherjee, 2012). It is also recommended to distribute the questionnaire for pilot testing to the respondents who have similar characteristics to the target population (Hair *et al.*, 2007). Pilot testing also acknowledges the time taken to complete the survey as it is broadly admitted that the researcher ought to be respectful of the respondents' time and keep the length of the survey as short as possible without compromising the purpose of the research. Particularly for research studies that incorporate a higher number of constructs and relationships, a lengthy survey can dramatically and adversely influence its response rate (Bryman and Bell, 2007). To avoid this outcome, the current research study has been designed to support a strong response rate.

4.8. Pre-Reliability and Validity Tests

Reliability is a very important issue for positivist quantitative knowledge acquirement. Burton-Jones and Lee (2017, p. 21) define measurement reliability as "*the measurement consistency or precision*". They state that reliability would even determine the validity of the overall measurement. The examination of the reliability of a questionnaire is

essential, even though constructs and their measures have been used previously by various researchers, because a sample for one study is likely to be different to other studies (Collis and Hussey, 2014). So, to ensure the reliability of the constructs and measures, a significant requirement is to check that they are consistently producing the same results irrespective of context and the sample size. Issues related to reliability tend to emerge for certain reasons. It could be from the respondent's side, as in the case of respondent's errors or respondent's bias; or it could be from the researcher's side, involving observer's error and observer's bias (Saunders, Lewis and Thornhill, 2012). Whereas the validity of the measurement scale refers to the ability of a scale to efficiently capture the construct that a researcher is attempting to measure. Issues of validity may come into existence when there are errors in the questions, respondent's boredom, or non-responses to items. These issues can be taken care of through the precise wording of questions and using statistical tools to find the missing values of the items (Collis and Hussey, 2014).

The study followed the suggestions presented above to make sure the operationalization of the items was employed to successfully examine the constructs of the current conceptual model. The sample size for the pre-reliability test is 55, which includes employees, students, and some research scholars. Before the actual data collection, the current study has also tested the reliability of the latent constructs of the conceptual model using the data received from the pilot study. The Cronbach's Alpha values provided in Table 4.2 show the reliability values of the pilot test results and they are within the recommended levels (Pallant, 2013). The results suggest the strong reliability of the model constructs. The Cronbach's Alpha values are ranging from 0.83 to 0.96, with information quality showing the lowest value and customer trust showing the highest value.

Table 4.2. Cronbach's Alpha (Pilot Test)

Latent Construct	**Cronbach's Alpha**
	55 Participants
Information Quality	0.83
System Quality	0.89
Service Quality	0.89
Trust in Vendor	0.96
Online Purchase Intention	0.90
Web Skills	0.89

4.9. Target Population

The current research aims to examine consumers' online purchase intentions based on a sample of UK consumers. The target population is determined as those respondents who usually reside in the UK and have a prior online shopping experience. For ethical reasons, the data should be collected from only those who are above the age of 18. As per the data from the Office of National Statistics in the UK, the population of the country in 2019 was 66.8 million, with 56.4 million people in the age range of 20 years and above, leaving just 10.4 million individuals in the age range of 0–19 (Office for National Statistics, 2020b, 2020c). The sample would endeavour to collect data from all age groups, including older people, as they also constitute a significant proportion of the population. Moreover, the current study has a great opportunity to cover respondents with varying levels of experience in using technologies to purchase online. Thus, the researcher can also draw a balance by collecting data from respondents who are technology savvy online shoppers and those who are not that experienced with online shopping, to avoid any response biases (Parameswaran, Kishore and Li, 2015). The upcoming sections will explain the sampling techniques adopted to draw samples from the population of online shoppers.

4.10. Sampling Frame

As the population focus of the current study has been clarified, now it would be reasonable to explain the sampling frame. The sampling frame is an easily accessible subset of the population from which the actual sample can be obtained (Parasuraman and Colby, 2015; Akrout and Nagy, 2018). The target population for this research is online shopping customers. However, it is not feasible to consider a fixed list of selected consumers as a sampling frame in the present context of this research. It is suggested that a good sampling frame ensures that no part of the target population is ignored with the members that participate in the survey, and no members who are not related to the population should be included. To associate a sampling frame of consumers, a requirement list of respondents needs to be selected from different social and professional backgrounds to include diversity among the sample members, including groups such as students, the unemployed, part-time employees, full-time employees, pensioners and so on. Although university students are more likely to show more innovative behaviour than other groups, using only the student population for data collection can pose issues related to generalizability of results (Szmigin and Bourne, 1999; King and He, 2006). However, excluding students from the sample could also be

unrepresentative of the target population. As far as the sampling frame for this study is concerned, the researcher would try and collect data from as diverse a set of the target population as possible. The use of simple random sampling provides greater freedom to the researcher to select the most appealing frames, in terms of getting access to respondent types such as students, employees of organizations and randomly approached people from different geographical locations. A similar approach would be applied to select the product and industry type for data collection. Current research adopts random sampling in selecting from various industries including online clothing, online electronics, online grocery, and online furniture websites. The online shopping website IKEA (an online furniture store) is selected as the shopping website in this case. This industry sector (online furniture) is seemingly prevalent in the UK, as mentioned in the introduction chapter. The UK has a great deal of online shopping activity and is promising in terms of providing experienced customer samples.

It is strongly recommended to achieve diversity among the selected sample respondents. Respondents from different geographical locations from a single country could improve the generalization of results to the entire population of the country. The researcher has selected cities from the four different nations in the UK (England, Northern Ireland, Scotland, and Wales). Due to the current conditions of the global pandemic, access to the respondents has become a major concern for this study. Unfortunately, the Covid-19 outbreak has created considerable issues in terms of gaining access to the required data samples. To overcome this, the current research has employed the services of a professional data collection agency known as “Qualtrics Research Services” which is widely used within research studies (Stubb and Colliander, 2019; Hampson, Gong and Xie, 2020). This study has offered an incentive of £2.50 for each participant who takes part in the survey. This study has developed a web questionnaire that is uploaded on the agency site (www.qualtrics.com) for respondents to participate in the survey. The specifications and requirements of this study have been clearly explained before the survey started, to avoid any possible data collection errors. Specifications such as diversified data samples in terms of respondents’ age, shopping experience, and education levels were requested prior to the agreement. In addition, respondent selection criteria had been provided along with the questionnaire. Besides, this study has also employed some standard method bias techniques such as the use of a marker variable to avoid concerns like non-response bias and to provide outlier detection. Thus, the

sampling technique employed by the current study could be considered as convenience sampling.

4.11. Sample Size

The most suitable sampling techniques have been discussed to explain where, who, and how the data will be collected. This section will explain the requirements for achieving an adequate sample size for better results. As the current study will be using structural equation modelling (SEM) to analyze the data gathered from respondents, the study must ensure it has enough data to run a successful SEM. Thus, it is necessary to determine the acceptable sample size for the data gathered so that it will be possible to utilize the SEM technique effectively. The sample size in existing quantitative research on online shopping ranges from 67 (Smith, Johnston and Howard, 2011) to 6,831 (Bart *et al.*, 2005). Due to its intricacy, covariance related SEM needs a relatively larger sample than other multivariate techniques (Hair, Bush and Ortinau, 2006). There are two views relating to the selection of sample size for research using multivariate analysis. The first view is called a generic minimum and the second view is the ratio of responses per observed variable. For the first view, the minimum sample size required is 150 (Gefen, Straub and Boudreau, 2000) whereas, for the second view, the minimum sample size needed should be 420, because the sample size in this context is decided using seven responses per observed variable (Hair, Bush and Ortinau, 2006). Since this research has 31 observed variables, the number of standard samples required to analyze the results for the UK should not be less than 420 valid responses. However, Comrey and Lee (1992) and Tabachnick and Fidell (2001) suggest that as a general rule of thumb, 300 responses are considered comfortable, 500 responses are imagined as very good, and 1,000 as excellent. As this study has customer web skills as the moderator, which is highly variable, this study has considered a sample size of 644 based on the recommendations by the scholars.

As the current model is built from existing theories, in order to examine the theories as per the researcher's conceptualization, the sample size must be carefully planned for better generalizations. For this study, the power analytics recommendations of Cohen (1988) and the accuracy in parameter estimation approach to sampling size planning suggested by Kelley and Maxwell (2008) will be considered while collecting the data for this research. The sample size for this study would be planned according to the guidance of Preacher and Kelley (2011) so that there is a sufficiently high probability to reject a false null hypothesis.

4.12. Common Method Variance (CMV)

CMV is a potential problem for quantitative research studies. These variances are the primary sources of measurement error. Therefore, they could threaten the validity of the conclusions reached about the relationships examined in the study. This issue can be related to some measurement practices, such as the use of the content of specific items, scale type employed, response format, and the general context (Podsakoff *et al.*, 2003; Podsakoff, MacKenzie and Podsakoff, 2012). Previous studies strongly suggest that CMV is an important issue in behavioural research and its effects may vary across measures of different constructs assessed with the same method (Spector, 2006). There are processes through which method biases sometimes influence respondents' behaviour. These include comprehension (respondents' understanding of questions), retrieval (respondents' retrieval of their memories), judgement (completeness and accuracy of memories), response selection (respondent's mapping judgement onto response category) and response reporting (which takes place while correcting the response for consistency or acceptability) (Podsakoff *et al.*, 2003). MacKenzie and Podsakoff (2012) suggested simple techniques to overcome the issue, like using common scale attributes, bunching related items, and allowing the respondents to recall previous responses through the availability of answers to previous questions. Such practices could reduce the CMV to some extent.

To avoid common method variance, this study will use the possible means suggested by the previous researchers who observed the effects of common method variance among consumer behaviour studies. The current study has considered the suggestions by previous research studies, e.g., Podsakoff *et al.* (2003), MacKenzie and Podsakoff (2012) and Podsakoff, MacKenzie and Podsakoff (2012). Efforts were made to sure that this research obtained measures of each variable from different sources. This research study tried to protect respondents' anonymity and also endeavoured to reduce evaluation apprehension by informing the respondents that there are no right or wrong answers, but it could help the study if they answer as honestly as possible. The suggestions provided by the above researchers were considered to improve scale items. The plans include defining unfamiliar terms with reasonable examples, avoiding double-barrelled questions, and keeping the questions as simple and focused as possible while attempting to avoid complicated syntax.

The current study will also employ a marker variable to control for CMV, as suggested by Williams, Hartman and Cavazotte (2010). The CFA models include the four items,

the internalized moral perspective (IMP) marker variable and the six latent constructs represented by 21 indicators. These indicators included three items for the information quality factor, three items for the system quality factor, four items for the service quality factor, four items associated with the trust in vendor factor, three items for the online purchase intention factor, four items for the web skills factor, and four items connected to the IMP marker. In selecting IMP as the marker variable, the current study has followed the suggestions of Williams, Hartman and Cavazotte (2010) who recommend identifying a marker variable that is theoretically not closely related to the substantive variables of the current study for better detection of method variance.

Also, the model fit indices of CFA were reviewed in the light of the suggestions offered by Williams, Hartman and Cavazotte (2010) to examine the presence of CMV. This includes the values and differences of the individual latent model such as chi-square, degrees of freedom, and fit index statistics. This study will examine for CMV in the next chapter, using popular techniques that employ the marker variable construct. This study is going to examine the common method variance after collecting the data from the respondents.

4.12. Ethical Considerations

Ethical challenges are faced during all stages of research: from the preparation of the topic and methods to the implementation, analysis and publication of the results. Ethical considerations ensure people's right to privacy and intellectual freedom and the search for knowledge (Fowler, 2009). The question of ethics involves a moral navigation between what is right and wrong, even though unethical actions may not necessarily be unlawful (Bhattacherjee, 2012). The key areas of ethical concern related to the present research may include harm to respondents, the lack of a well-versed agreement and voluntariness of participation in the survey, the attack of privacy and dishonesty or fraud (Bhattacherjee, 2012). To comply with ethical considerations, the researcher decided to only invite participants above the age of 18. As the survey is going to be voluntary in nature, the participant will be asked about their willingness to participate in the survey. If they are not interested in participating in the survey, they would not be forced to take part. All the respondents will be given a briefing of the study aims and a simple introduction of the storyline before handing them the measurement instrument. The survey questionnaire will mention all the necessary information about the research and the researcher, the researcher's affiliation and the purpose of the research (Fowler, 2009; Bhattacherjee, 2012). Finally, it is the researcher's responsibility to ethically

analyze the data and accurately present the results (Bhattacherjee, 2012). Further, to protect the respondents' interest and future well-being, their identity may be protected, which can be achieved by maintaining their anonymity and confidentiality.

Anonymity indicates that a researcher cannot recognize that a given response is from a specific participant. The survey questionnaire should mention this very explicitly on its cover page only. However, in certain other types of research, including interviews and longitudinal field surveys, it is essential to keep track of the participant's identity. In such cases, assuring the participant's confidentiality is entirely the researcher's responsibility. As this research is neither related to collecting data using interviews nor longitudinal field surveys, the researcher will make sure that the participant's anonymity is maintained while collecting data.

After requesting an ethical approval from the University of East Anglia ethics committee, this study has received approval for the data collection and analysis required to address the gaps in knowledge identified by this study, and understand the effects of three quality factors on online customer trust and purchase intention. Please see the ethical approval form in Appendix 2.4.

4.13. Measurement Model Assessment

The current section explains the analysis tools and strategies used by the researcher to validate the research model using the data collected from the sample. The techniques employed here would ensure reliability as well as the validity of the overall measurement of the conceptual model. As recommended by Anderson and Gerbing (1988), the current study has taken all necessary precautions to ensure the correct measurement development. The IBM SPSS Statistics 26.0 package and the SEM package AMOS 26.0 have been used in the current study for measurement assessment.

Bagozzi and Yi (2012) strongly recommended the use of SEM because of its associated advantages. First, with the use of popular methods, SEM provides a better fit with this type of study's objectives. Secondly, when dealing with the hypotheses, it helps achieve transparency and accuracy related to the measurement problems. Finally, it also checks the reliability of the measurement and deals with any issues. On the other hand, the AMOS techniques employed in the current research are to deal with CFA to further improve and refine a measurement model and ultimately allow the testing of the structural model.

4.14. Preliminary Data Analyses

It is common practice to use multivariate data analysis techniques in research studies that conceptualize multiple relationships. Multivariate analysis refers to all statistical methods that analyze multiple measurements of the subjects or objects under examination (Hair *et al.*, 2010). Generally, researchers who use multivariate analysis tend to leave out preliminary analysis techniques such as descriptive statistics. For this reason, the current study has used descriptive statistics such as frequency distribution and central tendency, and also distribution methods such as Skewness and Kurtosis. In addition, the current study considered the assessment of univariate analyses such as missing values and respondent characteristics.

Normality is going to be a key concern for the current study as the sample size is comparatively large. The data was thoroughly checked in terms of normality as this can strongly affect the results. The distribution measures Skewness and Kurtosis were also used to detect the multivariate outliers from the study.

4.14.1. Reliability and Validity Procedures

Achieving reliability and validity of the measures is essential for generating more accurate results. Ismagilova *et al.* (2020, p. 1212) refer to reliability as "*a measure of internal consistency that demonstrates the extent to which all measurement items on a scale measure the same concept or construct*". Validity has been defined as "*The extent to which indicators of a construct measure what they are purported to measure*" (Bagozzi and Yi, 2012). The use of different techniques to identify and to deal with reliability and validity concerns are strongly recommended (e.g., Fornell and Larcker, 1981; Anderson and Gerbing, 1982; Bagozzi and Yi, 2012; Henseler, Ringle and Sarstedt, 2015). The studies cited above suggest that the reliability and validity techniques employed in research can improve the quality of the results and the possibility of generalizing the results across the studied population of online shopping customers. It is possible to identify the measures that are not very useful to explain the construct in question; thereby, one can include only the most effective measures, and this can result in an adequate measurement of the latent construct.

The current research has included multiple methods to deal with the construct reliability, employing inter-item correlation, item-scale correlation, Cronbach's Alpha method, composite reliability (CR) and average variance extracted (AVE). The recommended level of inter-item correlation is suggested to be 0.40 and above (Hair *et*

al., 2014); item scale correlation is suggested to be 0.50 and above (Cronbach and Shavelson, 2004; Tabachnick and Fidell, 2007); Cronbach's Alpha is recommended to be over 0.70 (Pallant, 2013); and CR has been recommended to be a minimum of 0.60 (Bagozzi and Yi, 1988).

The CR calculation formula is shown in Figure 4.2 and can be further explained as follows: for a given construct, the loading of all items (λi) is squared and summed and this amount is then divided by the total summation of squared item loadings and the standard errors sum (ei).

$$\frac{\sum(\lambda_i^2)}{\sum(\lambda_i^2) + \sum(e_i)}$$

Figure 4.2. The Formula for Composite Reliability

In addition to the CR, the AVE is a prominent technique that is used to examine the reliability of individual latent constructs. AVE values are suggested to meet the minimum threshold of 0.50 (Fornell and Larcker, 1981). The AVE formula is presented in Figure 4.3, where λ represents the standardized factor loading, and i is the number of items used to represent a construct.

$$AVE = \frac{\sum_{i=1}^{n} \lambda_i^2}{n}$$

Figure 4.3. The Formula for Average Variance Extracted

To ensure the discriminant validity of the constructs, the current study has first used inter-construct correlation based on the Fornell and Larcker (1981) procedure, which compares AVEs of each construct with the variance shared between the constructs. The values are suggested to be less than 0.80 (Byrne, 2006; Hair *et al.*, 2010). This study has also employed Heterotrait-Monotrait (HTMT) criterion. The HTMT method was developed by Henseler, Ringle and Sarstedt (2015). The value of HTMT is suggested to be less than 1.0, and ideally less than 0.85 (Henseler, Hubona and Ray, 2016). Further, this study has also employed a method of validity suggested by Anderson and Gerbing (1988) which conducts a series of chi-square difference tests. If the results suggest the significant chi-square differences ($\Delta \chi^2$ (1) ≥ 3.84, $p < 0.05$), when compared between the constrained and unconstrained model, this demonstrates the discriminant validity of a construct. Chapter 5 will provide the results of the reliability and validity methods

used and details of the actions taken by the researcher to avoid any problems. As already discussed, the SEM does offer different ways to identify and deal with the reliability and validity problems.

4.14.2. Measurement Selection using Exploratory Factor Analysis (EFA)

There is strong support from different fields of research regarding the use of EFA for preliminary item selection. Wedel and Shi (2010) suggest that EFA is an appropriate analytical technique during the early stages of measurement analysis, in which EFA will identify the most effective measures. Further, Hair *et al.* (2010) suggest that it is possible to identify patterns and logic within a set of observed measures using factor analysis. These advantages have improved the popularity of the EFA technique to identify better measures. Thompson (2004) suggests that factor analysis builds patterns and dimensions within a data set; by doing so, it has to eliminate less useful measures from a scale. Classically, factor analysis used for EFA and CFA represents a group of closely related items that only represent the factor or construct they are supposed to represent. Hair *et al.* (2010) suggest that methods used for factor analysis explain how closely each measured item relates to other items representing the same latent construct and to the latent construct as well.

4.14.3. EFA By-products

There are some advantages of using EFA for research in addition to its primary function of measuring factors. The researcher could use common factor analysis to develop a new scale for a construct (Spicer, 2005). Also, a principal component analysis could be useful to refine the existing items in a scale (Hair *et al.*, 2010).

It is also possible through the EFA to conclude the ideal size of the sample that could be involved in the current study. This study has a sample size of 644, with a factor loading of 0.6 chosen as a critical minimum value as recommended by Thompson (2004) and Hair *et al.* (2010) to achieve an adequate level of appropriateness of the measurement scales. Complete results are presented in the next chapter for full factors with values above the recommended scales determined by using fundamental SPSS techniques.

Another advantage of the EFA is that it is possible to examine the reliability of the measurement scales using techniques such as Cronbach's Alpha. As the EFA operates using the factor loadings of the individual measures and latent variables, it is possible to assess validity as well. Tools such as Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and Bartlett's test are used by the current study to ensure the

sampling adequacy, which explains whether or not the factor analysis is suitable. Also, the commonalities and total variance explained, suggested by Sharma (1996) and Field (2005), could be implemented to check the measurement validity. These results are presented in the next chapter for all items with values above the recommended scales. Thus, the validity of the current study is thoroughly ensured.

4.14.4. Autocorrelation and Multicollinearity

Autocorrelation and multicollinearity are fundamental problems that result due to a match between two observations of the same measurement. The current research has employed the Durbin-Watson test to examine the presence of autocorrelation. Generally, it is considered that an acceptable range is between 1.5 and 2.5. However, values outside of these limits may be a reason for concern. Furthermore, Field (2013) suggests that values '<1' or '>3' should be considered as potential autocorrelation.

The current study has used a Collinearity Diagnostics test to examine the independence of independent constructs. Using the Variance Inflation Factor (VIF), the current research has tested the effects of correlation between the measured variables. It was recommended that a value of '>4' of VIF and a value '<0.2' of tolerance is condoned as a problem of multicollinearity (Hair *et al.*, 2014). Readers will be provided with the results of these methods and techniques in the next chapter.

4.15. Structural Equation Modelling (SEM)

Data analysis can be something as simple as descriptive statistics or can involve more complex statistical analyses, including factor analysis, discriminant analysis, regression and structural equation modelling (SEM) (Straub, Boudreau and Gefen, 2004). Descriptive statistics are used to summarize the data in a compressed form, and they are presented using figures, charts, and tables (Collis and Hussey, 2014). The first-generation statistical analysis techniques such as linear regression are restricted to examining relationships with one dependent variable at one point in time, providing less precise results for various relationships. Moreover, the number of times the regression analysis is repeated depends on how many dependent variables are present in the proposed research model (Iacobucci, 2009).

However, the second generation analysis techniques such as SEM provide flexibility in terms of analyzing the relationships between the latent constructs in the proposed research model, as well as the entire model itself which could be analyzed using this technique in one go (Tabachnick and Fidell, 2007). Moreover, SEM can also determine

measurement errors within observed variables of individual latent constructs (Gefen, Straub and Boudreau, 2000; Hair *et al.*, 2010). This is the reason why SEM is a desired potential method for causal modelling of complex datasets in consumer behaviour research, whereas regression analysis has been used only in a very few studies across these types of research. For this research, the introductory analysis will be used to find outliers, identify normality and explain the characteristics of the sample. Such statistical techniques are used to identify one variable and hence can be termed as bivariate analysis (Bryman and Bell, 2011). Further, inferential statistics are used to identify common method variance (CMV), using the analysis of variance and factor analysis, as these techniques involve the recognition and measurement of more than one variable and so are known as multivariate analysis (Collis and Hussey, 2014). This research will use SEM to test the research hypotheses (Hair *et al.*, 2014). The multivariate analysis technique employed in this research is explained and discussed to confirm its competence to formulate the research hypotheses and yield valid findings. SEM is a two-phased method; first it assesses a measurement model that relates measured variables of individual latent constructs, and then a structural model relates latent variables to each other to explain the entire conceptual model (Byrne, 2010).

4.15.1. Measurement Model

The first stage, the assessment of the measurement model, explains the connections between latent variables and their measuring items (i.e., Confirmatory Factor Analysis - CFA). CFA stresses how, and also the degree to which, the measured variables are connected to their fundamental latent factors. More specifically, this is linked to the level to which the observed variables are created by the essential unobserved variables and consequently the strengths of the regression lines that match unobserved variables to the observed variables are of key significance.

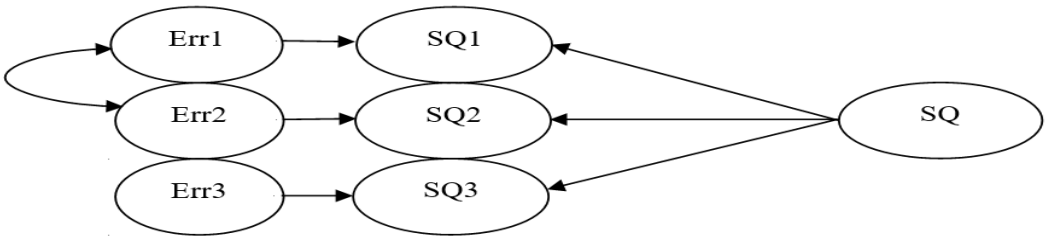


Figure 4.4. Measurement - CFA (Adapted from Byrne, 2010)

As the CFA model primarily explains the relationship between unobserved variables and their measured items within the SEM framework, it accounts for what has been

labelled as the measurement model (Byrne, 2010). The CFA model diagram (see Figure 4.4) represents one factor (i.e., the SQ model) measured by three observed variables (i.e., SQ1, SQ2 and SQ3). With the regression of the observed variables on every latent construct represented by a factor, the primary interest is to examine the variance of the factor and errors of measurement. It is possibly significant to point out that even though the CFA model illustrated in Figure 4.4 represents the first order model, second and higher end CFA models can also be investigated using a statistical package such as Analysis of Moment Structures (AMOS) (Kerlinger, 1984; Byrne, 2010). The one-way arrows shown in Figure 4.4 are directing from the encircled error terms (err1-err3) to give the effect of measurement error (i.e., both random and unique) on the measured constructs and from the residual where the residual represents the inconsistency between the postulated model and the observed data. Residuals are generally used with the latent variable only when it is used as a dependent variable, which combines at least two CFAs, one with the independent and the other with the dependent variable. Finally, the curved two-way arrows represent covariance and correlation between a pair of variables. Likewise, the bidirectional arrows connecting err1 and err2, as shown in Figure 4.4, indicate that a measurement error related to SQ1 is correlated with the measurement error of SQ2 (Byrne, 2010).

4.15.2. Structural Model

The structural model is a part of SEM that connects latent constructs of the conceptual model. In other words, the study could observe the influence of one latent variable on the other in the causal direction as hypothesized. This structural model can also be termed as a full or complete model as it includes both the measurement model as well as the structural model. In Figure 4.5, two separate rectangles represent two CFA models. The two factors within the ellipses represent the complete latent variable, so it would not be of interest to the CFA assessment. In Figure 4.5, the structural model defines the relationship between two unobserved or latent variables, i.e., IQ and TV. The structural model signifies how specific unobserved or latent variables directly or indirectly influence changes in the values of other unobserved variables in this model. Both measurement and structural models are also evaluated concerning their goodness of fit. A fit of the model concerning the data collected is judged by its value, which can range from 0 to 1. Typically, zero represents a complete absence of fit, whereas one reflects a perfect fit (Mulaik *et al.*, 1989). There are various types of fit indices that evaluate the model fit (Martínez-López, Gázquez-Abad and Sousa, 2013). Hair *et al.* (2014)

differentiated these indices as absolute fit indices, incremental fit indices, and parsimonious fit indices. At the basic level, the overarching aim of the goodness-of-fit indices is to establish the fit of SEM models. However, the growing number of fit indices and the lack of dependable standards makes it challenging to select which fit indices are most suitable for evaluating the performance of a conceptual model (Hair *et al.*, 2014).

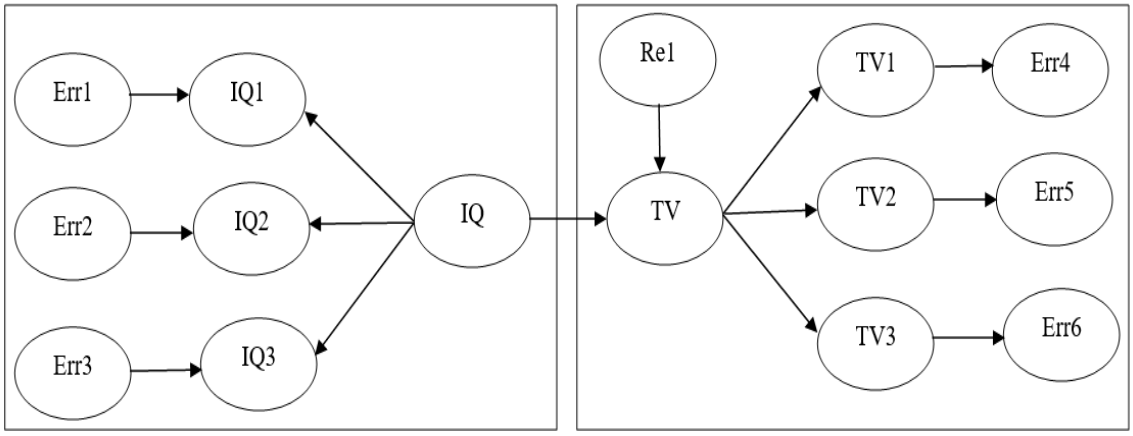


Figure 4.5. A General Structural Model (Adapted from Byrne, 2010)

For example, Bagozzi and Yi (2012) suggested that the goodness-of-fit index (GFI) and the adjusted goodness-of-fit index (AGFI) are not very accurate indices for representing the performance of a conceptual model due to their intense sensitivity to sample size and the nonexistence of their accepted cut-off criteria. It was suggested to use the Chi-square (χ^2), root mean square error of approximation (RMSEA) and the comparative fit index (CFI) above GFI and AGFI. To circumnavigate redundancy, it has been suggested to use three to four suitable fit indices to establish the conceptual model fit index (Hair *et al.*, 2014). Table 4.3 presents the expected standard values to be presented for the measurement and structural model.

This study has used the statistical package AMOS Version 26.0 to examine the measurement model, and the covariance-based structural equation modelling (CB-SEM) estimation method was adopted as recommended (Hair *et al.*, 2010; Bagozzi and Yi, 2012). The current study has used the covariance-based SEM as the current study is explanatory in nature and it is empirically testing a conceptual model built from a theoretical combination of two existing theories. The variance-based SEM is not applied since it is associated with exploratory theory building (Agag and Eid, 2019; Arshad and Khurram, 2020). It has been suggested that covariance-based SEM can be tested using software packages such as Mplus, LISREL, and AMOS (Hair, Babin and Krey, 2017;

Agag and Eid, 2019; Pitardi and Marriott, 2021). The current study has used AMOS to conduct the covariance-based SEM examination.

Table 4.3. Summary of Fit Indices

Fit Index	Cut-off Values
Chi-Square (χ^2)	≥ 0.05
Normed Fit Index (NFI)	≥ 0.90
Non-Normed Fit Index (NNFI)	≥ 0.95
Comparative Fit Index (CFI)	≥ 0.95
Root Mean Square Error of Approximation (RMSEA)	≤ 0.08

Source: Adapted from Bagozzi and Yi (2012)

4.16. Chapter Summary

The current chapter has provided the rationale for the choices made by the researcher in terms of selecting a suitable research philosophy, research approaches, data collection and analysis methods for this study. The positivist deductive nature of the current research, the research approach and the data collection methods chosen by the researcher have been discussed. The development of the measurement instrument was carefully designed and explained. The measurement scales were adopted from some prominent studies undertaken in the area of online shopping. The questions relating to the demographic characteristics of the respondents were based on some previous essential research to ensure they were appropriate for the present context. Reliable sampling methods were considered to get in touch with the right audience. SEM using AMOS will serve as the data analysis strategy for the current research. The stages involved in conducting SEM are clearly explained in the chapter. The research has considered all the precautions and recommendations from the literature to make the correct methodological assumptions for the current research. Overall, the methodological justifications have been presented in this chapter, providing a clear understanding of the current research process.

CHAPTER 5: ANALYSIS AND RESULTS

5.1. Introduction

This chapter is devoted to presenting the main outcomes of the empirical portion of the current study. The results presented in this chapter will provide an empirical examination of the conceptual model built in this study, reporting the construct relationships arising from the combined theorization of the two background theories of ISSM and SCT. As discussed in the research methodology, two-stage structural equation modelling (SEM) was adopted to validate the conceptual model and to test the research hypotheses. SEM begins with the assessment of the measurement model, which aims to ensure the adequacy of the model fitness and the constructs' reliability and validity. The first stage of SEM includes the development of a measurement model that examines the relation between the measured items and the latent constructs represented by the scale items. The second stage of SEM relates the latent constructs as hypothesized by this study to examine the construct relationships. This chapter will assist this study by providing results for discussion and analysis in the next chapter.

As discussed previously, the present research explores some direct effects between the constructs of focus, as well as some indirect impacts along with a moderation effect. The current chapter will present the results relating to all these construct interactions to support the theoretical and empirical assumptions made by the present study. The next chapter will then highlight how the findings address knowledge gaps and contribute to theory and practice.

Accordingly, the chapter is structured as follows. Section 5.2 presents the analysis of the missing values. Section 5.3 provides the sample profile. Section 5.4 presents the EFA procedures and outcomes relating to the latent constructs of this study. Section 5.5 gives the various descriptive statistics used by the present study to explain the latent construct. Section 5.6 gives the dimensionality assessment results using confirmatory factor analysis. Section 5.7 provides the reliability and validity results. Section 5.8 presents the results of autocorrelation and multicollinearity. Section 5.9 presents the results of CMV using the marker variable technique. Section 5.10 highlights the results of the structural model analysis. Finally, Section 5.11 provides the post-hoc mediation analysis on trust as the mediator between the three quality antecedents and purchase intention.

5.2. Missing Values

The initial step in the preliminary analysis would be identifying any missing cases among the received data. As the researcher has utilized the services of a professional agency for data collection, the third party has provided non-faulty data samples. To further confirm that there are no missing values, the current study has used SPSS 26.0 to identify missing values. The missing data case processing results are zero per cent for missing cases and all 644 samples in the survey are usable for data analysis. Table 5.1 presents the missing data case processing summary of the latent constructs of the current model.

Table 5.1. Summary of Missing Value Results

Latent Construct	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Information Quality	644	100%	0	0.0%	644	100%
Service Quality	644	100%	0	0.0%	644	100%
System Quality	644	100%	0	0.0%	644	100%
Trust in Vendor	644	100%	0	0.0%	644	100%
Online Purchase Intention	644	100%	0	0.0%	644	100%
Web Skills	644	100%	0	0.0%	644	100%

5.3. Sample Profile

This section will outline the characteristics of the participants from whom the survey data was collected. The characteristics provided by survey respondents included their gender, age group, education levels, occupations, online shopping experience, and frequency of shopping. The researcher has considered measures to achieve diversity among the respondents. The above-mentioned information is relevant as it highlights the fundamental considerations that should be made following the first-hand impression of the research sample. Table 5.2 gives the demographic details.

5.3.1. Respondent Characteristics

Table 5.2 presents the characteristics of the respondents who took part in the primary data collection of this study. The current study has included gender, age, education level, occupation, online shopping experience, frequency of shopping, and geographical region as the demographic details of the respondents. As seen in Table 5.2, about 54.3% of participants were male and the remaining 45.7% were female. Participants were also categorized into nine age groups. The largest portion of respondents was observed within the age group of 35–39 with 14.6 percent of the total sample size, followed by the age category of 19–24 (14.0%), while the smallest age group was recorded for those

whose age was between 55–59 with a percentage of 6.2%. So, the majority of the sample is young with a greater chance of being technology savvy and is highly likely to be using the latest trends in online shopping. As far as the educational levels are concerned, the largest share of the participants holds a bachelor's degree (33.7%), followed by those who have 10+2/GCSE qualifications with a percentage of 30.7%, whereas the lowest percentage (4.5%) of respondents have a PhD, DBA, or MPhil. Overall, 100% literacy is observed, and this promises a hopeful outcome for the researcher in terms of meaningful data. Concerning the distribution of the personnel sampler by occupation, the biggest share of respondents (43.8%) is employed, full-time, followed by employed, part-time, with a percentage of 14.3%. Thus, most respondents are working and are earning on a regular basis. This indirectly suggests that they can afford regular shopping over the Internet, based on the average income levels in the UK. In terms of customer experience with online purchasing, it was noticed that 55.3% have enjoyed an online shopping experience for more than seven years and about 18.9% have an experience with online shopping ranging from five to seven years. Similarly, about 27.3% of respondents reported that they usually do shopping online once a week and about 23% do shopping online once a month. Table 5.2 also indicates that most participants (78.3%) have registered with one or more e-commerce websites. Finally, in terms of area of residency, most respondents were residents in England with a percentage of 77.8%. Overall, it could be confirmed that the sample members are more experienced online shoppers and very aware of online shopping methods and technologies.

Table 5.2. The Respondents' Characteristics

Demographic Characteristic	**Sample Size**	
	Number of Respondents (N= 644)	Percentage (%)
Gender		
Male	350	54.3%
Female	294	45.7%
Total	644	100%
Age		
19–24	90	14.0%
25–29	70	10.9%
30–34	86	13.4%
35–39	94	14.6%
40–44	77	12.0%
45–49	56	8.7%
50–54	53	8.2%
55–59	40	6.2%
60 years and over	78	12.1%

Table 5.2. (Continued)

Demographic Characteristic	Sample Size	
	Number of Respondents (N= 644)	Percentage (%)
Education Level		
Secondary school	100	15.5%
10+2/GCSE	198	30.7%
Graduate	217	33.7%
Post-Graduation	63	9.8%
Postgraduate research	29	4.5%
Other	37	5.7%
Occupation		
Student	41	6.4%
Employed, full-time	282	43.8%
Employed, part-time	92	14.3%
Self-employed	48	7.5%
Not employed	73	11.3%
Retired	55	8.5%
Disabled, not able to work	31	4.8%
Other	22	3.4%
Online Shopping Experience		
Less than one year	22	3.4%
One to less than three years	54	8.4%
Three to less than five years	90	14.0%
Five to less than seven years	122	18.9%
Seven years or more	356	55.3%
Frequency of Shopping		
Twice or more in a week	143	22.2%
Once in a week	176	27.3%
Once in two weeks	111	17.2%
Once in a month	148	23.0%
Once in three months	36	5.6%
Once in six months	18	2.8%
Once in a year or less than that	12	1.9%
Are you a registered customer of any e-commerce websites like Amazon, eBay, Zara, Adidas, Nike etc..?		
Yes	504	78.3%
No	140	21.7%
Geographical Region		
England	501	77.8%
Northern Ireland	8	1.2%
Scotland	47	7.3%
Wales	88	13.7%

5.4. EFA Procedure and Outcomes

The present section addresses the EFA procedures adopted for the factorial assessment of the measurements used to scale the latent construct of the present study. The present study has employed some prominent methods and techniques from the e-commerce literature that are used to assess the individual as well as group-oriented, factor-based associations amongst the scales used to represent the model constructs. Individual factor

analysis techniques have been incorporated, such as correlation matrix, corrected item total correlation, factor loadings, mean, and standard deviation, as well as group techniques such as initial and extracted communalities. In addition, the results also included well-known methods of data sufficiency and accuracy such as the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) test, Bartlett's test of Sphericity, and percentage variance extracted. Individual tables are presented to provide the results for the latent constructs.

Before going through the results related to these factor analyses techniques, this section will present the benchmark values of those techniques as suggested by the existing literature. Item total correlation is suggested to be a measure of reliability of the validity of the items used to examine a latent construct and is recommended to be over 0.50 to consider a measuring item to be fit (Hair *et al.,* 2010). The factor loadings provide the strength of the measuring items being measured on to a latent construct and are suggested to be over 0.50 to be able to strongly represent the latent constructs as intended (Hair *et al.,* 2014). The communality values explain the togetherness of measuring items in representing a dependent construct, and these are suggested to be over 0.40 to show strong validity of the items in mutually representing the relevant latent construct (Hair *et al.,* 2014).

In addition, the present study has included three tests to explain the data sufficiency, fitness and accuracy of the indicators for the latent constructs and these could be used for factorial analysis. The KMO test which explains the suitability of the data for factor exploration has been suggested to be $p>0.6$ (Field, 2013; Hair *et al.,* 2014). Barlett's test of Sphericity gives the multi dimensionality of the measured items in terms of representing a meaningful outcome for the latent construct they represent, and is recommended to be $p<0.05$ (Hair *et al.,* 2014). Whereas the percentage variance extracted value is recommended to be over 60% to be satisfactory to explain the commonality of the measured items while representing a single factor (Field, 2013; Hair *et al.,* 2014).

5.4.1. Information Quality

The first antecedent of the present study, information quality, has been represented with strong measures, as individual measures were all able to score item-total correlation values well over 0.50, with IQ4 achieving the highest value of 0.75 and IQ3 the lowest value of 0.66. The individual factor loadings are also satisfactory as all items have

scored a value over 0.80. IQ2 has received the highest factor loading of 0.87 and IQ3 has scored the lowest value of 0.80. Further, all the measuring items seem to be scaled by the respondents with the highest mean value of 5.33 for IQ4 and a minimum mean value of 4.87 for IQ3, and with standard deviation values ranging from 1.05 to 1.464. Besides, the extracted communality scores are all satisfactory as the results are found to be well over 0.50. These results suggest strong associations amongst the measuring items in representing the information quality latent construct. In terms of the data and factor analysis methods, the KMO test has secured a value of 0.808, the Bartlett's test of Sphericity has managed to score 1153.910, and the percentage variance extracted showed a value of 70.185, which are all in the recommended range. See Table 5.3 for the EFA results for the information quality construct.

Table 5.3. Information Quality EFA Procedure

Correlations Matrix									Communalities	
Items	**IQ1**	**IQ2**	**IQ3**	**IQ4**	**Corrected Item-Total Correlation**	**Factor Loading**	**Mean**	**Std. Dev**	**Initial**	**Extraction**
IQ1	1.00				0.69	0.83	5.28	1.05	1.00	0.69
IQ2	0.68	1.00			0.74	0.87	5.25	1.10	1.00	0.75
IQ3	0.51	0.59	1.00		0.66	0.80	4.87	1.464	1.00	0.64
IQ4	0.59	0.63	0.61	1.00	0.75	0.85	5.33	1.23	1.00	0.72

Kaiser-Meyer-Olkin Measure of Sampling Adequacy: 0.808
Bartlett's Test of Sphericity: 1153.910 (Sig .0.000)
Variance Extracted Percentage: 70.185

5.4.2. System Quality

The second antecedent factor, system quality, also showed positive results to confirm the strength of the measuring items representing the present latent construct. The three measuring items have secured item-total correlation values over 0.50. In addition, the factor loadings of individual items are SyQ1= 0.88, SyQ2= 0.92, and SyQ3= 0.89. For the mean values, the first and third measurements SyQ1 and SyQ3 have both scored a value of 4.86 and the second item SyQ2 has secured a value of 4.78, whereas the standard deviation values of the three measures are 1.14, 1.30, and 1.21 respectively. Further, the extracted communality values are well over 0.70, suggesting a strong conceptual association amongst the measurement variables of the system quality construct. These results suggest the strong representation of the measurements used for the system quality construct. The KMO test has scored a value of 0.730, Bartlett's test of Sphericity value is 1007.427 with a significance value of 0.000, and the percentage variance extracted value is 80.040. These figures are very satisfactory and it is possible to claim the measurement fitness of the quantity and quality of the data and the

measures used for examining the system quality construct. See Table 5.4 for the EFA results of the system quality construct.

Table 5.4. System Quality EFA Procedure

Correlations Matrix								Communalities	
Items	**SyQ1**	**SyQ2**	**SyQ3**	**Corrected Item-Total Correlation**	**Factor Loading**	**Mean**	**Std. Dev**	**Initial**	**Extraction**
SyQ1	1.00			0.73	0.88	4.86	1.14	1.00	0.77
SyQ2	0.72	1.00		0.80	0.92	4.78	1.30	1.00	0.84
SyQ3	0.65	0.74	1.00	0.75	0.89	4.86	1.21	1.00	0.79

Kaiser-Meyer-Olkin Measure of Sampling Adequacy: 0.730
Bartlett's Test of Sphericity: 1007.427 (Sig .0.000)
Variance Extracted Percentage: 80.040

5.4.3. Service Quality

The third antecedent, service quality, has also revealed a strong fit regarding the measuring variables that represent the construct concerning factor representation. All the measuring items have scored strong item correlations as well as stronger factor loadings on the latent construct. Compared to the first two antecedents, the item total correlation and factor loadings of service quality are high. Individual factor loadings suggest that the SQ2 has scored the highest value of 0.92 while SQ1 has secured a value of 0.85. For the mean and standard deviation, respondents seem to be strongly aware of the service quality they perceived over the site. All the mean values are very close to 5, SQ3 has the highest value of 4.98 and SQ4 has the lowest value of 4.82, with standard deviation values ranging between 1.29 and 1.46. Besides, the communality values are also more than just being satisfactory. At the same time, the KMO test has managed to score a value of 0.839, Bartlett's test of Sphericity value is 1735.386 and the significance value is 0.000, and the percentage variance extracted value is 78.456. These figures all thoroughly support the choice of scale selection to examine the service quality construct with respect to reliability, validity, and factorability. See Table 5.5 for the EFA results of the service quality construct.

Table 5.5. Service Quality EFA Procedure

Correlations Matrix									Communalities	
Items	**SQ1**	**SQ2**	**SQ3**	**SQ4**	**Corrected Item-Total Correlation**	**Factor Loading**	**Mean**	**Std. Dev**	**Initial**	**Extraction**
SQ1	1.00				0.74	0.85	4.85	1.33	1.00	0.73
SQ2	0.74	1.00			0.85	0.92	4.95	1.39	1.00	0.85
SQ3	0.68	0.78	1.00		0.82	0.90	4.98	1.29	1.00	0.81
SQ4	0.61	0.73	0.73	1.00	0.76	0.87	4.82	1.46	1.00	0.75

Kaiser-Meyer-Olkin Measure of Sampling Adequacy: 0.839
Bartlett's Test of Sphericity: 1735.386 (Sig .0.000)
Variance Extracted Percentage: 78.456

5.4.4. Trust in Vendor

Turning to the factor results, trust in vendor is one of the dependent constructs of the present study and has shown very strong representation in its measurement variables. Comparatively, all the measuring constructs have achieved strong inter-correlations and factor loadings. In consideration of the factor loadings, TV2 and TV4 have scored a value of 0.92, which is the highest score, while TV1 and TV5 have scored the lowest values of 0.89. All the item's mean values are above 5: TV2 has a value of 5.44 and TV1 secured a value of 5.32 and the standard deviation values are ranging between 1.18 and 1.26. These values are very good, suggesting the strong perceptions of respondents with regards to the trustworthiness of the given shopping site. Communality values also support the selection of measurements. When discussing the sampling adequacy and accumulated data accuracy, the KMO test score value is 0.904, Bartlett's test of Sphericity value is 3033.955 with a significance value of 0.000, and the percentage variance extracted value is 82.356; these results are very strong and it is possible to claim the fit of measurements to be used for further analyses. See Table 5.6 for the EFA results of the trust in vendor construct.

Table 5.6. Trust in Vendor EFA Procedure

Correlations Matrix										Communalities	
Items	**TV1**	**TV2**	**TV3**	**TV4**	**TV5**	**Corrected Item-Total Correlation**	**Factor Loading**	**Mean**	**Std. Dev**	**Initial**	**Extraction**
TV1	1.00					0.84	0.89	5.32	1.26	1.00	0.80
TV2	0.82	1.00				0.87	0.92	5.44	1.18	1.00	0.85
TV3	0.76	0.80	1.00			0.86	0.91	5.39	1.24	1.00	0.84
TV4	0.76	0.79	0.81	1.00		0.87	0.92	5.33	1.22	1.00	0.84
TV5	0.72	0.76	0.78	0.79	1.00	0.83	0.89	5.38	1.19	1.00	0.79

Kaiser-Meyer-Olkin Measure of Sampling Adequacy: 0.904
Bartlett's Test of Sphericity: 3033.955 (Sig .0.000)
Variance Extracted Percentage: 82.356

5.4.5. Online Purchase Intention

The second and most decisive latent construct of the present study, the online purchase intention, has received strong inter-item correlation and factor loadings suggesting the overall strength of the measuring items representing this construct. The mean and standard deviation values further strengthen the understanding that the respondents do indeed have a stronger intention to be involved in an online commercial relationship with the given site. OPI2 received a value of 5.67, which is the highest, and OPI3 has a mean value of 5.41, which is the lowest. The standard deviation values range between 1.12 and 1.21. The communality values also explain the fit of the constructs. Reviewing the sampling adequacy, and the overall representation of the measured and measuring

variables, the KMO test of sampling adequacy value is 0.801, Bartlett's test of Sphericity has scored a value of 1848.152 with a significance of 0.000, and the percentage variance extracted value is 79.325. These values suggest the consistency of the variables used for examining the latent constructs. See Table 5.7 for the EFA results of the online purchase intention construct.

Table 5.7. Online Purchase Intention EFA Procedure

Correlations Matrix									Communalities	
Items	**OPI1**	**OPI2**	**OPI3**	**OPI4**	**Corrected Item-Total Correlation**	**Factor Loading**	**Mean**	**Std. Dev**	**Initial**	**Extraction**
OPI1	1.00				0.79	0.88	5.63	1.12	1.00	0.78
OPI2	0.79	1.00			0.82	0.90	5.67	1.15	1.00	0.81
OPI3	0.64	0.71	1.00		0.78	0.88	5.41	1.21	1.00	0.77
OPI4	0.71	0.71	0.78	1.00	0.82	0.89	5.58	1.19	1.00	0.81

Kaiser-Meyer-Olkin Measure of Sampling Adequacy: 0.801
Bartlett's Test of Sphericity: 1848.152 (Sig .0.000)
Variance Extracted Percentage: 79.325

5.4.6. Web Skills

The final latent construct of this study, the measuring constructs representing customer web skills, have been incorporated within the present study as a moderating construct. Web skills moderate the relationship between customer trust and online purchase intention and this construct has also shown a great deal of consistency regarding item-total correlation, factor loadings and communalities. The mean and standard deviation values are very positive. The mean value WS3 is 5.74, which is the highest value, and WS4 has a mean value of 4.92, which is the lowest value. The KMO test shows a satisfactory result of 0.816, Bartlett's test of Sphericity score is 1346.412 with a significance value of 0.000, and the variance extracted percentage value is 72.808; these results are all very satisfactory in supporting the choice to examine the moderating role of this construct in the present research. See Table 5.8 for the EFA results of the web skills construct.

Table 5.8. Web Skills EFA Procedure

Correlations Matrix									Communalities	
Items	**WS1**	**WS2**	**WS3**	**WS4**	**Corrected Item-Total Correlation**	**Factor Loading**	**Mean**	**Std. Dev**	**Initial**	**Extraction**
WS1	1.00				0.77	0.88	5.52	1.14	1.00	0.78
WS2	0.75	1.00			0.79	0.89	5.30	1.26	1.00	0.80
WS3	0.67	0.65	1.00		0.69	0.83	5.74	1.07	1.00	0.69
WS4	0.57	0.64	0.53	1.00	0.66	0.79	4.92	1.37	1.00	0.64

Kaiser-Meyer-Olkin Measure of Sampling Adequacy: 0.816
Bartlett's Test of Sphericity: 1346.412 (Sig .0.000)
Variance Extracted Percentage: 72.808

Overall, all the measuring variables show strong reliability and validity in terms of representing the latent constructs of the present study. The internal and directional fitness, including the quantity and quality of the measuring variables representing the latent constructs, has been confirmed.

5.5. Descriptive Statistics

This section provides a descriptive review of the empirical data. The key purpose of this analysis is to ensure that each construct is suitable for hypothesis formulation. These descriptive statistics provide introductory knowledge of the received data representing the latent constructs of this study. Precisely, this analysis involves computing mean, median, standard deviation (SD), skewness and kurtosis for every construct. Moreover, the data were also assessed for normality assumption by examining skewness and kurtosis values for every variable. The recommended values for skewness and kurtosis should range between -1 to +1 and -3 to +3, respectively, to meet the normal and non-skewed data assumption (Hair *et al.*, 2007).

In addition, traditional histograms are also used to explain the normality, although large samples are strongly recommended to have non-normality when checking the normality over histograms (Jushan and Serena, 2005; Goodhue, Lewis and Thompson, 2012). For a reliable examination of construct normality, skewness and kurtosis tests are strongly recommended in behavioural, marketing, and IS literature. Furthermore, the use of the seven-point Likert scale was also suggested for influencing the normal distribution of data (Wu, 2007; Leung, 2011).

In terms of the descriptive analysis of the variables used for this research, if the items have an average mean value greater than 3.5 then this indicates that respondents have replied to all the questions positively and favourably. Table 5.9 presents the descriptive analysis of the variables using all the indicators mentioned above.

Table 5.9. Summary of Descriptive Statistics

	Mean	Median	Std. Deviation	Skewness	Kurtosis
Information Quality	5.18	5.25	1.01	-0.43	0.02
System Quality	4.84	4.67	1.09	0.02	0.06
Service Quality	4.90	5.00	1.21	-0.63	0.89
Trust in Vendor	5.37	5.50	1.10	-0.74	1.08
Online Purchase Intentions	5.57	5.75	1.04	-0.71	0.52
Web Skills	5.37	5.50	1.03	-0.47	0.19

5.5.1. Information Quality

The histogram of the information quality scale is shown in Figure 5.1. The mean value of the information quality scale is found to be 5.18 and, with a standard deviation of 1.01, is greater than the neutral level of 3.5. Figure 5.1 shows that the distribution is slightly negatively skewed to the left with some peaked shape of the curve suggesting a hint of kurtosis as well. However, the results of the skewness and kurtosis tests are -0.43 and 0.02 respectively which are well under the recommended levels. The distribution of scales thus reveals, as indicated by Hair *et al.* (2007), that the dataset follows the normal distribution. Although the shape of the curve in Figure 5.1 may be slightly asymmetric, the skewness and kurtosis results suggest that it is an acceptable asymmetric distribution for this construct.

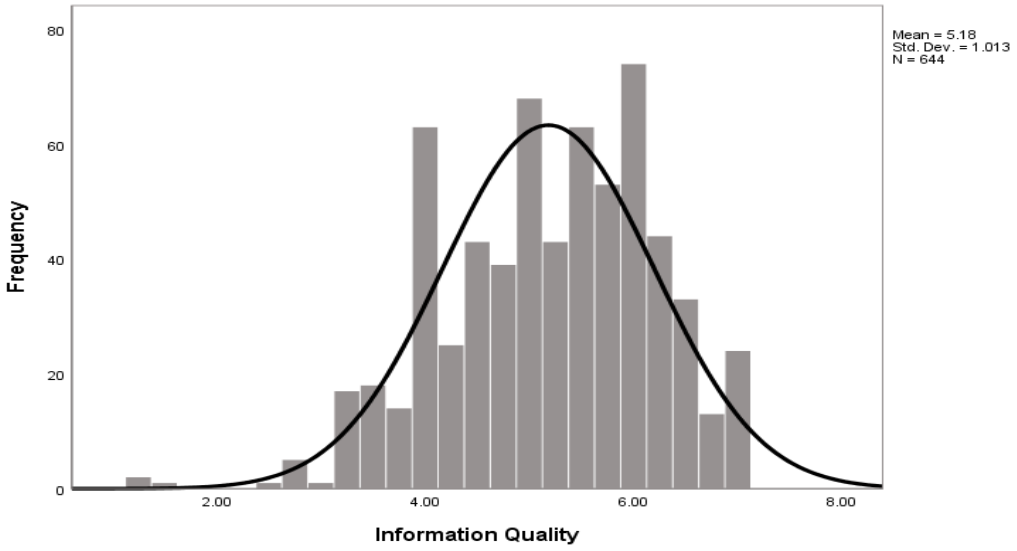


Figure 5.1. Information Quality Frequency Distribution

5.5.2. System Quality

The histogram of the responses for the system quality construct is shown in Figure 5.2. Respondents report that they perceive whether an online shopping website has an excellent degree of system quality with a mean and standard deviation of 4.84 and 1.09 respectively. The histogram suggests a slight positive skewness in the distribution of system quality, but the results of the skewness and kurtosis tests are 0.02 and 0.06, which are well under the recommended levels. It could be claimed from the normality results of the system quality construct that data have been normally distributed with the results almost being symmetric.

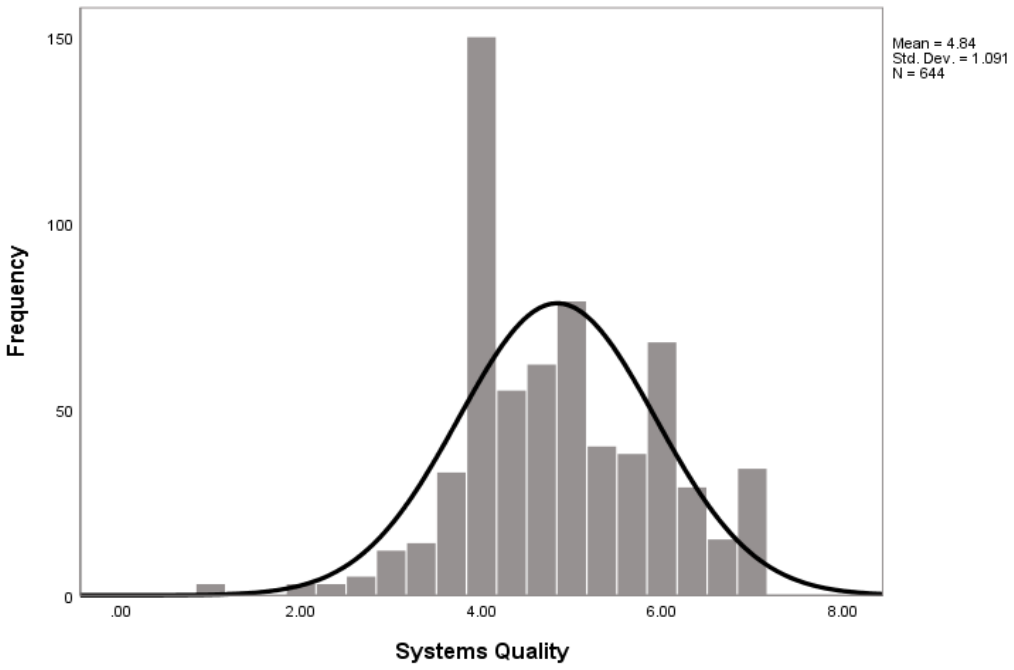


Figure 5.2. System Quality Frequency Distribution

5.5.3. Service Quality

As illustrated in Figure 5.3, the histogram of the service quality items is highly rated by respondents with 4.90 as the average mean value and a standard deviation of 1.21. The histogram shows a little skewness to the left which could be a result of the large sample size of the current research. Nevertheless, the shape of the curve shown in the figure looks like a normal asymmetric distribution. The results of skewness and kurtosis values for this latent construct are satisfactory at -0.63 and 0.89 respectively and suggest normal distribution of the current construct.

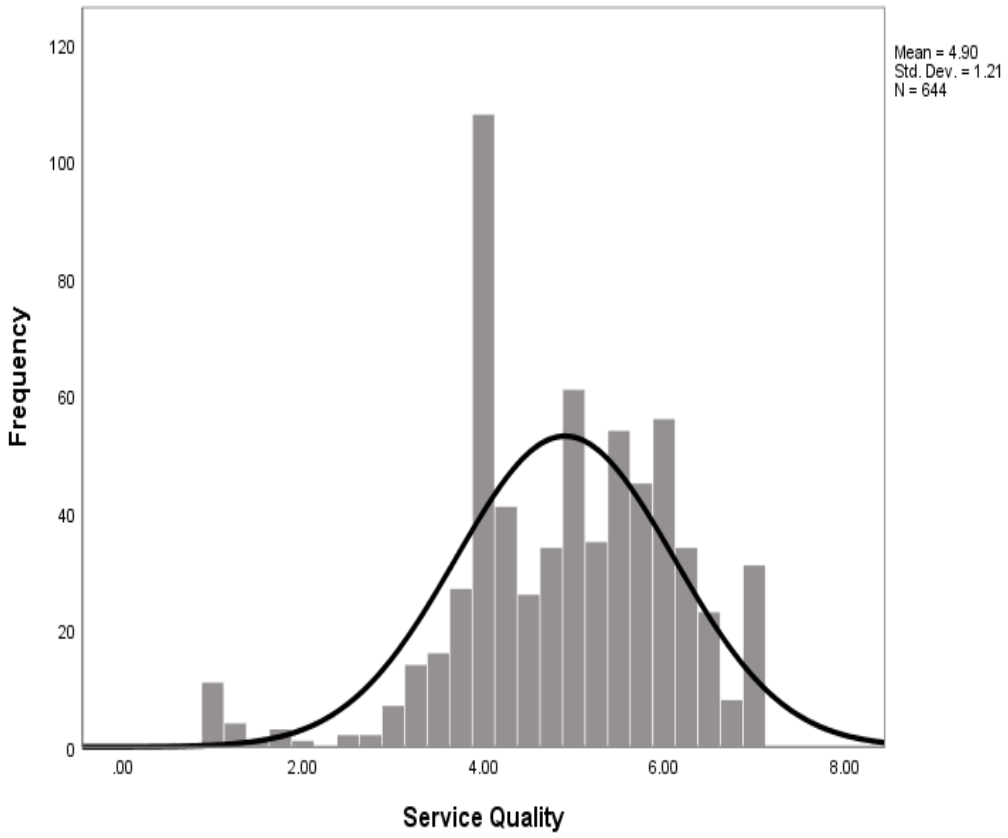


Figure 5.3. Service Quality Frequency Distribution

5.5.4. Trust in Vendor

The trust in vendor construct illustrated in Figure 5.4 has scored an average mean value of 5.37 with a standard deviation of 1.10. The histogram shown in Figure 5.4 suggests a highly skewed distribution. The histogram shows a negatively skewed distribution to the left, but the skewness and kurtosis values of trust in vendor construct are -0.74 and 1.08, respectively. Both values are under the recommended level suggesting an overall normal distribution of trust in the vendor.

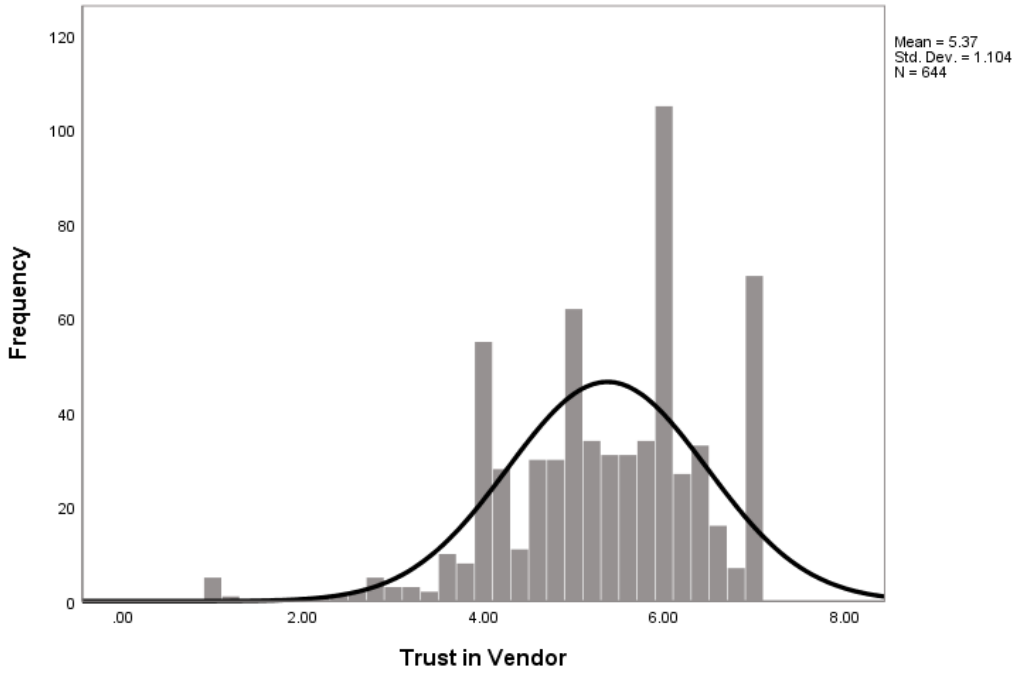


Figure 5.4. Trust in Vendor Frequency Distribution

5.5.5. Online Purchase Intention

Figure 5.5 displays the frequency distribution of respondents' online purchase intention. Respondents indicated they strongly intended to purchase from the given shopping website, as the average mean value of the online purchase intention scale items was 5.57 with a standard deviation of 1.04. The histogram found in Figure 5.5 shows some signs of high skewness, as the distribution is skewed to the left. However, the results of the skewness and kurtosis tests for online purchase intention are -0.71 and 0.52 respectively, which confirms the normal distribution of the current latent construct.

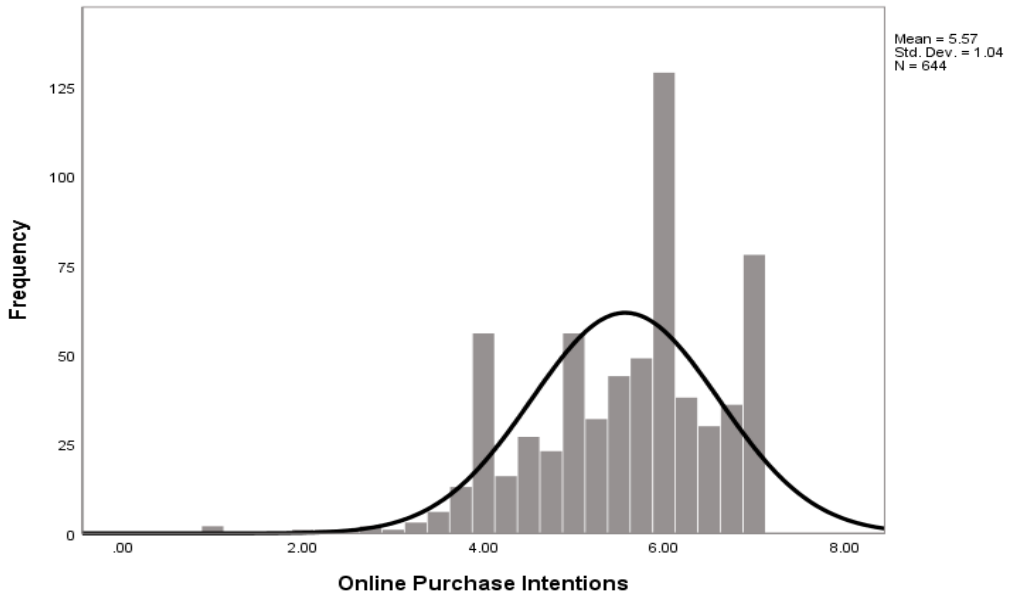


Figure 5.5. Online Purchase Intention Frequency Distribution

5.5.6. Web Skills

Figure 5.6 illustrates the frequency distribution of the web skills construct, which has scored an average mean value of 5.37 with a standard deviation of 1.03. The histogram presented in Figure 5.6 shows a peaked distribution with some negative skewness, but the skewness and kurtosis test results for this construct are 0.47 and 0.19, respectively. These values suggest a normal distribution for the current construct. These results also suggest the fit of the measures used for the web skills construct by demonstrating normal distribution.

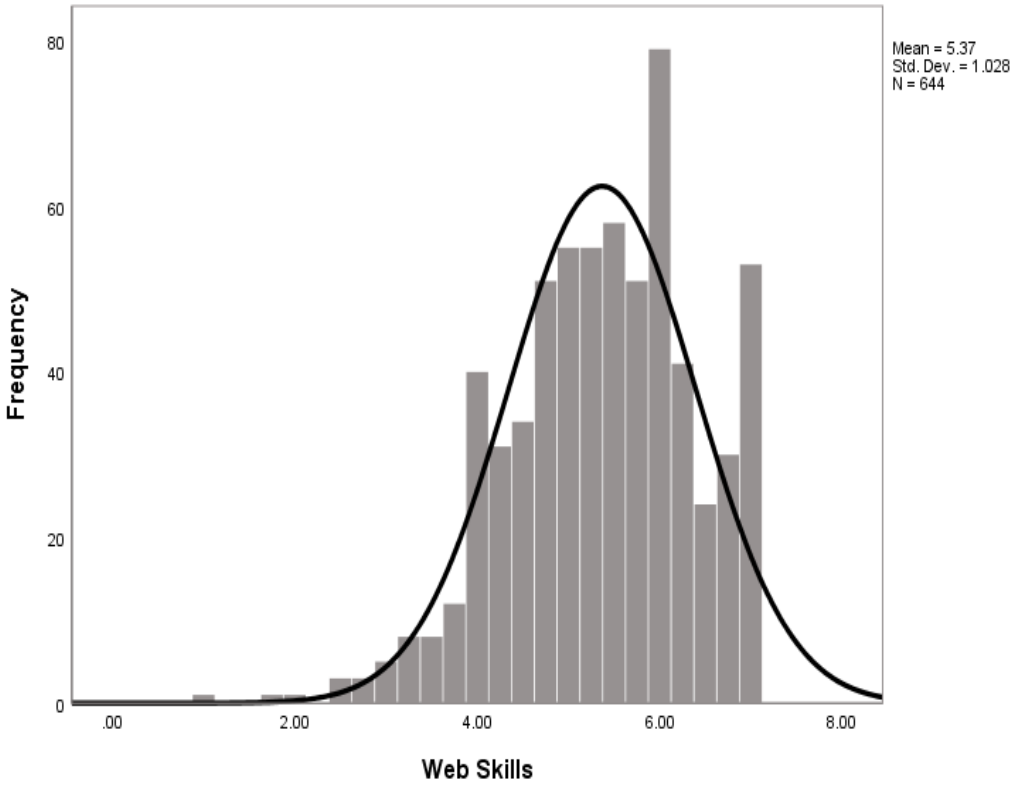


Figure 5.6. Web Skills Frequency Distribution

5.6. Dimensionality Assessment using Confirmatory Factor Analyses

The current study has followed Diamantopoulos, Riefler and Roth (2008) for statistical procedure recommendations and examined the external and internal validity of the research being undertaken. Anderson and Gerbing (1988) proposed a two-step approach which was also followed to evaluate both measurements as well as the structural models. This section presents the first step of this method, i.e., the application and validation of a measurement model with confirmatory factor analysis.

The necessity of the CFA would be to verify the scale measures that represent the factors used in the current study during the assessment and development process of the

measurement model. Verification is achieved through empirical validation of the model using valid information from the current data set. Netemeyer, Bearden and Sharma (2003) argue that the CFA is a form of structural model pre-analysis that applies rigour to the researcher's proposed study model to ensure that it is sufficient to validate the theories formulated. Research studies such as Anderson and Gerbing (1988) and Byrne (2006, 2010) suggest that the CFA also reviews the reliability and validity of all the latent variables, and thus performs measurement analysis critically before checking the structural model.

Dimensionality assessment is another important advantage associated with the confirmatory factor analysis which takes into account not only the inter-item analysis of one construct but also the relationships between a factor and factors representing the other latent constructs in the study (Anderson and Gerbing, 1988; Hair *et al.*, 2010). The exploratory factor analysis (EFA) using SPSS 26.0 has already been performed to assess the dimensionality, inter-item and item-scale correlation indicators. These indicators have been presented in section 5.4. for all items with values above the recommended scales. As recommended by Gerbing and Anderson (1988), Byrne (2010), and Schumacker and Lomax (2010), the dimensionality evaluation of CFA is necessary as it accounts for both internal and external consistency and validity.

The next section will address the CFA and its processes with the definition of the measurement model after having confirmed the reliability and validity of the used measures. The next section will also address the model assessment of fitness, suitability, and validity to test hypotheses. To conclude, the structure of the finalized constructs will be presented with their scale items.

5.6.1. Model Specification

Model specification includes developing a conceptual framework for testing hypotheses while considering important theoretical and research information. It is necessary to assess the precise relationships within the model before operationalizing the CFA (Schumacker and Lomax, 2010). As suggested by Hair *et al.* (2010) and Schumacker and Lomax (2010), this assessment must be done prior to confirming whether the current conceptualized model is compatible with the original model from which it has been adapted, and before testing the sample data of the current data set. Finally, it is necessary to consider the degree to which the actual model deviates from the theoretical model. If both models are not consistent with each other, this indicates that the

theoretical model is not aligned with the intended true model and would need additional efforts to make the intended alignment.

To test the precision of the relations and correlations suggested by CFA, the assumption of one-dimensionality ensures that each item observed represents or loads on the corresponding latent component (Byrne, 2006, 2010). As recommended by some research studies, such as those by Byrne (2010), Hair *et al.* (2010), and Schumacker and Lomax (2010), CFA also examines the error terms linked with every item in the given model with their intercorrelations and influences on loading values of measured items.

The explanation of measurement has already been clarified in Chapter 4, Figure 4.4, to postulate and evaluate one of the latent constructs SQ that represents CFA within this study's conceptual framework. The parameters of this conceptual model are as follows: IQ1 to IQ4 are the observed indicators of information quality; SyQ1 to SyQ3 are the observed indicators of system quality; SQ1 to SQ4 are the observed indicators of service quality; TV1 to TV5 are the observed indicators of trust in vendor; OPI1 to OPI4 are the observed indicators of online purchase intentions; and WS1 to WS4 are the observed indicators of web skills. The final CFA measurement model is shown in Figure 5.7.

The model has been checked with the aid of CFA. The next section addresses numerous fit indices and parameters of model evaluation, accompanied by model evaluation to ensure their robustness and parsimony.

5.6.2. Measurement Model Assessment

The fit indices used by the current study during the assessment of CFA models include various different parameters. These parameters and indices are tested to ensure that the suggested study model fits the relevant dataset. AMOS 26.0 is used to evaluate the measurement model for this research. The measurement model is designed to define and analyze the overall model to ensure that it fits the collected data. Some researchers recommend different fit indices as being critical to the model evaluation and these are widely found in the literature on marketing, while others stress the average variance of their parameters and measurement errors (Anderson and Gerbing, 1982, 1988; Hoyle and Panter, 1995; Byrne, 2010; Hair *et al.*, 2010). This study uses different indices suggested by Byrne (2006, 2010) and Schumacker and Lomax (2010) to test the measuring model in light of the guidance on prescribed fit estimation parameters. Well-known model fit indices such as the Chi-square statistic (including degrees of freedom),

NFI, NNFI, CFI, and RMSEA have all been employed in the current study. These fit indices are clarified, and the cut-off values are provided in Chapter 4, Table 4.3.

The measurement model was tested using AMOS 26.0 for model fit using the aforementioned fitness indices. The results of the fit statistics are as follows: Chi-square (χ^2) = 792.011, p<0.001, df = 237; χ^2/df = 3.34; NFI = 0.94; NNFI = 0.96; CFI = 0.96; and RMSEA = 0.06. These values indicated some issues for the initial model testing. The cut-off values are (χ^2) ≥ 0.05; NFI ≥ 0.90; NNFI ≥ 0.95; CFI ≥ 0.95; RMSEA ≤ 0.08 (Bagozzi and Yi, 2012). As a result, the fit indices for the proposed measurement model needed improvement to accomplish stronger validity and parsimony of the model before it is further tested for its various hypotheses. This could be achieved in several ways and the next section discusses the actions taken to ensure that the fit indices of the model are improved.

5.6.3. Model Fit Improvement

The results of the model fit for the current model are in line with the existing literature, which suggests that during the assessment of CFA for the measurement model it is generally found that the given research model does not usually meet the observed data for a given sample at the first attempt (Kelloway, 1998; Byrne, 2006, 2010; Hair *et al.*, 2010). Hence, further estimation of the model fit for the given measurement model is highly advisable following certain modifications and re-specifications. It is suggested to remove items with lower factor loadings and those with a very high error value term on the given constructs (Anderson and Gerbing, 1988). Therefore, to obtain a measurement model with satisfactory fit indices, the procedure needs to be carried out repeatedly following the suggestions from past studies (Fornell and Larcker, 1981; Anderson and Gerbing, 1988; Diamantopoulos and Siguaw, 2000; Byrne, 2010). As far as this research is concerned, the measures with the highest error value term on the given construct were considered for removal. To be more precise, items TV1 from the construct trust in vendor, OPI1 from online purchase intention and IQ3 from the construct information quality were dropped. The removal of these critical items has considerably helped to improve the fit indices value for the proposed measurement model.

After making these modifications, the measurement model using CFA was run again and found to provide the standard model fit values as follows: Chi-square (χ^2) = 465.407, p <0.001, df = 174; χ^2/df = 2.68; NFI = 0.96; NNFI = 0.97; CFI = 0.97;

RMSEA = 0.05. These results explicitly show that a better fit for the data is offered by the revised measurement model to prevent any more re-specifications. Figure 5.7 displays the final measurement model for this research where IQ1, IQ2 and IQ4 are the observed indicators of information quality; SyQ1 to SyQ3 are the observed indicators of system quality; SQ1 to SQ4 are the observed indicators of service quality; TV2 to TV5 are the observed indicators of trust in vendor; OPI1, OPI3 and OPI4 are the observed indicators of online purchase intentions; and WS1 to WS4 are the observed indicators of web skills.

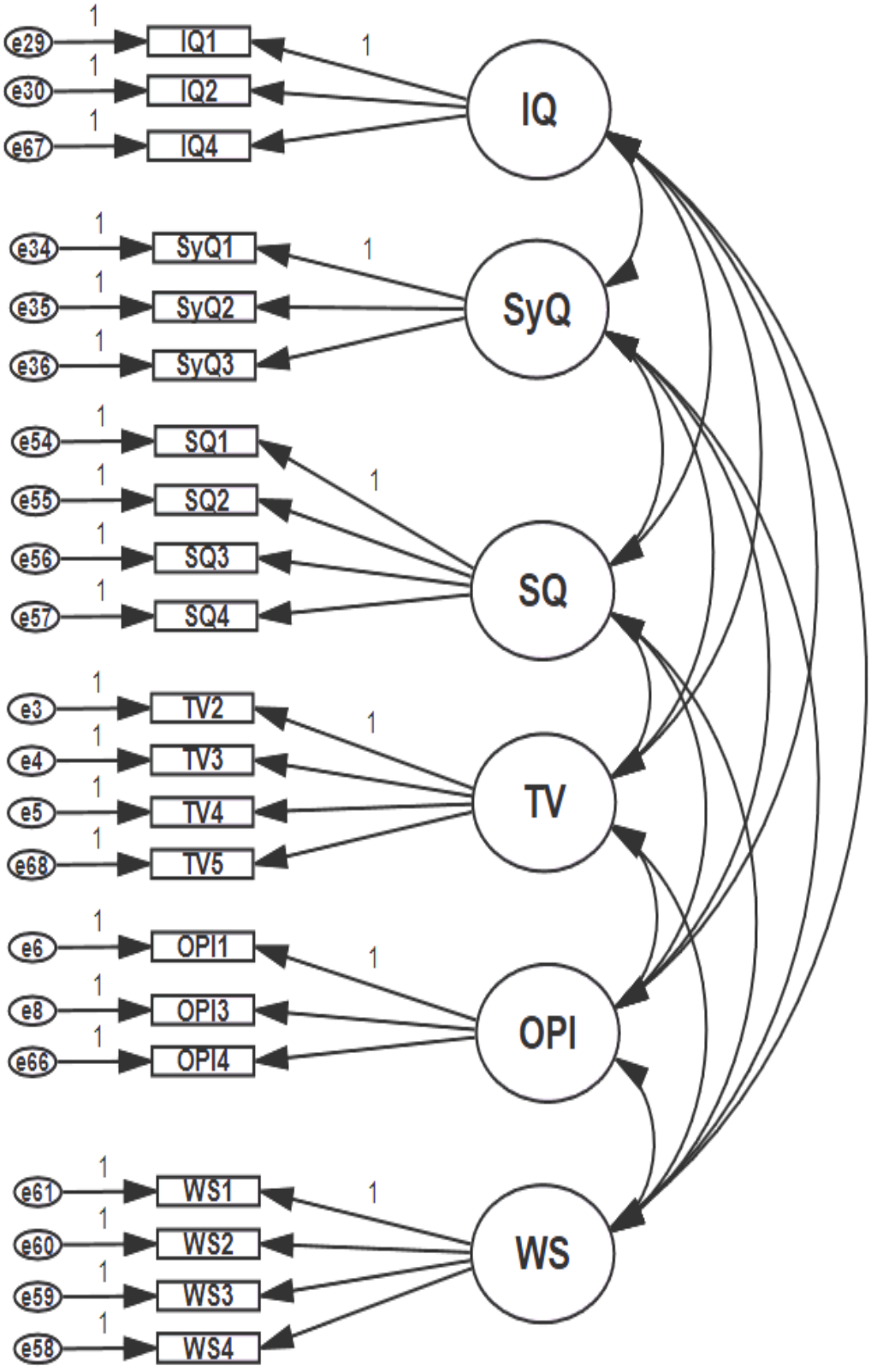


Figure 5.7. Finalized Measurement Model (CFA)

5.6.4. Finalized Construct Scales and Loadings

The item loadings obtained in the CFA procedure are given in Table 5.10. The final construct scales used for the research are also given.

Table 5.10. Item Loadings of Measurement Model

	Items	IQ	SyQ	SQ	TV	OPI	WS
IQ1	The IKEA website provides accurate information	0.79					
IQ2	The IKEA website provides updated information	0.84					
IQ4	Information on the IKEA website is relevant to me	0.77					
SyQ1	I think that learning about the IKEA website is easy		0.82				
SyQ2	The IKEA website is flexible to interact with		0.87				
SyQ3	I find IKEA website easy to use		0.83				
SQ1	The time I spend in order to shop at the IKEA website is highly reasonable			0.79			
SQ2	The effort involved in shopping at the IKEA website is worthwhile			0.90			
SQ3	The service experience at the IKEA website is excellent			0.88			
SQ4	I found significant value by shopping at the IKEA website			0.82			
TV2	I think IKEA is trustworthy				0.88		
TV3	I like the reliability of IKEA				0.90		
TV4	I value the trustworthy characteristics of IKEA				0.90		
TV5	IKEA is dependable				0.87		
OPI1	I will definitely buy from the IKEA website					0.78	
OPI3	I am likely to make a purchase from the IKEA website if I need to buy a product					0.86	
OPI4	I would feel comfortable buying products from the IKEA website					0.90	
WS1	I consider myself knowledgeable about good search techniques for Internet shopping						0.86
WS2	I am extremely skilled at Internet shopping						0.87
WS3	I know how to find what I am looking for when Internet shopping						0.77
WS4	I know somewhat more than most users about Internet shopping						0.70

Note. Goodness-of-Fit Statistics: Chi-square (χ^2) = 465.407, p <0.001, df = 174; Normed Chi-square (χ^2/df) = 2.68; Normed Fit Index (NFI) = 0.96; Non-Normed Fit Index (NNFI) = 0.97; Comparative Fit Index (CFI) = 0.97; Root Mean Squared Error of Approximation (RMSEA) = 0.05

Constructs such as information quality, system quality, and online purchase intention are represented by three items each, whereas service quality, trust in vendor and web skills are represented by four items each.

5.7. Reliability and Discriminant Validity

5.7.1. Test of Scale Reliability

Reliability tests are conducted to ensure that the measuring items display a high degree of consistency in representing the latent variable as intended. As suggested by Sharma (1996) and Netemeyer, Bearden and Sharma (2003), the test of reliability would also verify the defined measurement scale for homogeneity. Therefore, this section examines the data to ensure a higher value of correlation and reliability is expressed by the items representing the same construct. Therefore, using Cronbach's Alpha values, each item and scale was assessed. Moreover, this analysis also measured the associations between items and scales (Spector, 1985; Netemeyer, Bearden and Sharma, 2003). The remaining section presents the reliability improvement by exclusion of the items that are below the threshold values.

There are various ways in which the reliability of the scale is measured. According to Bulmer (2003), Cronbach and Shavelson (2004), and Moore (2009), some of the most

common forms of reliability measures include the split-half, test-retest and alpha coefficient. Assessing reliability using Cronbach's Alpha is very common in social science studies (Covin and Slevin, 1989; Bagozzi and Yi, 2012). Besides, it is an extensively used measure among marketing researchers. Consequently, this study has also used the Cronbach's Alpha to analyze the scales' reliability.

5.7.1.1. Inter-Item Correlation

As noted by Spicer (2005) and Pallant (2013), another measure to test latent variables' validity is inter-item correlation, where a higher correlation indicates that the considered items perform in a combined way for a shared assessment purpose. Alternatively, these items are supposed to quantify an identical object (Churchill and Iacobucci, 2005; Moore, 2009). A valid measure of the given variable should have an inter-item correlation of 0.40 and above with a value of 0.35 being considered the critical accepted level (Hair *et al.*, 2014).

The inter-item correlations for this study have been tested using SPSS version 26.0 and the results are presented in section 5.4, revealing that all items are above the suggested threshold value of 0.40 and are strongly correlated.

5.7.1.2. Item-Scale Correlation

The item-scale associations, as suggested by Bulmer (2003), Churchill and Iacobucci (2005) and Hair *et al.* (2010), determine the validity of the measurements used. These studies recommended that those items which show low correlation values with the remaining items on the scale should be assumed to be omitted to improve the measurement validity of the latent constructs. The amended item-total correlation (using SPSS 26.0) helps to determine the degree of interrelationship between any item and the matching scale itself (Pallant, 2013). Subsequently, the candidates for further exclusion are known to be items with lower item-total correlations. Cronbach and Shavelson (2004) and Tabachnick and Fidell (2007) have suggested that researchers should eliminate items with an association below 0.50. Also, a full-scale dimensionality and validity evaluation, previously addressed in this chapter, was carried out at the CFA stage of this report (see Section 5.5).

As shown in section 5.4, item-scale correlations are sufficiently compelling in this study and well above the threshold value of 0.50. For one of the four web skills items, the lowest item-scale correlation was 0.64. These results subsequently indicated the scales possessed sufficient internal consistency.

5.7.1.3. Cronbach's Alpha Coefficient

As Cronbach and Shavelson (2004) have defined, the reliability of a scale is the degree to which scale components display internal uniformity and are free of random mistakes. For both existing and newly formed scales, reporting Cronbach's Alpha is a common practice among social research studies (Moore, 2009; Hair *et al.*, 2010). It has been recommended that a reliability measured at or nearer to 0.90, 0.80, and close to and not less than 0.70 are considered as excellent, very good and adequate respectively (Nunnally and Bernstein, 1994; Kline, 1998; Spicer, 2005; Pallant, 2013).

Considering the above suggestions, it was critical to ensure that the Cronbach's Alpha values for the constructs maintain the minimum prescribed threshold values of 0.70. For all the constructs for the proposed research model, Table 5.11 displays the Cronbach's Alpha values, and these were much higher than the minimum threshold value. The next portion of the chapter (Section 5.7.2) includes more reliability measures (i.e., composite reliability).

Table 5.11. Cronbach's Alpha Coefficient (α)

Construct	a
Information Quality	0.84
System Quality	0.88
Service Quality	0.91
Trust in Vendor	0.94
Online Purchase Intentions	0.88
Web Skills	0.87

5.7.1.4. Assessment of Composite Reliability (CR)

Despite evaluating Cronbach's Alpha for the constructs in the previous section, additional action is suggested to evaluate the reliability of the construct. The alpha-based reliability check has been commonly used in past studies (Nunnally and Bernstein, 1994; Cronbach and Shavelson, 2004), although it is suggested to be lacking adequate rigidity (Gerbing and Anderson, 1988). As explained by Cronbach and Shavelson (2004), this is because, to avoid any measurement error, the alpha coefficient of Cronbach finds all scale objects to be completely correlated. Therefore, it could be argued that Cronbach's Alpha somewhat underestimates reliability as measurements in real situations cannot in practical terms be perfectly correlated (Byrne, 2006, 2010; Hair *et al.*, 2010).

Fornell and Larcker (1981), Byrne (2010), and Schumacker and Lomax (2010) define CR as the quantity of the inclusive reliability of a variety of diverse but related items.

CR enables a more precise measurement of reliability. Netemeyer, Bearden and Sharma (2003, p. 153) argue that composite or construct reliability "*is a measure of the internal consistency of items in a scale*". The loadings of objects, in addition to their standard errors that are usually obtained from a CFA method, are reflected by this technique. The availability of statistical programs to measure CR is lower and, therefore, the figure is calculated manually.

So, all scales were further examined for CR using the factor loadings from the CFA. The values of CR were computed through an Excel spreadsheet, considering the item loadings of constructs shown through the CFA using the formula presented in Chapter 4, Figure 4.2. It has been prescribed that the acceptable minimum threshold value for CR is 0.60 (Fornell and Larcker, 1981; Bagozzi and Yi, 1988). As illustrated in Table 5.12, CRs were measured for all constructs and found to be substantially higher than the 0.60 threshold value specified.

Table 5.12. Composite/Construct Reliability

Construct	CR
Information Quality	0.84
System Quality	0.88
Service Quality	0.91
Trust in Vendor	0.94
Online Purchase Intentions	0.88
Web Skills	0.88

Therefore, it can be argued that the convergent validity was found in this research for each construct (Fornell and Larcker, 1981).

5.7.1.5. Assessment of Average Variance Extracted

The average variance extracted (AVE) is one of the most frequently used techniques to evaluate individual constructs. According to Netemeyer, Bearden and Sharma (2003), AVE gives the magnitude of the variation reported by the measures related to particular constructs, taking into account the error of measurement. This study measures the AVE of all the latent variables for the measurement model in question (Bagozzi and Yi, 2012).

Fornell and Larcker (1981), Netemeyer, Bearden and Sharma (2003), Ping (2004) and Hair *et al.* (2010) recommend that the square of factor loadings are summed and divided by the observed items to derive the AVE. As recommended by Fornell and Larcker (1981), AVE values should meet the minimum threshold of 0.50 for attaining the model's convergent validity. As a result, the AVE value for each construct was

computed using the individual factor loading values (taken from Table 5.10) for the given construct. Table 5.13 presents the AVE value for every construct and shows that all the AVE values meet the recommended level of above 0.50.

Table 5.13. Average Variance Extracted

Construct	AVE
Information Quality	0.64
System Quality	0.70
Service Quality	0.72
Trust in Vendor	0.79
Online Purchase Intentions	0.72
Web Skills	0.64

5.7.2. Assessment of Discriminant Validity

A significant assessment to ensure the distinction of one construct from the other is termed as discriminant validity (Kline, 1998; Byrne, 2006, 2010). As noted by Hair *et al.* (2010), the higher the value of discriminant validity, the more unique the construct is from others in capturing a phenomenon isolated from other constructs.

Discriminant validity can be achieved in various ways as applied in this study. The first way to determine discriminant validity is to ensure inter-construct associations remain less than 0.80 (Byrne, 2006, 2010; Hair *et al.*, 2010). Table 5.14 presents the inter-construct correlations between each pair of the constructs.

An alternative method to evaluate discriminant validity is using the Heterotrait-Monotrait (HTMT) criterion. The HTMT method was developed by Henseler, Ringle and Sarstedt (2015) and is embraced as a superior boundary measure for assessing discriminant validity. As an approximation for factor correlation, the HTMT value should be notably smaller than one (ideally < 0.85) to differentiate between two variables (Henseler, Hubona and Ray, 2016; Ogbeibu, Senadjki and Gaskin, 2018). As presented in Table 5.15, the results indicate that these figures fall considerably under the threshold of 1.0, hence representing that all constructs are overtly independent of each other and the condition for discriminant validity has been met.

Table 5.14. Correlation Matrix and Reliability Measures

		1	2	3	4	5	6	7
1=	Information Quality							
2=	System Quality	0.52**						
3=	Service Quality	0.65**	0.66**					
4=	Trust in Vendor	0.67**	0.61**	0.67**				
5=	Online Purchase Intentions	0.70**	0.59**	0.67**	0.74**			
6=	Web Skills	0.38**	0.38**	0.42**	0.41**	0.43**		
	Mean	5.29	4.84	4.90	5.39	5.54	5.37	5.13
	Std. Deviation	0.98	1.09	1.21	1.11	1.05	1.03	1.37
	Average Variance Extracted	0.64	0.70	0.72	0.79	0.72	0.64	0.86
	Composite Reliability	0.84	0.88	0.91	0.94	0.88	0.88	0.95
	Cronbach's Alpha	0.84	0.88	0.91	0.94	0.88	0.87	0.95

Note. Significance Level: * $p < 0.05$, ** $p < 0.01$

Table 5.15. Discriminant Validity: Heterotrait-Monotrait (HTMT) Test

		1	2	3	4	5	6
1=	Information Quality						
2=	System Quality	0.60					
3=	Service Quality	0.74	0.74				
4=	Trust in Vendor	0.76	0.68	0.73			
5=	Online Purchase Intentions	0.82	0.68	0.75	0.81		
6=	Web Skills	0.45	0.43	0.48	0.46	0.50	

Note. Thresholds are 0.85 for Strict and 0.90 for Liberal Discriminant Validity

Finally, a sequence of Chi-square differential tests is another way of evaluating discriminant validity (Anderson and Gerbing, 1988). This involves precisely comparing Chi-square values in CFA models where the correlation value was set free between the variables and then fixed to 1.0. As illustrated in Table 5.16, the findings show the substantial differences between the restricted and unrestricted measurement models in Chi-square ($\Delta\ \chi^2\ (1) \geq 3.84$, $p < 0.05$), which suggests the presence of discriminant validity (Anderson and Gerbing, 1988; Bagozzi, Yi and Phillips, 1991).

Table 5.16. Chi-square Differences in Constrained and Unconstrained Models

	$\Delta\ \chi^2$ (1)					
	1	2	3	4	5	6
1=Information Quality						
2=System Quality	95.16					
3=Service Quality	132.60	87.32				
4=Trust in Vendor	156.19	50.09	78.48			
5=Online Purchase Intentions	152.49	49.29	80.49	107.55		
6=Web Skills	80.29	274.54	155.37	239.93	290.52	

5.8. Autocorrelation and Multicollinearity

Field (2013) defines autocorrelation as the degree of correlation in data observations between the values of the same variables and refers to multicollinearity as a condition where two predictor variables in a multiple regression model are highly related. In other words, more than one predictor variable in a regression model is being matched with a

dependent variable. Both autocorrelation and multicollinearity could negatively influence the predictive power of a regression model.

The Durbin-Watson (DW) test is popular among scholars dealing with autocorrelation in information systems research (Brown, Venkatesh and Goyal, 2014; Yu, Yang and Jing, 2017). The advantage of this test is that it can usually be found on packages such as SPSS and is reliable while running a regression analysis. The statistical value of the Durbin-Watson test will always fall between '0' to '4'. A value of '2' suggests no autocorrelation, whereas to be positively autocorrelated the value must be '0' to '2', and a negative autocorrelation needs a value between '2' to '4'. However, an acceptable range is considered as being between 1.5 and 2.5. Values outside of these limits may be a reason for concern. Furthermore, Field (2013) suggests that values <1 or >3 should be considered as potential autocorrelation.

This research has conducted regression analysis for the two dependent variables, i.e., trust and online purchase intention. The results of the Durbin-Watson statistic for this problem (see Table 5.17) are 1.81 for trust in vendor and 2.07 for online purchase intentions. The values are comfortably within the recommended range suggesting no concerns of autocorrelation in the case of either of the two dependent variables.

To analyze whether the multicollinearity occurs among the predictor variables, two measures are suggested: variance inflation factor (VIF) and tolerance (Gölgeci *et al.*, 2019). Tolerance is defined as "*the amount of variability of the selected independent variable not explained by the other independent variables*" (Hair *et al.*, 2014). So, by examining these measures, one could explain how far the measured variables differ from one another when examining a dependent variable. Correlation between independent and dependent variables is necessary while the independent variables should not be influencing each other. VIF provides the amount of variance of an independent variable influenced by its correlation with other independent variables of the study. When the values of VIF are low, then they will present no multicollinearity concern.

It was recommended that a value >4 of VIF and a value < 0.2 of tolerance is considered as representing a problem of multicollinearity (Hair *et al.*, 2014). In the current case, as shown in Table 5.17, the values of tolerance and VIF are below the recommended limit and no multicollinearity issues were found.

Table 5.17. Autocorrelation (DW) and Multicollinearity (Tolerance and VIF)

Model	Trust in Vendor			Online Purchase Intention		
	Autocorrelation Statistics	Collinearity Statistics		Autocorrelation Statistics	Collinearity Statistics	
	Durbin-Watson	Tolerance	VIF	Durbin-Watson	Tolerance	VIF
Information Quality		0.54	1.84		0.48	2.11
System Quality		0.53	1.87		0.51	1.97
Service Quality	1.81	0.34	2.91	2.07	0.34	2.95
Trust in Vendor		✗	✗		0.39	2.59
Web Skills		0.76	1.31		0.76	1.32

To test this result further, this study has considered histograms of standardized residuals for the two dependent variables in this study: trust in vendor and online purchase intention. The histograms representing the two dependent variables have shown that the data is normally distributed. The normal P-P plot also shows that points were not entirely on the line, but very close. These results suggest no considerable issues regarding autocorrelation and multicollinearity. The full results can be found in Appendix 2.3.

5.9. Common Method Variance (CMV)

This section presents the methods used to detect and nullify common method variance in the current survey research. As defined by Malhotra, Kim and Patil (2006) and Hulland, Baumgartner and Smith (2018), common method variance is the amount of spurious covariance exchanged between variables due to the common method used to collect data. One should not possess any such bias resulting from the use of the common method for collecting data. The factor analysis model is recommended to identify and vanquish any common method variance (Lindell and Whitney, 2001; Sharma, Yetton and Crawford, 2009). The study relationships can be prejudiced by CMV and therefore a CFA marker technique has been followed.

Richardson, Simmering and Sturman (2009), Williams, Hartman and Cavazotte (2010), Simmering *et al.* (2015) and Hulland, Baumgartner and Smith (2018) strongly suggest using a CFA marker technique instead of the single factor test of Hartman so that CMV can better be examined. According to Williams, Hartman and Cavazotte (2010) and Hulland, Baumgartner and Smith (2018), a marker variable has to be theoretically dissimilar and should not have any conceptual similarity with the latent constructs of a study. The current study has chosen internal moral perspective as the marker variable to deal with common method variance. This study has considered the suggestions given by the aforementioned research studies to ensure the correct selection of a marker variable with no similarities with the constructs of the study. There are a total of five models

where the first model is CFA with a marker variable with six latent variables. A value of 0 was set on all the 21 paths from the marker variable to the items of substantive variables. Besides, six associations are checked between the substantive variables and the method by fixing the path significances as zero. The output from the CFA, including the regression weights and variances of the errors, are fixed for the items of the marker variable. After that, all the factor loadings of the 21 substantive items from the marker variables are constrained to be equal, as noted in the Model-C or constrained model. During the assessment of the Model-U, or unconstrained model, all the factor loadings of the 21 substantive items from the marker variables are freely evaluated. Finally, the values obtained from the earlier baseline model are fixed for the covariances of the substantive variables from the unconstrained model in the restricted model or Model-R testing.

As illustrated in Table 5.18, shared CMV is evident between the items of the substantive and marker variable because the Model-C fit is significantly better than the baseline model ($\Delta\chi^2$= 233.157, Δdf= 1, p= 0.001). The Model-U fit is significantly better than Model-C which indicates that CMV was not the same for all the items ($\Delta\chi^2$= 68.443 Δdf= 20, p= 0.001). However, the results also denoted that Model-R did not fit significantly better than the unconstrained model ($\Delta\chi^2$= 17.533, Δdf= 15, p= 0.288), meaning that CMV did not skew the associations among the substantive factors (Williams, Hartman and Cavazotte, 2010; Shuck, Nimon and Zigarmi, 2017).

Table 5.18. Model Comparisons for CFA with Marker Variable

Model	χ^2 (df)	CFI	RMSEA (90% CI)	LR of $\Delta\chi^2$	Model Comparison
CFA with Marker Variable	717.030 (256)	0.962	0.053 (0.048, 0.058)		
Baseline	915.052 (270)	0.946	0.061 (0.057, 0.065)		
Method-C	682.895 (269)	0.966	0.049 (0.044, 0.053)	232.157, df= 1, p= 0.001	vs. Baseline
Method-U	614.452 (249)	0.970	0.048 (0.043, 0.053)	68.443, df= 20, p= 0.001	vs. Method-C
Method-R	631.985 (264)	0.969	0.047 (0.042, 0.051)	17.533, df= 15, p= 0.288	vs. Method-U

Note. CFA = Confirmatory Factor Analysis; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; LR = Likelihood Ratio Test; U = Unconstrained; C = Common; R = Restricted.

5.10. Structural Model Results

After successful validation of the measurement model, the testing phase of the structural model takes place. The structural model tests the conceptual model as a whole and the postulated hypotheses are checked. Associations among the constructs of the proposed research model are analyzed by the structural model, in addition to the measurement model analysis. The structural model is an amalgamation of the measurement model as well as a path model that provides causal relationships between variables (Anderson and Gerbing, 1988; McDonald and Ho, 2002). Therefore, it can describe the links between

the latent variables and also consider the measuring variables representing each latent variable of the proposed model.

As explained in the methodology chapter, the current study has employed SEM as the analysis method instead of the traditional regression analysis. This decision is due to the superiority of the SEM with regards to flexibility and its ability to provide deeper insights, not only in terms of construct relationships but also in relation to the theoretical understanding of the conceptual model in this study, which is derived from two background theories. Further, the SEM allows the examination of the entire model, including individual relationships. This enables the SEM to produce precise results regarding the construct relationships that form the theoretical underpinnings of the research.

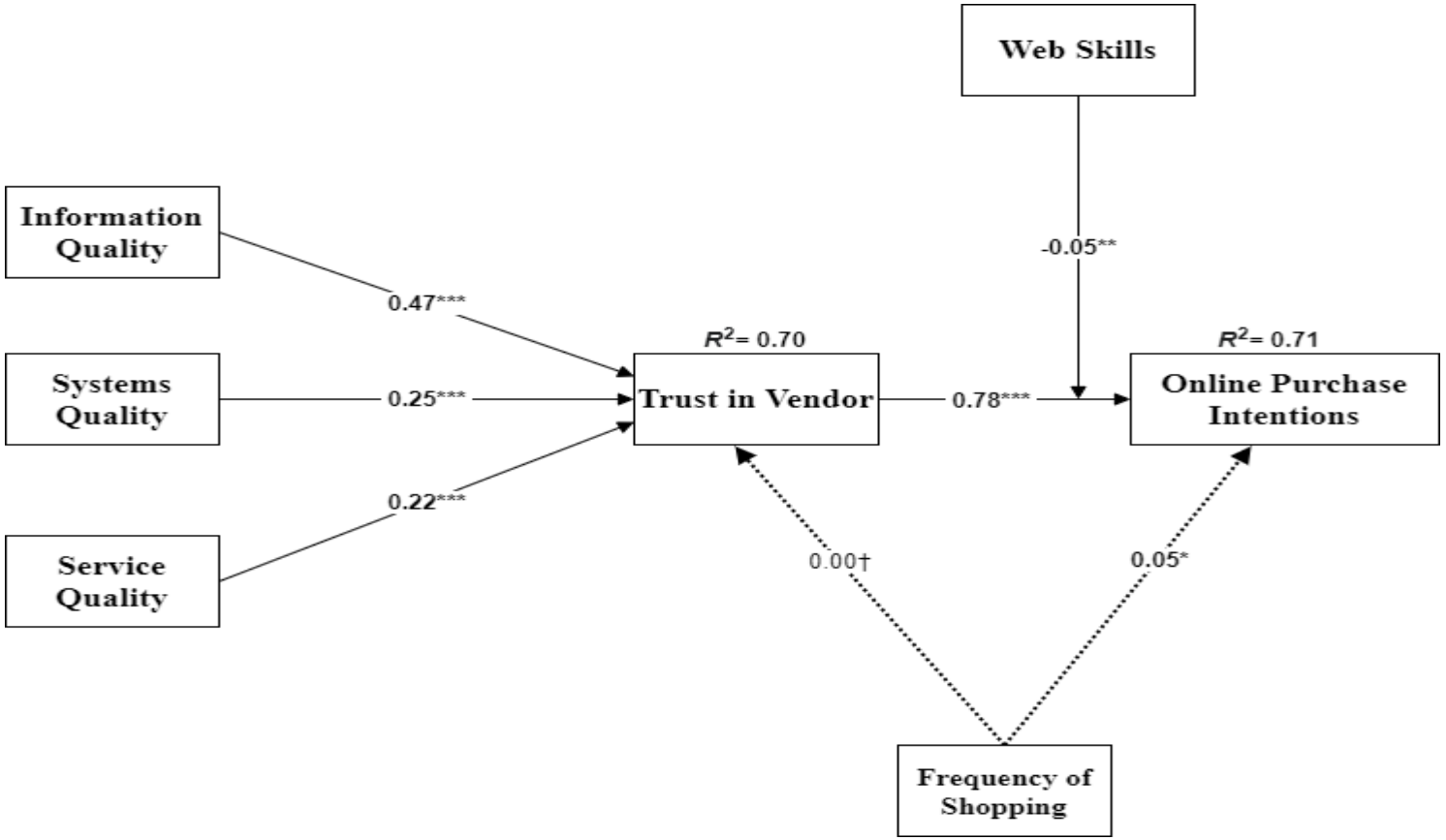
A covariance-based SEM has been conducted to assess the structural model using the AMOS 26.0 package. With regards to the moderation effects, the current study has followed the procedure suggested by Ping (1995) to include mean-centered constructs to calculate the loadings and variances of the interaction terms. This procedure has been used to test the H5 hypothesis representing the moderation effect of customer web skills. This multiplicative approach to the SEM minimizes the potential for any multicollinearity problem that may exist. Then, following the technique suggested by Baron and Kenny (1986), the mediating effects of trust in the vendor were tested.

The results of the structural model are discussed in the following sections and the fit indices for the research model are also evaluated. Then, based on the findings of the research model, individual hypotheses are tested. Finally, mediation tests were performed to see if the trust in vendor mediates the relationship between the antecedents (i.e., quality factors) and the dependent variable (i.e., online purchase intentions).

5.10.1. Structural Model Assessment

To analyze the proposed relations of the conceptual model, the structural model was run and gave standard goodness-of-fit statistics: Chi-square (χ^2) = 437.725, $p < 0.001$, df = 150; χ^2/df =2.92; NFI =0.95; NNFI = 0.97; CFI =0.97; RMSEA = 0.05. The assessment of these indices indicates that there is no further requirement for adjusting the model fit indices. As indicated by the guidelines in the literature (Byrne, 2006, 2010), one control variable was employed to be associated with independent variables to provide better parameters for the study model. This procedure also showed that the model has no intercorrelation bias (Field, 2005). The effects of the structural model are shown in

Figure 5.8, while the path coefficients between variables and the variances of mediating and outcome variables are also summarized in Table 5.19.



Note. Significance Level: † p < 0.100; * p < 0.05; ** p < 0.01; *** p < 0.001

Hypothesized Paths

Control Paths

Figure 5.8. Structural Model

5.10.2. Analysis of the Hypothesized Structural Relationships

H#	Hypothesized Association	β (t-value)	Results
	Direct Effects		
H1	Information Quality → Trust in Vendor	0.47 (9.11***)	✓
H2	System Quality → Trust in Vendor	0.25 (5.48***)	✓
H3	Service Quality → Trust in Vendor	0.22(4.04***)	✓
H4	Trust in Vendor → Online Purchase Intentions	0.78 (20.51***)	✓
	Moderating Effects		
H5	Web Skills × Trust in Vendor → Online Purchase Intentions	-0.06 (-2.62**)	✗
	Control Paths		
	Frequency of Shopping → Trust in Vendor	0.00 (-0.14)	
	Frequency of Shopping → Online Purchase Intentions	0.05 (2.07*)	

Notes. Goodness-of-Fit Statistics: Chi-square (χ^2) = 437.725, p <0.001, df = 150; Normed Chi-square (χ^2/df) = 2.92; Normed Fit Index (NFI) = 0.95; Non-Normed Fit Index (NNFI) = 0.97; Comparative Fit Index (CFI) = 0.97; Root Mean Squared Error of Approximation (RMSEA) = 0.05

R-squared: TV= 0.70; OPI= 0.71

Significance Level: *p < 0.05; **p < 0.01; ***p < 0.001

5.10.2.1. Information Quality and Trust in Vendor

Hypothesis 1: Information Quality is positively related to Trust in Vendor.

For Hypothesis H1 it is argued that information quality would be positively associated with trust in the vendor. This hypothesis test verified a significant relationship between the two variables (β = 0.47; t= 9.11; p < 0.001). Therefore, this indicates that the Hypothesis H1 in this research is supported. The significant relationship between these two constructs indicates that an improved level of information quality would lead to a higher degree of trust in the vendor.

This result is also supported by the existing research (e.g., Beldad, De Jong and Steehouder, 2010; Zhou, 2012, 2013; Kim and Peterson, 2017; Geebren, Jabbar and Luo, 2021) which has indicated the direct effect of information quality on trust in vendors in the context of e-commerce.

5.10.2.2. System Quality and Trust in Vendor

Hypothesis 2: System Quality is positively related to Trust in Vendor.

The next hypothesis of the study, H2, postulates that system quality positively influences trust in the vendor. Since the effect of this relationship is significant at the 0.1% level i.e., $\beta = 0.25$; $t= 5.48$; $p < 0.001$, Hypothesis H2 for this research has been proved. This explains that higher levels of system quality output are likely to contribute to increased levels of customer trust in the vendor.

As these results support the hypothesis of the proposed research model, it could be argued that the results are in line with the existing literature that explained the positive effects of system quality on customer trust (e.g., Petter, DeLone and McLean, 2013; J. V. Chen *et al.*, 2015; Filieri, Alguezaui and McLeay, 2015; McKnight *et al.*, 2017; Geebren, Jabbar and Luo, 2021).

5.10.2.3. Service Quality and Trust in Vendor

Hypothesis 3: Service Quality is positively related to Trust in Vendor.

The research hypothesis H3 indicates that service quality has a positive and significant impact on the trust in the vendor. This hypothesis was confirmed by the path coefficient of service quality which significantly influences trust in the vendor ($\beta = 0.22$; $t= 4.04$; $p < 0.001$). This significant relationship indicates that a higher level of service quality is likely to result in a greater degree of trust in the vendor.

The results confirm the hypothesis postulated in this study while also being supported by the existing literature (e.g., J. V. Chen *et al.*, 2015; Kim and Peterson, 2017; Oliveira *et al.*, 2017). The results support the claim that a vendor's efforts to provide high service quality are always appreciated by customers and it is also an indication that the online vendor is intending to convey the concept of integrity and trustworthiness to their customers.

5.10.2.4. Trust in Vendor and Online Purchase Intentions

Hypothesis 4: Trust in Vendor is positively related to Online Purchase Intentions.

Hypothesis 4 postulates that trust in vendor positively influences customer online purchase intentions. The results of this hypothesis are strongly supported ($\beta = 0.78$; $t= 20.51$; $p < 0.001$). The significance of this hypothesis is that it indicates that a higher degree of trust in the vendor will lead to a greater degree of customer online purchase intentions.

These results have been supported in prior studies (e.g., Bianchi and Andrews, 2012; Ashraf, Thongpapanl and Auh, 2014; Fang *et al.*, 2014; Pascual-Miguel, Agudo-Peregrina and Chaparro-Peláez, 2015) and suggest the positive and significant influence of trust in the vendor on customer online purchase intentions. Prior research has established the importance of trust as the risk alleviator, motivator and confidence-building indicator for improving customer willingness to purchase through online e-commerce channels.

5.10.2.5. Moderating Effects of Web Skills

Hypothesis 5: The impact of trust in vendor on online purchase intention is moderated by web skills, such that as trust in vendor increases and the degree of web skills increases, the effect of trust in vendor on online purchase intention becomes more positive.

As assumed in Hypothesis 5, the levels of customer web skills have shown to have some moderation effect on the relationship between customer trust and purchase intention. However, the moderating effect of web skills between trust in vendor and online purchase intention is found to be negatively significant in terms of influencing this relationship (β= -0.06, t= -2.62; $p < 0.01$). This outcome indicates that the greater the degree of customer web skills, the more the effects of trust in vendor on customer online purchase intention will be diminished; meanwhile, minimal web skills in customers seem to result in a stronger purchase intention in relation to trust. As shown in Figure 5.9, a negative moderation effect of customer web skills has been identified on the relationship between customer trust and purchase intention. The outcome assumed by Ding *et al.* (2010) and Rose *et al.* (2012) has been proven by the present results.

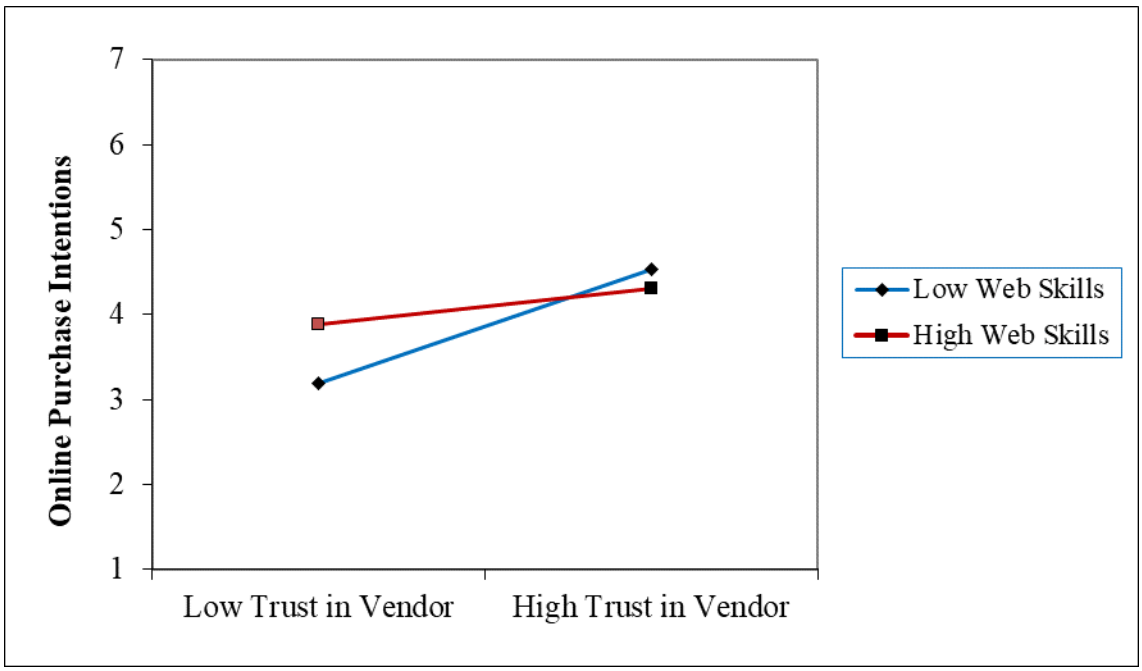


Figure 5.97. Moderating Effect of Web Skills

Lastly, to further explore the above analyses (Section 5.10.2.5) the associations between trust and vendor and online purchase intentions, under varying degrees of web skills, were drawn following the process specified by Aiken and West (1991). Particularly high values (one standard deviation from the mean values) versus low values (one standard deviation below the means value) of web skills were used to observe the relationship between trust in vendor and online purchase intentions. Figure 5.9 essentially portrays the negatively significant moderating effect of web skills between the relationship of trust in vendor and customer online purchase intentions.

5.10.2.6. Control Paths

The results for the hypotheses related to the control variable of frequency of shopping were as follows. The results showed non-significant effects of frequency of shopping on customer trust and a significant impact of shopping frequency on online purchase intention ($\beta = 0.05$; $t = 2.07$; $p < 0.05$).

5.11. Post-Hoc Mediation Analysis

After assessing the proposed associations between IS success quality factors, trust in vendor and online purchase intentions, the research continued to examine the mediating influence of trust in vendor for the relationship between the antecedents and the outcome variables. In AMOS 26.0, the mediation analysis suggested by Baron and Kenny (1986) was applied by running three further structural models, as proposed by previous studies (Bello, Katsikeas and Robson, 2010; Biraglia and Kadile, 2017).

When explaining the role of a mediating variable, Baron and Kenny (1986) suggest that a variable will serve as a mediator depending on the degree to which it accounts for the relationship between a predictor and an outcome variable. Figure 5.10 presents the causal model illustrating the mediating variable.

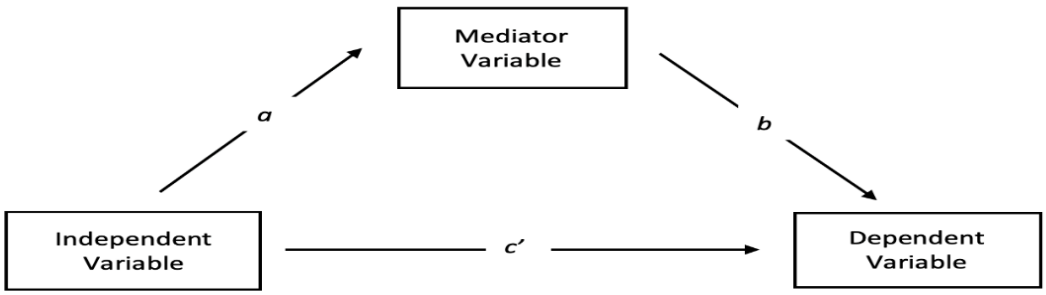


Figure 5.80. Basic Mediation Model

The basic mediation model generally contends that there are two effective routes from an independent variable (IV) to a dependent variable (DV). The first route is the immediate effect of the IV (path c'); the second route is the mediating path (M) which includes the effect of IV on the mediator (path a) and also the effects of the mediating variable on the dependent variable (path b).

Based on the above model, if the following conditions are met, a variable acts as a mediating variable: 1) if changes in IV account significantly for changes in M (as denoted by path 'a'), 2) changes in M account significantly for changes in DV (as denoted by path 'b'), and 3) a previously relevant IV-DV association is no longer considered to be meaningful when paths a and b are controlled (Baron and Kenny, 1986). This study followed an approach suggested by Baron and Kenny (1986) to assess the presence of a potential mediating effect to enhance the contributions of this research (Zhao, Lynch and Chen, 2010).

5.11.1. Model 1: Paths from Independent Variables to the Mediator Variable

First of all, Model 1 evaluated the impact of independent variables (IVs) on the possible mediator (M) and provided significant results for information quality → trust in vendor ($\beta = 0.60$, $t = 8.88$; $p < 0.001$), system quality → trust in vendor ($\beta = 0.29$, $t = 5.26$; $p < 0.001$) and service quality → trust in vendor ($\beta = 0.23$, $t = 3.93$; $p < 0.001$), as demonstrated in Figure 5.11.

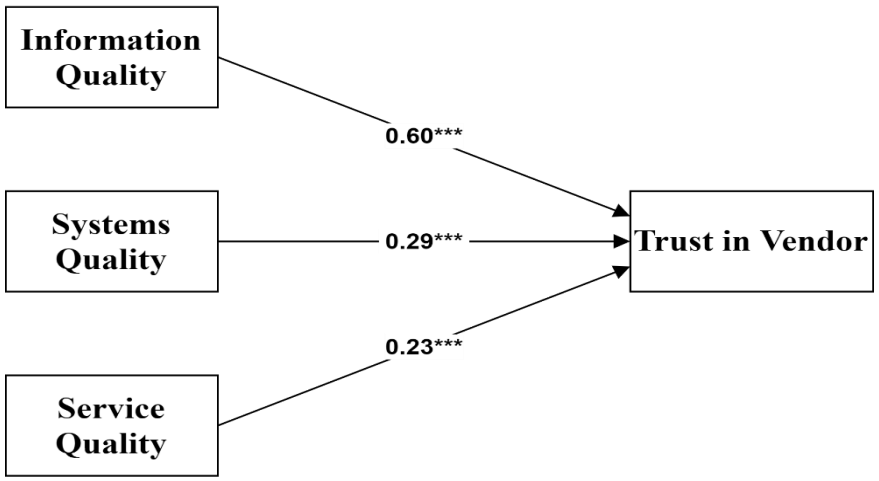


Figure 5.9. Mediation Model 1

5.11.2. Model 2: Paths from Independent Variables to Dependent Variables

Model 2 comprises the direct impact of quality factors (IVs) on online purchasing intentions (DV) and was run as a next step. The quality of information affects online purchasing intentions (β= 0.67, t= 9.49; p < 0.001), the quality of systems affects online purchasing intentions (β = 0.23, t= 4.34; p < 0.001) and service quality impacts online purchasing intentions (β = 0.21, t= 3.59; p < 0.001), as shown in Figure 5.12.

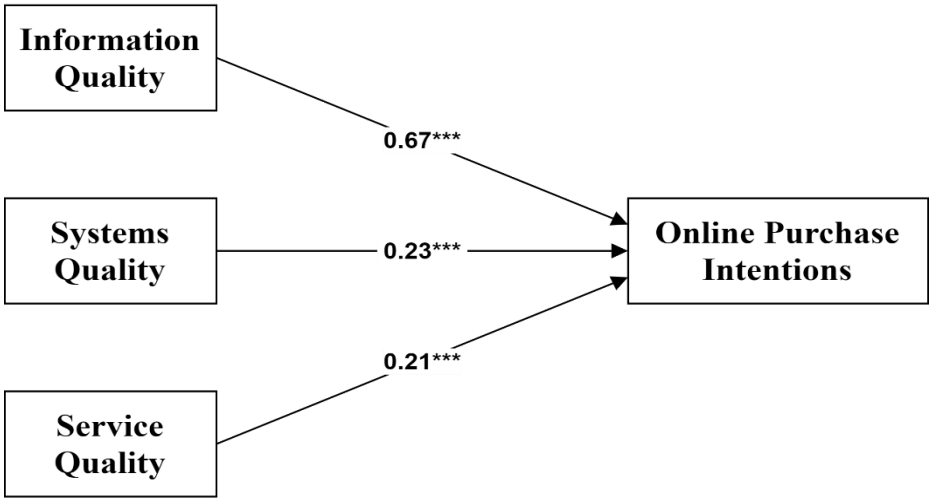


Figure 5.12. Mediation Model 2

5.11.3. Model 3: Independent Variable and Mediator to Dependent Variable

The current Model 3 has provided significant findings for the relationship between intention to buy online (DV) and trust in vendor (M) (β = 0.36, t= 6.14; p < 0.001), quality of information (β = 0.43, t= 6.14; p < 0.001), quality of systems (β = 0.13, t= 2.51; p < 0.05) and quality of service (β = 0.13, t= 2.47; p < 005), as seen in Figure 5.13.

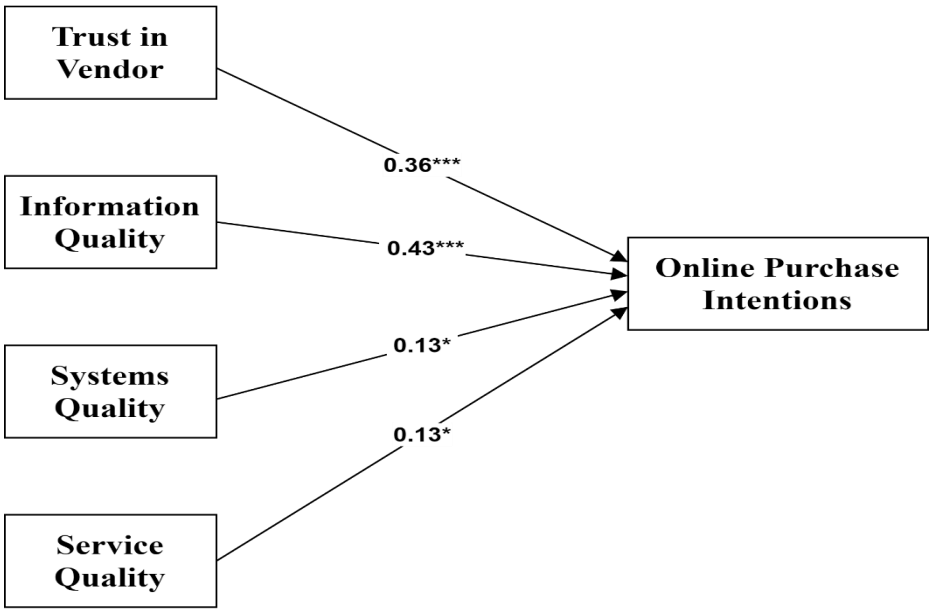


Figure 5.10. Mediation Model 3

5.11.4. Mediation Results

The mediation results indicate that the quality of information, quality of systems and quality of service are partially mediated by trust in vendor to influence online purchase intention (see Table 5.19). Chapter 6 explores these fascinating findings in more detail.

Table 5.19. Mediation Results

Relationships (IVs)	**Model 1:** Paths from IVs to M	**Model 2:** Paths from IVs to DV (Without Mediator)	**Model 3:** Effects of IVs on M and to DV (With Mediator)	**Results**
		DV (OPI)	DV (OPI)	
	β (t-value)	**β (t-value)**	**β (t-value)**	
Information Quality	0.60 (8.88***)	0.67 (9.49***)	0.43 (6.14***)	Partial-M
System Quality	0.29 (5.26***)	0.23 (4.34***)	0.13 (2.51*)	Partial-M
Service Quality	0.23 (3.93***)	0.21 (3.59***)	0.13 (2.47*)	Partial-M
M to DV (OPI) *Mediator included with Model 3 (Here IV)*			0.36 (7.28***)	

Note. Significance Level: *p < 0.05; **p < 0.01; ***p < 0.001; Partial-M: Partial Mediation

5.12. Chapter Summary

This chapter has provided detailed results for the proposed model supplemented with the data gathered from the online consumers. The chapter started by confirming there were no missing values for the data collection. It then provided a description of the sample profile, descriptive analysis of the data and data examination. The proposed research model was tested using measurement analysis and structural model analysis. Both these analysis models were found to work and perform well with the data and demonstrated adequate fit indices. The results provided further examination of variance inflation factors, common method variance and mediation and moderation analysis.

The current chapter has provided an empirical examination of the conceptual model that represents this study's theoretical integration of the two background theories. The results refer to the conceptual assumptions made by this study to explain the relationships between the three independent quality variables (information quality, system quality, and service quality) and customer trust. The effects of trust on customer purchase intentions, as well as the moderation effect of customer web skills on this relationship, are also provided. The outcomes of the hypotheses testing are summarized in Table 5.20 which confirms the overall results of this study.

Table 5.203. Summary of Results

H	Hypothesized Association	Supported	Rejected
	Direct Effects		
H1	Information Quality → Trust in Vendor	(✓)	
H2	System Quality → Trust in Vendor	(✓)	
H3	Service Quality → Trust in Vendor	(✓)	
H4	Trust in Vendor → Online Purchase Intentions	✓	
	Moderating Effects		
H5	Web Skills × Trust in Vendor → Online Purchase Intentions		✓

Note. parentheses imply partial support

CHAPTER 6: DISCUSSION, IMPLICATIONS AND LIMITATIONS

6.1. Introduction

The current chapter presents the findings of this research in relation to the existing literature. It also highlights the study's contributions to existing knowledge on the effects of web quality factors on online customer trust and purchase intention. The effects of each of the three quality antecedents on a customer's perceived trustworthiness of a site will first be discussed, providing a clear understanding of the research findings and their unique contribution to the literature. The thesis primarily examines the direct effects of three quality factors on customer trust, and the major findings of the research will therefore be associated with the following construct relationships: the effects of three quality factors on customer perceived trustworthiness; the effects of customer trust perceptions on customer purchase intention; and finally, the moderation effects of customer web skills on the relationship between customer trust and purchase intention. The study's contributions to both theory and practice will be explained based on the results of the construct relations between three quality factors and customer trust hypothesized by the present study. An account will also be given of the results for the indirect effects of three quality factors on online customers' purchase intentions through the development of trust. These discussions will explain the importance of trust in the online shopping context, by addressing the success of a shopping site in terms of developing customer trust perceptions and purchase intention. Simultaneously, the concept of success will also be defined from the customers' point of view; success is achieved when they can understand the trustworthiness of a shopping site based on their first-hand cognitive knowledge and with improved confidence as they perceive situation normality. The current study has also generated findings regarding the effect of customer trust on customer purchase intention over a moderating variable: customer web skills. The results have suggested some interesting outcomes regarding these moderation effects, particularly in terms of the moderation of customer web skills on the relationship between customer trust and purchase intention. Overall, the current chapter will confirm the value of the findings generated by this study and explain their theoretical and practical contributions to knowledge.

6.2. Effects of Web Quality on Customer Trust

Prior to a discussion of the individual conceptualizations and research background, it would be useful to discuss the statistical methods employed by the current study. The two statistical methods adopted have provided some useful insights regarding the effects

of the three quality factors on customer trust and purchase intention formation. Simply put, the results of the two analyses have suggested the role that the three quality factors could play regarding customer behaviour and decision making as it is formed by the customer's first-hand cognitive experiential knowledge of shopping sites. Particularly, the results have suggested the significance of website quality in reducing risk perceptions, while also improving perceived value to develop loyalty among customers, which can be observed in the trustworthiness perceptions and purchase intention. In the previous literature, the outcomes of the two statistical methods have suggested the importance of developing and maintaining quality shopping sites to win the lifetime equity of online customers.

In terms of the primary research results, in order to best understand the contributions provided by this study, the findings need to be discussed from two perspectives. The first perspective focuses on the construct relationships among individual construct conceptualizations. The second perspective focuses on the background support through which the results could be interpreted, using the integrated theorization developed by the present study. Regarding the construct relationships, the results have shown that the three quality factors investigated in this research are sufficient to build customer trust and purchase intentions by improving customer perceptions of trustworthiness. From the theoretical perspective, the results indicate that the success of an online B2C relationship needs to be understood in the following terms: a success scenario is when shopping sites improve customers' trust perceptions and purchase intentions, and when customers can identify trustworthy sites based on their first-hand decision making. The results of this study support this success definition, as all the hypotheses in this study have been significantly proved. The results provide evidence of the development of customer trust based on three quality factors and the effect of trust on customer purchase intention and confirm the new insights on success and trust in the present research, as well as the credibility theorization adapted for this study.

The first antecedent in this study was information quality, which has shown to have significant positive effects on online customer trust. However, this relationship was well established and expected to be significant due to the strong logical and empirical support from the online shopping literature (J. V. Chen *et al.*, 2015; Kim and Peterson, 2017). Theoretically speaking, however, this study has provided some additional insights into the effects of information quality on customer trust using the combined theorization provided by information system success and source credibility theory,

resulting in a unique trust typology. The findings related to the effects of information quality on customer trust are important to this research study, in which a shopping site is considered as an information provider and the customer is regarded as a user who seeks information to fulfil their shopping objectives and improve their shopping performance. Conceptually speaking, the timeliness, relevance, and accuracy dimensions of information quality appear to be influential in determining online customer trust. The findings support the theoretical underpinning of this study, which claims that information quality plays a role in creating situation normality to engender institution-based trust and therefore helps customers to learn the trustworthiness of a shopping site from their first-hand cognitive knowledge. The research outcome supports the literature, which highlights the importance of information quality for online shoppers as it represents the informational function carried out by a shopping website to assist customers for productive shopping (Rainer and Watson, 1995; Filieri, Alguezaui and McLeay, 2015). Online customers seem to be affected by the information quality dimensions investigated by the current study while they are developing their trust in shopping websites, as those dimensions could largely reduce risk perceptions and boost confidence. The key to informational success suggested by the existing literature partly explains the overall success of an ISSM (DeLone and McLean, 2003; Petter, DeLone and McLean, 2012, 2013). The current findings have supported the new success definition given by the present study, which is expanded to include the overall success of the two parties involved in a B2C relationship. It could also be claimed that the results demonstrate that the information quality dimensions used in this research are important in improving customer trust, as these dimensions explain how experienced credibility can enhance customers' perceived trustworthiness of a site (Chen and Dibb, 2010).

Thus, the findings have shown that information quality has a significant effect on online customer trust. In terms of this relationship, the construct results are in line with the existing literature from the online shopping context (e.g., Chen and Dibb, 2010; Wang, Wang and Liu, 2016; Agag and El-Masry, 2017) which has provided similar knowledge to explain the effects of information quality on online customer trust. Chen and Dibb (2010) have conceptualized the effects of information quality on customer trust along with website usability, which represents the interface quality and privacy and security concerns of the customers, while the customer attitude and behavioural intentions have been suggested as the consequences of customer trust. Agag and El-Masry (2017) have

examined the combined effects of PU and PEOU with website quality on customer trust with some other antecedents, whereas, the information quality and system quality could act as antecedents to two TAM beliefs (Lin, Fofanah and Liang, 2011; Pai and Huang, 2011; Xu and Du, 2018; Demoulin and Coussement, 2020). Studies such as Wang, Wang and Liu (2016) have conceptualized the indirect effects of information quality on customer trust through customer perceptions of value and satisfaction, although the information quality could directly affect customer trust by suggesting a site's expertise and ability to provide useful and effective information. There are attempts from the online shopping context to explain the effects of information quality on customer trust through some existing quality-based theorizations. For instance, studies such as Kim and Niehm (2009), Pearson, Tadisina and Griffin (2012) and Li *et al.* (2017) have empirically tested the WebQual model, suggested by Loiacono, Watson and Goodhue (2007), to explain the effects of information quality on online customers' loyalty, trust and perceived value in shopping websites. Building on these research studies, the current findings have supported the claim that, in creating situation normality, the information quality of a website could play a role to promote the two acceptance beliefs given by TAM to improve customer perceptions of trustworthiness.

There were some attempts to test the ISSM in the online shopping context, with certain studies (e.g., Lee and Kozar, 2006; Hsu *et al.*, 2014; J. V. Chen *et al.*, 2015; Wang, Wang and Liu, 2016) testing the web quality effects on users' or customers' beliefs, attitudes, intentions and perceptions in a repurchase context to explain how these user values would change over time. The quality that is perceived through the initial interaction could lead to long-term relationships with improved customer trust and is therefore important. The information quality could largely dominate this initial interaction and leave positive impressions on customers to maintain strong and long-lasting relationships. Thus, one cannot ignore the role of information quality in the long run, since customer beliefs, attitudes, and intentions are reasonably time oriented, as identified by the timeliness dimension used by this study to measure information quality support. The results of this study indeed confirm the notion that information quality, by showing credibility in terms of site expertise, dynamism and trustworthiness, could improve customer trust-related beliefs.

With regards to the background theorizations, the results have supported the theoretical assumptions made by the present study which claim that success needs to be understood from the perspective of both parties in a B2C relationship. In this thesis, trust is

developed based on the three quality factors and has effectively replaced customer satisfaction; indeed, trust is seen as necessary for successful long-term B2C relationships in the online shopping context. Thus, the findings have added to the existing literature, which have largely adopted ISSM to explain system success in terms of user satisfaction and use intention (purchase intention) (Yen and Chung, 2015; Zhou and Jia, 2018). The results of this study, on the other hand, explain that online customer trust could be understood as an indicator of the success of a site as well as the customer (Petter, DeLone and McLean, 2013; McKnight and Chervany, 2002; McKnight, Choudhury and Kacmar, 2002a) At the same time, customer trust is a strong construct that can replace satisfaction when representing both initial and repurchase scenarios (Martín, Camarero and José, 2011; Fang *et al.*, 2014; Kim, 2014; Liu *et al.*, 2020). Furthermore, the results strongly suggest that the three quality factors are highly cognitive in nature and very possibly could be assessed during the first visit to a shopping site as well as through repeated interactions (Zhou, 2012; Gao and Waechter, 2017). This idea explains the experienced credibility that could be signalled by the quality factors to result in the development of customer trust advocated by the present study.

The second antecedent factor of the current research, system quality, also proved to be a significant direct antecedent of customer perceived trustworthiness in a shopping site. Comparatively, the quantitative results of the present study suggest that system quality is more significant compared to information quality for influencing customer trust. To understand this idea, one must give credit to the important role of interaction quality that facilitates successful interaction with a site to enhance usage (Gorla, Somers and Wong, 2010; Jeyaraj, 2020; Sedera and Lokuge, 2020). The interaction quality or system quality, which is also referred to as the design quality of a system, functions to improve the informational benefits to maximize the value from a shopping site (Petter, DeLone and McLean, 2013; Jeyaraj, 2020). The system quality of a shopping site also influences the customer's service expectations of a shopping site. Further, the results support the claim that customers' perceptions of ease of use and usefulness, which are conceptually associated with system quality, do play a role in improving customers' overall perceptions of service quality to improve their perceptions of trustworthiness with a shopping site (Ding, Hu and Sheng, 2011; Petter, DeLone and McLean, 2013; Wen *et al.*, 2014; Venkatesh *et al.*, 2017; Singh and Söderlund, 2020).

Based on the findings, it can be claimed that the elements considered by the current study – system design, navigation quality, ease of use, and the flexibility dimensions of system quality – proved to be effective in influencing customer trust perceptions towards shopping sites. Research studies by J. V. Chen *et al.* (2015) and McKnight *et al.* (2017) have explained the effects of system quality on online customer behaviour and decision making. In contrast to the existing research studies that have explained the effects of system quality, this study has confirmed that system quality, as represented by the aforementioned dimensions, could signal experienced credibility to improve customers' perceived trustworthiness of a shopping site. Importantly, system quality also largely explains the dynamism of the site, in addition to creating situation normality to improve customer trust. Thus, it not only represents experienced credibility but also suggests surface credibility (Zhou, 2012; Lowry, Wilson and Haig, 2014). Thereby, this study claims that customers could perceive shopping sites with a high level of system quality as professional and genuine sites; thus, customers would improve their perceptions of dependability and trustworthiness beliefs towards such shopping sites.

Theoretically speaking, the current research is the first attempt within online shopping literature to explain the influence of system quality on customer trust using a combination of ISSM and SCT. From an IS success point of view, the results of this study could be understood as follows: a shopping site could explain its trustworthiness through the three quality factors, as these three factors could explain the experienced credibility of a shopping site. From an ISSM point of view, the results could indicate that shopping sites, by improving customer trust beliefs through the level of site quality, could improve customer purchase intentions (DeLone and McLean, 2003; Petter, DeLone and McLean, 2013). From the SCT point of view, the experienced-based credibility, which could be learned through customers' first-hand cognitive experiential knowledge of the system quality of a shopping site, could improve customer trust (Tan, Wang and Tan, 2019; Hsieh and Li, 2020; Wallace, Wegener and Petty, 2020). Combining these ideas together, the overall success of a B2C online relationship could be explained by system quality as it helps shopping sites to improve customer trust and purchase intention, as well as assisting customers to make first-hand decisions to identify professional shopping sites.

The third antecedent of the current study, the service quality, plays a vital role in representing the overall quality of the site, that not only includes service-related aspects,

but also the information and system related facets. In the findings, service quality showed a significant positive influence on customer perceived trustworthiness. As discussed previously, these findings have improved knowledge of the effects of service quality on online customers' trust with regards to explaining how the experienced credibility of a shopping site can improve customer trust. The idea of including service quality to explain shopping sites' success in terms of their credibility has been supported by the results. Based on the existing literature, as well as the results of the two statistical review methods used in this study, service quality has unsurprisingly been proved as a significant antecedent to customer trust perceptions; when interpreted through the trust and success theorizations proposed by this study, the results demonstrate the significant role of service quality.

With regards to the background theorization, the results of the present study could be interpreted and understood using either of the two theories referenced in this study. The online shopping literature has provided strong empirical examination of the effects of service quality on online customers' attitudes and behavioural intentions. Prior research studies (e.g., Filieri, Alguezaui and McLeay, 2015; Wang, Wang and Liu, 2016; Agag and El-Masry, 2017; Mustafa, Kar and Janssen, 2020) have explained the effects of service quality on online shopping customers. Yet none of these studies has explained the importance of service quality in influencing experienced-based source credibility to develop online customers' trust. The focus of the existing literature in the online shopping context that has used the ISSM conceptualization to capture the effects of service quality is largely based on explaining customer satisfaction and use intentions. While some attempts were made to explain customer trust by applying ISSM theorization, no research has explained how service quality could be responsible for situation normality to improve customer trust. In terms of source credibility theorization, other kinds of source credibility (i.e., third-party oriented or reputation-based or peripheral credibility), could act as signals to explain the service quality of a shopping site. As discussed in Chapter 2, the majority of the existing research has extended this line of thinking; in contrast, the present study has explained the effects of service quality in signalling experienced credibility to improve customers' trust. The emphasis is on the necessity of customer decision-making based on first-hand cognitive knowledge for the creation of successful long-term B2C relationships.

The results of this study are in line with the knowledge provided by Jeon and Jeong (2017); while explaining the effects of service quality on customer satisfaction and

customer loyalty intentions, the authors claim that website functionality, customization and the reputation of the site act as antecedents to customer perceptions of service quality. These elements refer to the prior knowledge of a shopping site. The findings of the present study additionally demonstrate that when customers are provided with better information quality and system quality, the effects of service quality on customer trust will be stronger, even in the absence of any external third-party sources or during a first interaction. Thus, current research strongly supports the updated conceptualization provided by DeLone and McLean (2003) which includes service quality as the key dimension that represents the overall quality of a shopping system, and also includes the information and system quality aspects as they are part of the service offered by the shopping site. The present study therefore places stress on the importance of service quality, which has become more vital, as the shopping systems include both informational and transactional functions within a single site. The findings related to service quality are in line with those of Balakrishnan and Dwivedi (2021) who explain the importance of service quality in representing technical aspects of a system to improve users' cognitive absorption, which will create a state of deep interaction to build users' trust in a system. This understanding strongly supports the trust theorization of the present study with regards to the concept of situation normality.

Furthermore, the findings support the original assumption made by this research that service quality should not just be considered through its tangible aspects, such as customer assistance, product delivery, or other service-related concerns. Instead, the service quality needs to include broader dimensions that reflect the value that customers expect given the time and efforts they spend on the site for various shopping purposes. Thus, it is when customers have a positive experience of using the shopping site to fulfil their shopping objectives that they improve their trust, as they comprehend the trustworthiness from their first-hand experience. Thus, the results suggest the vital role of service quality for long-term successful B2C relationships.

Summarizing the effects of the three quality factors on customer trust, this study claims that the integration of ISSM with SCT provides strong theoretical support for the relationship between website quality and customer trust. The success understanding derived from ISSM integrated with the credibility theory has helped to address the gaps relating to the effects of three quality factors on customer trust, by providing a new theoretical perspective. This perspective has led to a new understanding of success through the development of customer trust. In terms of the constructs, the findings of

this study explain the role of each one of the three quality dimensions in determining the success of a shopping site in relation to developing customer trust. The results indicated that information quality plays a role in terms of allowing customers with various informational needs to obtain the necessary knowledge to use a shopping site for shopping activities. Meanwhile, system quality represents the interface and navigation quality that helps the customers by enhancing the usability and flexibility of a site and improving shopping productivity and customer performance. In fact, the findings suggest the role of system quality as a key construct, as it enhances the effects of information quality while acting as a significant antecedent to trust by reducing the efforts required by a customer to use the site. Further, these two antecedents also allow customers to develop a perception of the service levels of a shopping site. Finally, the service quality, which represents the overall quality that a customer perceives from his or her experiences of shopping with a site, includes not only service-related aspects but also informational and design aspects which represent the informational, hedonic, social and transactional benefits. Thus, as theorized by this study, the three quality factors are proved to enhance customer trust by suggesting the credibility of a shopping site.

To conclude, the findings indicate that the three quality factors examined in this study are crucial for shopping sites. They signal experienced-based credibility to explain the trustworthiness of a shopping website to improve customer trust and purchase intention. The development of customer trust takes place as the customers perceive situation normality based on the three quality factors and begin to learn the trustworthiness of shopping sites by themselves. By fulfilling the informational, navigational, social, hedonic and transactional needs that a customer requires from a shopping site, these three quality dimensions act as first-hand experience-based cognitively learned cues. These cues signal the experience credibility and trustworthiness of a site and improve customers' trust by the creation of situation normality that represents institution-based trust.

6.3. Customer Trust Effects on Purchase Intention

Representing the conclusive relationship of the current study, the effects of customer trust on purchase intention provides some interesting findings. As mentioned in Chapter 2, exploring the relationship between these two constructs is very popular in any context of the MIS literature and it has been examined several times in the online shopping context from different theoretical backgrounds (Ashraf, Thongpapanl and Auh, 2014; Fang *et al.*, 2014; Elwalda, Lü and Ali, 2016; Hajli, 2020). The two constructs are also

very prominent when representing online customer beliefs and behaviour, and they play decisive roles in determining online customers' willingness to depend on shopping sites. Thus, the significance of this relationship suggests how firmly the customers need to believe in the ability, benevolent nature and competence of a shopping site to be involved in an online B2C relationship.

From the ISSM perspective, this relationship could be understood as follows: having won the customer's trust by showing institution-based trust derived from the three quality factors, shopping sites could improve customer purchase intention, which in turn represents success to both the shopping site as a business vendor and success to the customer as a user, as he or she is able to make decisions on their own. Whereas, from the viewpoint of the SCT theorization, the relationship could be defined in the following terms: customers build purchase intention as they understand the credibility and trustworthiness of a shopping site due to their first-hand cognitive knowledge, as influenced by the three quality factors.

From the results obtained, it has been proved that trust is effective in determining OPI, and these findings are in line with the weight analysis and meta-analysis (Appendices 1.9 and 1.10), which provide the cumulative objective knowledge derived from the existing literature. Contributing to the existing literature, the relationship observed in the findings between customer trust and online purchase intention supports the integrated theorization made by this study, which claims that to gain mutual value in an online B2C relationship, shopping sites need to maintain quality while customers need to make decisions on their own. Furthermore, the outcome of the combined theorization, which forms this study's conceptual model, is that the three quality factors have an impact on the purchase intention of the customer through the building of trust. In terms of the indirect effects of this study, the relationship between trust and OPI is also key to the effects of the three quality antecedents on purchase intention.

Thus, the present research has successfully examined the relationship between trust and OPI using the combined conceptual integration adapted from ISSM and SCT. The current study is the first to combine these two theorizations to explore the effects of customers' trust on their purchase intention. As discussed, the relationship between trust and purchase intention has been supported by both of the background theories.

6.4. Mediation Results

The current section discusses the findings related to the indirect effects of the three quality antecedents on customer purchase intention via trust. Although the indirect effects of the three quality antecedents on customer purchase intention have not been hypothesized by this study, in addition to the SEM, a well-known technique called post-hoc mediation analysis has been used. This technique was suggested by Baron and Kenny (1986) and Zhao, Lynch and Chen (2010), and has been adopted to test the indirect effects of three quality factors from ISSM on purchase intention through the building of trust. The direct effects of these antecedents have already been tested and proved significant within different contexts of MIS research, including online shopping; the reason for examining the indirect effects is to explain the significance of customer trust for successful B2C relationships using the integrated theorization.

Significant partial mediation results suggest that the three quality factors influence purchase intention through trust. These results could be understood in different ways, and in a sense they reflect the theorization of TRA and TPB given by Ajzen and Fishbein (1972, 1977, 2000) and Fishbein and Ajzen (1975). This is the case because the three quality factors could act as attitudinal beliefs to establish customers' trust to form their purchase intention. The factors also represent behavioural control beliefs and play a similar role in promoting customers' trust and purchase intention.

At the same time, the current results could also be understood as a form of the acceptance beliefs PU and PEOU given by TAM (Lin, Fofanah and Liang, 2011; Pai and Huang, 2011; Rana *et al.*, 2015) to influence customer trust and then affect online customer purchase intention. Thus, the mediation results of this study could also be interpreted from the perspectives of the customer acceptance understanding given by TAM and the customer behavioural understanding of TRA and TPB.

However, the mediation results are not stronger than the direct effects, and do not contradict the primary focus of the current study that is concerned with the direct effects of the three quality factors on customer trust and the direct effect of trust on customer purchase intention. Thus, the mediation results of the present study serve to complement the primary results of this study and strengthen the assumptions made with regards to the significance of customer trust. The findings indicate that customers who perceive high information quality, system quality, and service quality will improve their trust, and the trust resulting from the three quality factors will have a significant impact on

customer purchase intention. It is possible that the three quality factors could improve customer purchase intention alone, but when the improved intention is motivated by trust, the possibility of a relationship will increase as trust is the key for any sort of B2C relationship. For this reason, customer first-hand decision making is important in the long run. Customers could show impulse purchase behaviour when they perceive high quality sites, but trust plays an important role in long-term B2C relationships and should not be overlooked.

The results of the post-hoc mediation analysis support this idea, as the effect of the three quality factors on customer purchase intention have reduced when trust is acting as a mediator compared to the direct effects of the three quality factors on customer purchase intention. This clearly indicates the importance of trust over purchase intention and thereby suggests the necessity of nurturing customer trust. Thus, the results of this study indicate that shopping sites must not focus on purchase intention while neglecting trust. The inclusion of trust as the mediator has reduced the effects of the three quality factors on OPI, suggesting that trust is a more significant factor than OPI in the online shopping context as far as the site quality is concerned. It can therefore be assumed that the three quality factors are not only effective in short-term relationships between customers and shopping websites, but also help to foster long-term relationships by improving customer trust in shopping websites. The conclusion that could evolve from this finding is that shopping sites need to consider the website quality as a mechanism to build customer trust to maintain long-term relationships, rather than attempting to improve use intentions by satisfying the customers. Thus, satisfaction as theorized by DeLone and McLean (1992, 2003) needs to incorporate the concept of trust, as suggested by Petter, DeLone and McLean (2013), to explain the customer purchase intention that could ideally represent the net benefits given by ISSM. This idea is also supported by the SCT theorization, where customers need to develop an understanding of shopping sites' expertise, dynamism, and trustworthiness in order to be convinced to start a B2C relationship.

In conclusion, to achieve overall success that brings value and equity to both sides of a B2C relationship, the development of purchase intention needs to come from customer trust that is built from the website quality of a shopping site.

6.5. Moderating Effects

The current research has identified some interesting insights regarding the moderating effects of customer web skills. In particular, the customer web skills showed a negatively significant moderation. This moderation has provided some deeper insights into the relationship between customer trust and purchase intention, suggesting that customer web skills need to be compensated with other factors to explain the effects of customer trust on online purchase intention.

6.5.1. Moderating Effects of Web Skills

The moderator that has been hypothesized in the current study is customer web skills. The findings suggest some fascinating insights regarding this moderating variable. A negative moderation of customer web skills on the relationship between trust and purchase intention was not expected. It was assumed by this study, based on the suggestions made by Jarvenpaa, Tractinsky and Saarinen (1999), Novak, Huffman and Duhachek (2003), Hoffman and Novak (2009) and Rose *et al.* (2012), that customers with high web skills would improve their purchase intention over trust more strongly than the customers who showed limited web skills. The logic is derived from the idea that customers with high web skills usually tend to be proactive as well as assertive in decision making, as they have knowledge and skills that they have acquired over the years. Further, customers with proficient web skills usually have lower risk perceptions and make their own decisions. Whereas customers with low web skills may possess higher risk perceptions and depend more on third-party sources compared to highly skilled customers. Thus, customers with low web skills could not easily gain trust to build purchase intentions.

Interestingly, the findings did not correspond with this study's postulations. Instead, the web skills showed a significant negative moderation on the relationship between customer trust and purchase intention. There are some possible reasons to justify this negative moderation effect. One reason could be the product type that has been used in the current research, which is the online furniture product. Furniture products possess the characteristics of experience goods, as well as the tangible characteristics of a consumer product. Thus, they are mainly purchased at brick-and-mortar stores after customers have confirmed the purchase by personally supervising the transaction with their physical presence. Unlike the cases with other kinds of product types online, such as electronics and cosmetics, online customers may behave differently when they purchase furniture online. Thus, one understanding that could generate from this line of

thinking is that the customers with web skills may not only use their general Internet-based information system usage skills, but also their experience and web skills in assessing the product type used in this study; thus, the highly skilled customers may not improve their online purchase intention based on their perceived trust compared to the customers with less skills. Another understanding that could derive from this situation is that customers with high web skills understand the intangible and tangible characteristics associated with the furniture product, and perceive the nature of the product-related informational benefits they can expect from such a shopping site and therefore, even with their improved trust, may not be ready to purchase online but rather prefer to purchase from brick-and mortar shops.

The findings suggest the possibility that customers with high web skills are not influenced by trust while developing their purchase intentions. This is because the risk perceptions of such high web skilled customers will be low. Thus, the role of trust could play a more significant role in the case of low web skilled customers in reducing risk perceptions, and therefore improve purchase intention with a shopping site, when compared to the customers with higher levels of web skills.

Although customers may build trust with the given website as a result of the three quality dimensions or based on their prior experience with the given site, the customers' web skills proved to reduce the effects of trust on purchase intentions in the case of customers with high skill levels. This outcome also explains that customers who have high web skills do not necessarily require trust in a shopping site to improve purchase intention; they rather could be convinced to make a purchase intention with low levels of trust.

6.6. Research Contributions

The findings of this study have provided contributions to both theory and practice. The theoretical contributions are associated with the integration of ISSM and SCT to form a combined model, along with the trust theorization derived from e-commerce relationship behavioural psychology. The practical contributions are related to the necessity and importance of the development of high-quality shopping sites to maintain long-term relationships with customers. Specifically, construct relationships between the three antecedents, trust and purchase intention have been demonstrated. There is also a new contribution relating to the moderating effect of customer web skills in an e-commerce environment.

6.6.1. Theoretical Contributions

To the best of the author's knowledge, the current study is the first to integrate the information system success model with source credibility theory to explain the relationships between three quality factors, customer trust and purchase intention. The current research has provided some theoretical contributions with regards to the integration of two background theories as well as concerning the individual theorizations. The new integrated theorization has provided a novel understanding of how success needs to be assessed in a B2C relationship. The new model also explained how the trust of online customers is necessary to build an effective shopping communication relationship for the long term. In relation to the individual theories, from the perspective of ISSM, the results suggest that when sites are provided with high levels of quality, in terms of information, system design or navigability, or service, those sites will be able to satisfy and improve use intentions to achieve net benefits that can also be comprehended in terms of the development of customer trust and purchase intention. On the other hand, from the source credibility theory perspective, the results explain how customers of a shopping site could be convinced to buy when they are allowed to make trust-related decisions on their own influenced by the site quality. Thus, the integrated theorization suggests that when sites improve the quality dimensions, they could signal a specific kind of credibility – experienced credibility – which is more important than the other types of credibility. If the shopping sites can successfully signal experienced credibility through the site quality, it would be easier for them to build customers' trust and influence purchase intentions to achieve overall success.

With regards to the trust theorization, the current study has successfully explained the two trust typologies that are involved in relating the three quality factors with the development of a customer's perceived trust in a shopping site and extending trust to influence their purchase intentions. The effects of the three quality factors on a customer's perceived trustworthiness of a site constitute the institution-based trust that represents the B side of the B2C relationship. Meanwhile the development of customer trust and purchase intentions constitute the first-hand experience based on cognitive trust that represents the C side of a B2C relationship. Thus, the results have explained how shopping sites and customers could prolong their relationship with improved mutual value to enjoy long lasting equity.

Further, the construct relationships of the current model have already been empirically tested in the online shopping context (Hsu *et al.*, 2014; McKnight *et al.*, 2017), but the use of IS success with experienced source credibility has improved the knowledge of the relationships studied, and stressed the importance of the creation of situation normality through the three quality factors. As discussed in Chapters 1, 2, and 3, the quality factors are often studied in online shopping literature along with other constructs to explain the indeterminate constructs such as customer trust and purchase intention which are central to present theorization. Contributing to the existing literature, the present study has elevated the importance of first-hand decision making in online contexts, and the role of quality-maintained sites in creating situation normality.

Recent developments in IS management literature support the findings of the current study. Review studies from MIS literature, such as Brown, Venkatesh and Goyal (2014), Fang *et al.* (2018), Kang and Namkung (2019), Haki *et al.* (2020) and Kong *et al.* (2020), have provided support to the theoretical contributions of this thesis. The findings have explained the importance of signalling the experienced credibility of a shopping site to improve customer trust via the presence of the three quality factors. The findings also proved that the success of a shopping site can be defined as being when customers build their trust from an understanding of the site's trustworthiness learned from first-hand knowledge; this process also explains the definition of success for the customer.

To explain this further from a different perspective, Brown, Venkatesh and Goyal (2014), and Baghizadeh, Cecez-Kecmanovic and Schlagwein (2020) have suggested various reasons why information systems fail. Their findings include a failure to understand or attain success in terms of improving users' or customers' trust. These studies explain that when users' or customers' expectations from a shopping system are not met, or if their experience disconfirms their expectations, this could be seen as the failure of a shopping site as an online shopping facilitator. These expectations may include a variety of aspects that might represent the tangible and intangible dimensions of customers' needs and wants. The findings of the current study suggest that customers could be satisfied and show their trust when sites maintain good information quality, system quality, and service quality. Trust has a multifaceted nature, and it is necessary to represent all the possible aspects that can facilitate the needs and wants fulfilment of online customers to improve purchase intention. This trust dimension explains how both

shopping sites and customers can achieve success and flourish in long-term B2C relationships.

Additional knowledge gathered from this study could relate to credibility theorization. The majority of the existing literature from the online shopping context that adopts the credibility theorization is based on explaining customer behaviour based on third-party credibility sources, which is strongly suggested to lead to misjudgments (Aldag and Power, 1986; Chen *et al.*, 2016; Zhou, Lu and Wang, 2016; Tan, Wang and Tan, 2019). Alternatively, the current study suggests that when customers depend on their first-hand cognitive experiential knowledge, based on the three quality factors, they could appreciate the expertise, dynamism and trustworthiness of a shopping site which could in turn improve and maintain their trust for the long term. Thus, this study explains the role of the three quality factors in explaining the trustworthiness and credibility of a shopping site and suggests that online vendors should not only depend on third-party recommendation sources or credibility signalling sources to explain their trustworthiness but also need to focus on improving their website quality to allow the customers to make their own decisions. From the customer perspective, they should make their own decisions and they should not completely depend on third-party sources; rather they need to gain first-hand experience of using a shopping site to understand the trustworthiness of the site which can be conveyed by the three quality factors.

The findings of this study also support the knowledge provided by Zhou, Lu and Wang (2016) and Kong *et al.* (2020), by highlighting the two broad dimensions that are involved in the development of trust in a B2C relationship. These research studies explain the involvement of societal and technical enablers that are important for the success of an online business. The results of the current study insist that careful development of website quality is necessary to propagate experienced credibility, in addition to the peripheral or reputed credibility highlighted by a number of studies (Bansal, Zahedi and Gefen, 2015; Zhou, Lu and Wang, 2016; Kang and Namkung, 2019; Tan, Wang and Tan, 2019). Such quality development will improve the cognitively learned trust that results from first-hand experience, and which is so effective for maintaining long-term successful relationships with customers. The other types of credibility, such as surface credibility, peripheral credibility or reputed credibility, are useful in attracting new customers (Lowry, Wilson and Haig, 2014; Chang, Hsu and Lan, 2019; Ismagilova *et al.*, 2020). Considered together, the present

study serves as an upgrade to the existing knowledge by suggesting the role of first-hand decision making in addition to third-party dependence to enhance the quality of a B2C relationship.

The findings of the current study have also explained the role of each of the three quality dimensions for the effective development of customer trust and purchase intention. As discussed previously, all three dimensions used in the current study proved to be significant in developing customer trust and purchase intention. The theoretical integration between ISSM and SCT has therefore successfully explained the direct and indirect effects of three quality factors on customer purchase intention developed through trust. These mediation results provide conclusive outcomes from both individual theorizations in addition to the direct effects. Theoretically, the indirect effects that included the direct impacts have explained the behavioural theorizations given by TRA and TPB, as well as their adaptations in the field of MIS technology acceptance such as TAM.

6.6.2. Implications for Practice

The findings of this study need to be understood from the perspective of shopping sites as well as customers' perceptions. The findings have clear implications for shopping site developers, as they suggest the importance of maintaining long-term relations with customers; these long-term relations can be achieved by nurturing customer trust, which can in turn be accomplished by maintaining high quality websites. The results have provided some interesting implications for both parties involved in an online B2C relationship. The empirical findings re-confirm the significant impact of the three quality factors on customer trust, whereas the theoretical findings explain the importance of quality factors to signal site credibility from the first-hand experiential knowledge of the customers. Therefore, this research suggests that in addition to relying upon the third-party credibility signalling sources, which could play a role in attracting new customers and sometimes help to retain them, shopping sites must ensure that they show their trustworthiness through the three quality factors to improve customer trust in the long run. In terms of the theoretical findings, the role of experienced credibility proved to be more prominent than the other kinds of credibility. This has been thoroughly explained as the selection of constructs in the present study are being tested using the integrated theorization to explore the possibility of signalling expertise and dynamism, and to determine how these factors improve customer perceptions of trustworthiness based on the three quality factors. The trust typography used in the

present study further confirmed that the three quality factors act as signals to promote institution-based trust by creating situation normality. This enables customers to take trust decisions based on their first-hand experiential cognitive knowledge. The site quality, therefore, acts as an enabler to help customers make their decisions, which indeed play a role in confirming their expectations resulting from the third-party sources. In the case of small, unpopular, or unfamiliar shopping sites, the role of site quality is even greater and could even help the vendor to achieve competitive advantage with minimal third-party associations. This scenario further enhances the decision-making abilities of customers to provide overall success.

The research findings explain how shopping websites can allow customers to make their decisions based on their personal cognitive experiences resulting from information quality, system quality and service quality. The significant impact of the three quality factors on customer trust explains that, in order to achieve long-term success, shopping sites need to focus on building and improving high quality sites in addition to depending on third-party, reputation-based sources. This thesis has explained the role of each one of the three quality dimensions to determine customers' trust and purchase intentions. Site developers need to understand the role of information quality as a key factor that allows the customers to make decisions related to products and services offered by the vendor with timely, relevant, useful information. The objective of this information must be to assist customers in achieving their informational and shopping expectations. The system quality needs to allow the customers to navigate the site with flexibility and ease to improve their access and provide them with a functional user experience that fulfils different shopping purposes to help them achieve their shopping objectives (Rana *et al.*, 2015; Xu and Du, 2018; Al-Fraihat *et al.*, 2020). With reference to the service quality, online vendors need to provide an e-service that represents both the online and offline service aspects that a customer expects from the shopping site. Thus, the service quality will promote the perceptions of achievement so that the customers can be convinced to become involved in an online B2C relationship. Likewise, when the three quality factors are competitively present to convey the expertise, dynamism, and trustworthiness of a shopping site, customers' trust with the site will improve and they are more likely to improve their purchase intention and maintain a long-term relationship with the site.

Concerning the customer dependence on third-party sources, the findings of this study explain that, when trying to understand the trustworthiness of a shopping website,

depending on third-party sources can help customers to make decisions. The three quality factors could also help customers develop a good understanding, as these factors could explain a shopping site's expertise and trustworthiness as perceived by the customers themselves. Thus, shopping sites need to ensure the management of the three quality factors in addition to third-party sources such as customer reviews and other types of e-WOM on social media. At the same time, these findings suggest that for customers to understand the trustworthiness of a shopping site, they must not completely rely on third-party sources, but should make some efforts to assess trust using the three quality factors of a site. Further, to enhance purchase intention with a shopping site, this study suggests that the trust that a customer derives from the three quality factors needs to be considered as vibrant, when compared to the trust that is built from the beliefs and attitudes they may form from third-party credibility signalling sources.

The thesis findings, particularly the significant effects of the three quality factors on customer trust, have explained the role of website quality to improve B2C relationships. Unlike other types of credibility, the experienced credibility does not need any third-party dependence as it could largely be learned from customers' first-hand cognitive experienced knowledge. To summarize, the practical findings that could result from this study largely relate to the maintenance of sites in terms of information quality, system quality, and service quality. Further, to address the conflicting nature of reputed credibility for determining the trustworthiness of a shopping site, as suggested by Tan, Wang and Tan (2019), this approach could be replaced instead with the effects of the three quality factors on customers on the basis of first-hand experienced-based source credibility understanding.

The findings of the present study also have implications for the shopping sites and customers, with regards to a prominent organizational practice that has evolved over the Internet. While explaining online customer trust in shopping websites, the studies by Hsu *et al.* (2014) and Kang and Namkung (2019) have referred to O2O (mutual transfer of offline and online customers), to explain that the overall quality that is experienced through first-hand impressions would play a decisive role in keeping the customers in long-term relationships with sites. Thus, the findings of this study suggest that when sites succeed in impressing online customers, by giving the customers good service along with competent information and system quality, the overall quality of that site could pay off in the long term to retain the customers for a lifetime. If not, even though

the customers have been driven to the site by third-party sources, when customers realize the expertise, professionalism, and trustworthiness of the site are not up to their expectations, based on what they learned from the third-party sources, customers would show no interest in maintaining a relationship with the shopping site. Thus, the role of the three quality factors is decisive in determining long-term relationships with customers. The research findings also have implications for the product type that is used in the current study, which is the online furniture product. The study has confirmed that for a product type such as this, which consists of both search as well as experience characteristics, the three quality factors play an important role in improving customer trust. As discussed in Chapter 1, customers' tendency to purchase online furniture is comparatively lower compared with other products, and furniture websites are mainly used for search purposes with smaller amounts of online shopping. The findings of this study provide some implications in relation to the understanding of O2O transfer processes provided by a range of studies (Hsu *et al.*, 2014; Chen, Hsiao and Hsieh, 2019; Kang and Namkung, 2019; Xiao, Zhang and Fu, 2019). Because customers could form certain brand impressions over their use experience online, and could transfer their perceptions offline to online, particularly with regards to the current product type, the online furniture shopping sites could largely benefit from such an O2O strategy. Besides, new, small, and unfamiliar furniture brands could benefit from such strategies, if they were implemented well, to gain competitive advantage over well-known players or market leaders in the furniture industry who usually adopt such winning strategies.

Further, the findings of this study have some implications for the latest trends in online shopping such as mobile shopping. The importance of interface quality or design quality becomes more vital in the context of mobile shopping (Kim and Hyun, 2016; Venkatesh *et al.*, 2017). Thus, to enhance the effects of information quality and service quality, as suggested by Ding, Hu and Sheng (2011), Jeyaraj (2020), Sedera and Lokuge (2020), and Singh and Söderlund (2020), the system quality would become more vital for mobile shopping providers. Based on the theoretical understanding provided by this study, mobile shopping providers need to focus on system or design quality aspects as the role of this construct could be even more critical in this context. As the size of the mobile interface is very small compared to a computer, thus, it becomes more challenging for mobile shopping app developers to assist the customers with information and service requirements to demonstrate their trustworthiness on a mobile interface.

In addition to the above implications, the current study has also generated further implications for site developers and customers in terms of determining potential criteria for regulating the practices followed by the third-party sources. As discussed in the current study, existing practices such as third-party signalling may affect the attitude and beliefs of customers and make them depend on such means of knowledge acquirement. In the long term, in this scenario, sites may fail to achieve their goals; at the same time, customers' decision-making abilities may also be affected. Thus, the current study suggests that the shopping sites need to identify ways to motivate their customers to learn the credibility themselves in order to make decisions on their own. Though it is impractical to completely ignore the shopping site dependence on third-party credibility sources, it is important for site developers not to completely rely on third-party signals to make trust-related decisions. In the long term, this will help shopping sites as well as customers to reach a stage in the relationship cycle where there will be no need to explain the trustworthiness of shopping sites, as customers become loyal, and the two parties could simply enjoy the benefits.

Concerning the findings of customer web skills moderation, this study suggests that information, system, and service quality serve not only to improve customer trust, but also motivate customers to depend on the site to make an actual purchase. The negative moderation effects of web skills on the relationship between trust and purchase intention provide the potential for new knowledge development. Thus, to understand the practical implications further, these moderation results need to be deeply examined. Presently, the results are only assessed to suggest that customer web skills may pose different effects based on infrastructural, social, personal, and institutional dissimilarities, and it is not possible to make any practical contributions based on the results from the present study.

6.7. Limitations and Future Research Directions

This section presents the limitations of this research, as well as future directions. It reviews the circumstances that have restricted the findings of this study and suggests ways to leverage the findings for future research and practical purposes.

Firstly, in terms of the contexts of the present study, any generalizations arising from the knowledge developed from this research may be restricted because the current study has considered a unit of analysis from a developed country context in terms of online shopping infrastructure. Thus, the practical application of the findings of this study may

be limited for a developing or underdeveloped country context. This is due to the fact that the current study employs constructs such as information quality, system quality, and service quality, which could behave differently in terms of how they impact online customers in different regions, according to the local infrastructural aspects such as e-literacy and the digital divide. However, the model could be applied in a universal context, but the measures need to be considered when adapting the findings for the region of interest. Furthermore, the focal construct of the present study is trust, and this needs to be considered when adapting the findings of the present study over different regional areas, specifically in different cultural contexts. Thus, in terms of providing future directions, the present study suggests including contextual variables, by focusing on antecedents and moderators to match the country or culture of focus.

As the findings of this study are largely related to the theoretical combination of two theorizations, when the success of a system is considered as winning customers' trust, one must ensure that it is important to allow the customers to learn the trustworthiness of a site based on their experienced cognitive knowledge resulting from their interaction with that site. The sampling methods adopted by this study may also be considered as presenting a limitation to the generalization of the results. In this case, to gain a deeper understanding of customer insights, beliefs, attitudes, perceptions, and intentions when explaining a site's success based on customer trust, qualitative focus groups may prove more effective than the quantitative methods used in the current study.

In relation to the data collection method adopted by this study, which depended on a third-party data collection agency, the study's ability to reach out to the respondents with appropriate sampling methods has been reduced. This may have affected the results, as the study did not have any control over the sample selection, but instead relied on the reputation of the agency.

With regards to the effects of customer web skills, the present study has provided some logical explanations to the negative moderation result. Future research needs to explain this finding further to ascertain the conditions that make this moderating outcome possible. Future research may consider the use of different demographic moderating constructs such as age, gender, financial or occupational status as well. Future research could even consider different product types such as electronics, clothing, and cosmetics to provide new contributions to the existing literature.

The current research provides some future directions in terms of the replication and extension of the current conceptual model over different cultural contexts. The effects of the three quality factors on customer trust could be influenced by online customers' propensity to trust, which is suggested to be the result of socio-cultural and economic factors (McKnight and Chervany, 2002; Stamolampros *et al.*, 2020) and customer behaviour propensity, as explained by Quaglione *et al.* (2020). Cultural and social norms could largely affect people's reaction to the three quality factors as well as the customers' reaction to reviews about the quality of a shopping site (Stamolampros *et al.*, 2020). At the same time, the economic conditions that are present in an online shopping infrastructure (online literacy, institutional conditions, technology development, and so on) could also influence the way the quality dimensions influence online customer trust. Additionally, the culture aspect may prove significant in terms of the need to customize the sites in a cultural context, as recommended by Pappas (2018). Therefore, this study recommends adopting the current model to test in different cultures and also recommends conducting cross-cultural comparisons for the effective development of quality sites.

The other future research direction that could be suggested by this study is the use of variance and covariance techniques like ANOVA and ANCOVA to validate the current conceptual model. This would provide a deeper understanding of the construct relationships between the three quality dimensions while affecting customer trust and purchase intention.

6.8. Summary

The current chapter concludes this thesis while explaining the complete research cycle, beginning with the identification of gaps in the existing literature. This chapter also explained the resonance between the current research and the present literature that has the closest association with the gaps identified by this study. At the same time, the current chapter has provided conclusive remarks on the development of the new conceptual model in this thesis, while explaining the results to cast light on the success of the conceptual model built from the two aforementioned theorizations.

This thesis has primarily focused on building a conceptual model that can determine the effects of the web quality dimensions of a site to signal experienced-based source credibility to explain online customer trust and purchase intention. The reason for addressing this gap is that, at the present time, there are no empirical studies from the

field of online shopping literature that have attempted to combine ISSM and SCT to test the effects of quality factors on customers' trust and purchase intentions. As discussed in the literature review, the majority of the studies that have used the ISSM theorization focused on observing the effects of quality as an explanation of a system or site success in terms of the satisfaction of the customers and their use intentions. Whereas the current study has conceptualized a model from a combined perspective of ISSM and SCT to explain the effects of quality dimensions on experienced credibility that explain the cognitive trust-building from the first-hand experiential knowledge of online customers. So, the major findings of this study have clear implications for the theory as well as certain practical recommendations for the design of online shopping systems.

In the online shopping context, customers largely depend on various sources to learn the credibility of a site before using the site for informational and transactional purposes. As there is intense competition between websites, one must identify superior techniques to attract new customers as well as to retain the visiting customers for life. As previously discussed, the sources that could signal the credibility and trustworthiness of a site could be either external or internal. The external sources or third-party sources that explain the credibility of a site may sometimes mislead the customers, as these sources only do their job based on the suggestions or requirements given to them by the shopping systems. In a way, such third-party sources, to survive in a competitive landscape, may need to adopt practices to attract the customers or guide the customers to the shopping providing sites. But, once customers are directed to a site following the suggestions received from third-party sources, if they realize that the site is not trustworthy, they may not return to the site for any further relationship.

On the other hand, with or without the assistance received from a third-party source, when customers spend time on a site to understand the credibility based on their experienced cognitive knowledge, which could be learned from the three quality dimensions used in this study, they could build higher levels of trust and a purchase intention which would last for a longer time. This kind of credibility, as previously mentioned, is known as experienced credibility and is considered by this study as a crucial aspect for the success of sites. Based on the knowledge received from the existing literature, this study assumes that experienced credibility would be useful in the context of online shopping when powerful sites are built with a focus on three quality factors. Such an approach could allow the site owners to reduce their dependence on third-party sources to explain their credibility and show their trustworthiness without

any other party involvement. Whereas the customers would be able to make their own decisions based on their experiential cognitive knowledge to maintain successful long-term shopping relationships.

6.9. Closing Remarks

This study has successfully examined the effects of three quality factors, i.e., information quality, service quality and system quality, on customer trust and online purchase intention, by applying the combined theoretical integration of ISSM and SCT. This study focused specifically on the influence of three quality factors on customer trust based on the theoretical understanding of system success and source credibility. The current study has proved that it is possible to explain the credibility of a shopping site in terms of the website quality and its ability to improve customer trust and purchase intention. The use of the SEM method has demonstrated the significant effects of the three quality factors on customer trust and online purchase intentions. The findings of the study suggest that the three quality factors could explain the expertise and trustworthiness of a shopping site to signal the experienced credibility that improves customer trust and ultimately leads to their purchase intention. As shopping sites could improve trust based on customers' first-hand cognitive experienced credibility, the dependence on third-party sources that generally explain the surface credibility or reputed credibility of a shopping site could be reduced. Thus, this study explains that a shopping site could be successful when they improve customer trust and purchase intention via the three quality factors, as these factors convey the site's expertise, trustworthiness, and dynamism.

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Appendices

Appendix 1.1. Online Purchase Intentions: Publishing Outlets

The analysis of sources of publication (see Table 1) of online shopping literature reveals that the *Journal of Business Research* and *Computers in Human Behavior* are the two leading journals to publish such research. The analysis also revealed other research outlets as some of the frequently used journals to publish online shopping-related literature, such as *Journal of Retailing*, *Decision Support Systems*, *Information Systems Research*, *Journal of Marketing*, *Journal of Interactive Marketing*, *Journal of Management Information Systems*, *European Journal of Marketing*, *Journal of Consumer Psychology*, *MIS Quarterly* and *Information & Management*. In addition, Table 1 also illustrates four outlets that have published three papers each, three outlets that have published two papers each, and 10 outlets that have published one paper each. These statistics suggests that the publishing landscape for online shopping literature is quite diverse and widespread, which is evident from the fact that a total of 29 different outlets published research on this topic.

Table 1 (Appendix 1.1). Sources of Publication

Journal	N	%
Journal of Business Research	13	11.30
Computers in Human Behavior	13	11.30
Journal of Retailing	10	8.70
Decision Support Systems	8	6.96
Information Systems Research	8	6.96
Journal of Marketing	7	6.09
Journal of Interactive Marketing	6	5.22
Journal of Management Information Systems	6	5.22
European Journal of Marketing	4	3.48
Journal of Consumer Psychology	4	3.48
MIS Quarterly	4	3.48
Information & Management	4	3.48
Journal of International Marketing	3	2.61
Journal of Marketing Research	3	2.61
European Journal of Information Systems	3	2.61
Journal of Strategic Information Systems	3	2.61
International Journal of Research in Marketing	2	1.74
International Journal of Electronic Commerce	2	1.74
Tourism Management	2	1.74
Annals of Tourism Research	1	0.87
International Business Review	1	0.87
International Marketing Review	1	0.87
Journal of Operations Management	1	0.87
Communication Research	1	0.87
Journal of International Consumer Marketing	1	0.87
Journal of the Academy of the Marketing Science	1	0.87
International Journal of Human-Computer Studies	1	0.87
Academy of Management	1	0.87
Harvard Business Review	1	0.87
Total	115	100%

Appendix 1.2. Online Purchase Intentions: User Type

Table 2 presents the four broader categories of user types in the online shopping context. The largest 60 studies considered students as their user types, whereas the next prominent user types were customers, citizens, household users and website visitors, appearing in 49 studies. A very limited number of studies considered employees and online retailers as their user types. The analysis of user types also revealed that four studies (Kim and Kim, 2004; Hausman and Siekpe, 2009; Aguirre *et al.*, 2015; Bhargave, Mantonakis and White, 2016) used a mixed sample of students, customers, citizens and general users, whereas the same number of studies (Schlosser, White and Lloyd, 2006; Qureshi *et al.*, 2009; Smith, Johnston and Howard, 2011; White and Yuan, 2012) used a mixed sample of students and employees.

Table 2 (Appendix 1.2). User Types

User Type	N	Example Reference
Student	60	Lee and Turban (2001); McKnight, Choudhury and Kacmar (2002a); Belanger, Hiller and Smith (2002); Torkzadeh and Dhillon (2002); Yoon (2002); Gefen, Karahanna and Straub (2003); Heijden, Verhagen and Creemers (2003); Kim and Kim (2004); Everard and Galletta (2005); Lim *et al.* (2006); Metzger (2006); Nicolaou and McKnight (2006); Schlosser, White and Lloyd (2006); Mukherjee and Nath (2007); Kim, Ferrin and Rao (2008, 2009); Moon, Chadee and Tikoo (2008); Gupta, Yadav and Varadarajan (2009); Ha and Stoel (2009); Hausman and Siekpe (2009); Huang, Lurie and Mitra (2009); Kim and Niehm (2009); Poddar, Donthu and Wei (2009); Qureshi *et al.* (2009); Chen, Hsu and Lin (2010); Hasan (2010); McCole, Ramsey and Williams (2010); Benedicktus *et al.* (2010); Kim, Gupta and Koh (2011); Becerra and Korgaonkar (2011); Smith, Johnston and Howard (2011); Naylor, Lamberton and West (2012); White and Yuan (2012); Bian and Forsythe (2012); Bianchi and Andrews (2012); Jiménez and Mendoza (2013); Bryce and Fraser (2014); Ashraf, Thongpapanl and Auh (2014); Hong and Pavlou (2014); Lian and Yen (2014); Nes, Yelkur and Silkoset (2014); White, Simpson and Argo (2014); Aguirre *et al.* (2015); Bleier and Eisenbeiss (2015); Bonsón Ponte, Carvajal-Trujillo and Escobar-Rodríguez (2015); Y. Chen *et al.* (2015); Eisingerich *et al.* (2015); Bansal, Zahedi and Gefen (2015); Pascual-Miguel, Agudo-Peregrina and Chaparro-Peláez (2015); Roghanizad and Neufeld (2015); Ashraf, Razzaque and Thongpapanl (2016); Bilgihan (2016); Clemons *et al.* (2016); Darke *et al.* (2016); Filieri (2016); Kostyra *et al.* (2016); Yang, Sarathy and Lee (2016); Bhargave, Mantonakis and White (2016); Kim and Peterson (2017)
Customer| Citizen| Household| User| Site Visitor	49	Moorman, Deshpande and Zaltman (1993); Ba and Pavlou (2002); McKnight and Chervany (2001); Ridings, Gefen and Arinze (2002); Chiang and Dholakia (2003); Harris and Goode (2004); Koufaris and Hampton-Sosa (2004); Bart *et al.* (2005); Wang and Emurian (2005); Chiu, Hsu and Wang (2006); Cho (2006); Boyer and Hult (2006); Awad and Ragowsky (2008); Oberecker, Riefler and Diamantopoulos (2008); Hansen and Jan (2009); Hausman and Siekpe (2009); Kim, Ferrin and Rao (2009); Palvia (2009); Zhu and Zhang (2010); Oberecker and Diamantopoulos (2011); Tsai *et al.* (2011); Verhagen and Van Dolen (2011); Rose *et al.* (2012); San Martín and Herrero (2012); Venkatesh, Thong and Xu (2012); Wang, Yu and Wei (2012); Bock *et al.* (2012); Safari, Thilenius and Hadjikhani (2013); Fang *et al.* (2014); Hoffmann, Lutz and Meckel (2014); King, Racherla and Bush (2014); Lu, Chang

		and Chang (2014); Wu *et al.* (2014); Aguirre *et al.* (2015); Eisingerich *et al.* (2015); Seckler *et al.* (2015); Chen *et al.* (2016); Kim and Koo (2016); Mallapragada, Chandukala and Liu (2016); Pappas *et al.* (2016); Pauwels, Aksehirli and Lackman (2016); Weisstein, Kukar-Kinney and Monroe (2016); Bhargave, Mantonakis and White (2016); Chakraborty *et al.* (2016); Hillman and Neustaedter (2017); Liu *et al.* (2017); Banerjee, Bhattacharyya and Bose (2017); Oliveira *et al.* (2017); Chang, Liu and Shen (2017)
Employees	6	Kohli and Jaworski (1990); Schlosser, White and Lloyd (2006); Qureshi *et al.* (2009); Smith, Johnston and Howard (2011); White and Yuan (2012); Y. Chen *et al. (*2015)
Online Retailers	1	Özpolat and Jank (2015)

Appendix 1.3. Online Purchase Intentions: Technology/Systems Used

Table 3 presents the systems or technology used across the studies of online shopping. The analysis indicates that the majority of studies have used e-commerce websites, e-shopping or online shopping as an object to undertake such research. However, only a fraction of the overall research has used technology such as mobile Internet technology (Venkatesh, Thong and Xu, 2012; Chen *et al.*, 2016), social media or networking sites (Kim and Park, 2012; Wang, Yu and Wei, 2012), online market or tourism service marketing (Hong and Pavlou, 2014; Bilgihan, 2016) and online games (Zhu and Zhang, 2010) for understanding individual's online purchase intentions. In addition, two studies (Singh and Sirdeshmukh, 2000; Chakraborty *et al.*, 2016) were very generic in nature and they did not mention the target systems for which they intended to measure user's online purchase intentions.

Table 3 (Appendix 1.3). Technology/Systems Used

Technology/Systems Used	**N**	**Example References**
E-Commerce website| Website| E-shopping| Online shopping|	100	Kohli and Jaworski (1990); Ba and Pavlou (2002); Belanger, Hiller and Smith (2002); Chiang and Dholakia (2003); Gefen, Karahanna and Straub (2003); Harris and Goode (2004); Kim and Stoel (2004); Everard and Galletta (2005); Bart *et al.* (2005); Boyer and Hult (2006); Chiu, Hsu and Wang (2006); Cho (2006); Dianne (2008); Awad and Ragowsky (2008); Kim, Ferrin and Rao (2008, 2009); Gupta, Yadav and Varadarajan (2009); Ha and Stoel (2009); Hansen and Jan (2009); Hausman and Siekpe (2009); Huang, Lurie and Mitra (2009); Kim and Niehm (2009); Benedicktus *et al.* (2010); Hasan (2010); Becerra and Korgaonkar (2011); Bian and Forsythe (2012); Bianchi and Andrews (2012); Bock *et al.* (2012); Jiménez and Mendoza (2013); Bryce and Fraser (2014); Ashraf, Thongpapanl and Auh (2014); Fang *et al.* (2014); Hoffmann, Lutz and Meckel (2014); King, Racherla and Bush (2014); Aguirre *et al.* (2015); Bleier and Eisenbeiss (2015); Bansal, Zahedi and Gefen (2015); Ashraf, Razzaque and Thongpapanl (2016); Bhargave, Mantonakis and White (2016); Clemons *et al.* (2016); Darke *et al.* (2016); Filieri (2016); Kim and Koo (2016); Kim and

		Peterson (2017); Banerjee, Bhattacharyya and Bose (2017); Moorman, Deshpande and Zaltman (1993); Lee and Turban (2001); McKnight, Choudhury and Kacmar (2002a); McKnight and Chervany (2001); Koufaris and Hampton-Sosa (2004); Metzger (2006); Nicolaou and McKnight (2006); Lim *et al.* (2006); Mukherjee and Nath (2007); Moon, Chadee and Tikoo (2008); Oberecker, Riefler and Diamantopoulos (2008); Palvia (2009); McCole, Ramsey and Williams (2010); Oberecker and Diamantopoulos (2011); Naylor, Lamberton and West (2012); San Martín and Herrero (2012); Nes, Yelkur and Silkoset (2014); Lian and Yen (2014); Lu, Chang and Chang (2014); Özpolat and Jank (2015); Pascual-Miguel, Agudo-Peregrina and Chaparro-Peláez (2015); Kostyra *et al.* (2016); Pappas *et al.* (2016); Pauwels, Aksehirli and Lackman (2016); Mallapragada, Chandukala and Liu (2016); Oliveira *et al.* (2017); Liu *et al.* (2017); Torkzadeh and Dhillon (2002); Yoon (2002); Ridings, Gefen and Arinze (2002); Heijden, Verhagen and Creemers (2003); Wang and Emurian (2005); Schlosser, White and Lloyd (2006); Poddar, Donthu and Wei (2009); Qureshi *et al.* (2009); Tsai *et al.* (2011); Verhagen and Van Dolen (2011); Smith, Johnston and Howard (2011); White and Yuan (2012); Rose *et al.* (2012); Safari, Thilenius and Hadjikhani (2013); White, Simpson and Argo (2014); Wu *et al*. (2014); Bonsón Ponte, Carvajal-Trujillo and Escobar-Rodríguez (2015); Roghanizad and Neufeld (2015); Seckler *et al.* (2015); Weisstein, Kukar-Kinney and Monroe (2016); Yang, Sarathy and Lee (2016)
Mobile Internet technology	3	Venkatesh, Thong and Xu (2012); Chen *et al.* (2016); Hillman and Neustaedter (2017)
Social media/networking sites	3	Kim, Gupta and Koh (201)1; Wang, Yu and Wei (2012); Eisingerich *et al.* (2015)
Online market| Tourism and service marketing	2	Hong and Pavlou (2014); Bilgihan (2016)
General	2	Singh and Sirdeshmukh (2000); Chakraborty *et al.* (2016)
Online Video Games	1	Zhu and Zhang (2010)

Appendix 1.4. Online Purchase Intentions: Methodologies Used

Table 4 shows a list of different methodologies used across studies in the online shopping context. The analysis indicated that the survey (N=80) in its different forms, such as the online survey, web survey, email survey and telephone survey, was the most widely used methodology across all the studies on online shopping. This is followed by the experiment (N=14), interviews (N=9) and reviews (N=8) as the other more frequently used methodologies. However, one study has used the case study method and another study used observation as its research method. The findings clearly indicate the reasons why the majority of research on online shopping are not only empirical in nature but that they have also performed quantitative analysis on the data gathered through a survey methodology.

Table 4 (Appendix 1.4). Methodologies Used

Methodology	N	Reference(s)
Survey – Online Survey| Web Survey| Email Survey Telephone Survey	80	Belanger, Hiller and Smith (2002); Chiang and Dholakia (2003); Gefen, Karahanna and Straub (2003); Harris and Goode (2004); Kim and Kim (2004); Boyer and Hult (2006); Chiu, Hsu and Wang (2006); Cho (2006); Awad and Ragowsky (2008); Dianne (2008); Ha and Stoel (2009); Hansen and Jan (2009); Hausman and Siekpe (2009); Huang, Lurie and Mitra (2009); Chen, Hsu and Lin (2010); Hasan (2010); Benedicktus *et al.* (2010); Becerra and Korgaonkar (2011); Bock *et al.* (2012); Bian and Forsythe (2012); Bianchi and Andrews (2012); Jiménez and Mendoza (2013); Ashraf, Thongpapanl and Auh (2014); Bryce and Fraser (2014); Fang *et al.* (2014); Hoffmann, Lutz and Meckel (2014); Hong and Pavlou (2014); Y. Chen *et al.* (2015); Eisingerich *et al.* (2015); Bansal, Zahedi and Gefen (2015); Bilgihan (2016); Chakraborty *et al.* (2016); Bhargave, Mantonakis and White (2016); Chang, Liu and Shen (2017); Banerjee, Bhattacharyya and Bose (2017), Moorman, Deshpande and Zaltman (1993); Lee and Turban (2001); McKnight, Choudhury and Kacmar (2002a); Ridings, Gefen and Arinze (2002); Torkzadeh and Dhillon (2002); Yoon (2002); Heijden, Verhagen and Creemers (2003); Koufaris and Hampton-Sosa (2004); Wang and Emurian (2005); Schlosser, White and Lloyd (2006); Mukherjee and Nath (2007); Moon, Chadee and Tikoo (2008); Kim, Ferrin and Rao (2008, 2009); Kim and Niehm (2009); Palvia (2009); Poddar, Donthu and Wei (2009); Qureshi *et al.* (2009); McCole, Ramsey and Williams (2010); Zhu and Zhang (2010); Oberecker and Diamantopoulos (2011); Smith, Johnston and Howard (2011); Tsai *et al.* (2011); Verhagen and Van Dolen (2011); Kim, Gupta and Koh (2011); Naylor, Lamberton and West (2012); Rose *et al.* (2012); San Martín and Herrero (2012); Venkatesh, Thong and Xu (2012); Wang, Yu and Wei (2012); White and Yuan (2012); Lu, Chang and Chang (2014); White, Simpson and Argo (2014); Wu *et al.* (2014); Lian and Yen (2014); Bonsón Ponte, Carvajal-Trujillo and Escobar-Rodríguez (2015); Özpolat and Jank (2015); Pascual-Miguel, Agudo-Peregrina and Chaparro-Peláez (2015); Seckler *et al.* (2015); (Chen *et al.*, 2016); Kim and Koo (2016); Mallapragada, Chandukala and Liu (2016); Pappas *et al.* (2016); Pauwels, Aksehirli and Lackman (2016); Weisstein, Kukar-Kinney and Monroe (2016); Yang, Sarathy and Lee (2016); Kostyra *et al.* (2016); Oliveira *et al.* (2017)
Experiment	14	Ba and Pavlou (2002); Senecal and Nantel, (2004); Everard and Galletta (2005); Metzger (2006); Nicolaou and McKnight (2006); Lim *et al.* (2006); Gupta, Yadav and Varadarajan (2009); Aguirre *et al.* (2015); Roghanizad and Neufeld (2015); Bleier and Eisenbeiss (2015); Ashraf, Razzaque and Thongpapanl (2016); Clemons *et al.* (2016); Darke *et al.* (2016); Liu *et al.* (2017)
Interview	9	Kohli and Jaworski (1990); Bart *et al.* (2005); Oberecker, Riefler and Diamantopoulos (2008); Safari, Thilenius and Hadjikhani (2013); King, Racherla and Bush (2014); Nes, Yelkur and Silkoset (2014); Filieri (2016); Mallapragada, Chandukala and Liu (2016); Hillman and Neustaedter (2017)
Review	8	Doney, Cannon and Mullen (1998); Reichheld and Schefter (2000); Singh and Sirdeshmukh (2000); Shankar, Urban and Sultan (2002); Corritore, Kracher and Wiedenbeck (2003); Wang and Emurian

		(2005); Beldad, De Jong and Steehouder (2010); Kim and Peterson (2017)
Meta-analysis	2	McKnight, Choudhury and Kacmar (2002a); Kim and Peterson (2017)
Observation	1	J. Li *et al.* (2015)
Case Study	1	Sismeiro and Bucklin (2004)

Appendix 1.5. Online Purchase Intentions: Theories, Models or Frameworks Used

The findings on the various theories used across studies on online shopping indicate that although Trust Theory (N=10) was the key basic model employed (see Table 5), its frequency of use was very low as was the case with other models including UTAUT, UTAUT2 and social identity theory, with each one of them being used only two or three times. However, a sizeable number (N=69) of theories, models and frameworks (such as TRA, TPB, Bayesian VAR model, value framework, socialization framework) were used by only one study. However, the analysis also reveals that a large number of the remaining studies (i.e., 82 out of 115) have not mentioned the use of any originating theory, model or framework. Although not all of these studies would have been empirical or based on theories or models, the findings clearly indicate that the majority of empirical studies based on quantitative data would have adopted constructs that suited the specific studies without paying attention to the originating theories and models.

Table 5 (Appendix 1.5). Use of Theories, Models and Frameworks

Theory| Model |Framework	**N**	**Reference(s)**
Trust Theory	10	Moorman, Deshpande and Zaltman (1993); Lee and Turban (2001); Ridings, Gefen and Arinze (2002); Shankar, Urban and Sultan (2002); Yoon (2002); Corritore, Kracher and Wiedenbeck (2003); Mukherjee and Nath (2007); Benedicktus *et al.* (2010); Bock *et al.* (2012); Fang *et al.* (2014)
TAM	7	Gefen, Karahanna and Straub (2003); Heijden, Verhagen and Creemers (2003); Koufaris and Hampton-Sosa (2004); Ha and Stoel (2009); Kim and Niehm (2009); Ashraf, Thongpapanl and Auh (2014); Y. Chen *et al.* (2015)
TRA	5	Hasan (2010); McCole, Ramsey and Williams (2010); Lu, Chang and Chang (2014); Y. Chen *et al.* (2015); Yang, Sarathy and Lee (2016)
TPB	4	Lim *et al.* (2006); Lu, Chang and Chang (2014); Y. Chen *et al.* (2015); Oliveira *et al.* (2017)
Credibility Theory	3	Corritore, Kracher and Wiedenbeck (2003); Filieri (2016); Banerjee, Bhattacharyya and Bose (2017)
UTAUT	3	San Martín and Herrero (2012); Lian and Yen (2014); Chang, Liu and Shen (2017)
UTAUT2	2	Venkatesh, Thong and Xu (2012); Pascual-Miguel, Agudo-Peregrina and Chaparro-Peláez (2015)
Social Cognitive Theory	2	Chiu, Hsu and Wang (2006); Hoffmann, Lutz and Meckel (2014)
Social Identity Theory	2	Oberecker, Riefler and Diamantopoulos (2008); Nes, Yelkur and Silkoset (2014)

Prospect Theory	2	Cho (2006); Bonsón Ponte, Carvajal-Trujillo and Escobar-Rodríguez (2015)
Dual-process Theory	2	Bansal, Zahedi and Gefen (2015); Roghanizad and Neufeld (2015)
Signalling Theory	2	White and Yuan (2012); Mallapragada, Chandukala and Liu (2016)
Value Framework	1	Kim, Gupta and Koh (2011)
Socialization Framework	1	Wang, Yu and Wei (2012)
Microeconomic Framework	1	Tsai *et al.* (2011)
Functional Theory of Attitude	1	Bian and Forsythe (2012)
Cognitive Emotion Theory (CET)	1	Verhagen and Van Dolen (2011)
S-O-R Framework	1	Rose *et al.* (2012)
Extended Valence Framework	1	Kim, Ferrin and Rao (2009)
Expectation-Confirmation Theory	1	Kim, Ferrin and Rao (2009)
Bayesian VAR Model	1	Pauwels, Aksehirli and Lackman (2016)
Generational Theory	1	Bilgihan (2016)
Flow Theory	1	Bilgihan (2016)
Regulatory Focus Theory	1	Ashraf, Razzaque and Thongpapanl (2016)
Regulatory Fit Theory	1	Ashraf, Razzaque and Thongpapanl (2016)
Sociolinguistic Theory	1	Awad and Ragowsky (2008)
Construal Level Theory	1	Darke *et al.* (2016)
Agency Theory	1	Singh and Sirdeshmukh (2000)
Information Systems Theory	1	Nicolaou and McKnight (2006)
Equity Theory	1	Boyer and Hult (2006)
Congruence Theory	1	Poddar, Donthu and Wei (2009)
Social Capital Theory	1	Chiu, Hsu and Wang (2006)
Intention Theory	1	Palvia (2009)
Social Influence Theory	1	Naylor, Lamberton and West (2012)
Diffusion of Innovation Theory	1	Bianchi and Andrews (2012)
Affinity Theory	1	Nes, Yelkur and Silkoset (2014)
Customer Value Theory	1	Kim, Gupta and Koh (2011)

Appendix 1.6. Online Purchase Intentions: Mediator

Table 6 shows a list of different mediators used across studies in the online shopping context. The analysis indicated that Trust (N=24) was the most widely used mediator across all the studies on online shopping. This is followed by Attitude (N=5), Perceived Risk (N=4), Satisfaction (N=3) and Website Quality, TAM, and Emotions (at N=2 each).

Table 6 (Appendix 1.6). Mediators

Mediator	**N**	**Reference(s)**
Trust Trusting Beliefs	24	Ba and Pavlou (2002); McKnight and Chervany (2001); McKnight, Choudhury and Kacmar (2002a); Ridings, Gefen and Arinze (2002); Shankar, Urban and Sultan (2002); Yoon (2002); Gefen, Karahanna and Straub (2003); Bart *et al.* (2005); Everard and Galletta (2005); Lim *et al.* (2006); Nicolaou and McKnight (2006); Schlosser, White and Lloyd (2006); Mukherjee and Nath (2007); Kim, Ferrin and Rao (2008); Qureshi *et al.* (2009); Benedicktus *et al.* (2010); Kim, Gupta and Koh (2011); Becerra and Korgaonkar (2011); Fang *et al.* (2014); Darke *et al.* (2016); Kim and Koo (2016); Oliveira *et al.* (2017); Kim and Peterson (2017)
Trust (Without Hypostasis)	11	Harris and Goode (2004); Awad and Ragowsky (2008); Ha and Stoel (2009); Palvia (2009); Rose *et*

		al. (2012); Bock *et al.* (2012); Bansal, Zahedi and Gefen (2015); Bonsón Ponte, Carvajal-Trujillo and Escobar-Rodríguez (2015); Bilgihan (2016); Filieri (2016); Chang, Liu and Shen (2017)
Attitude	5	Lim *et al.* (2006); Bian and Forsythe (2012); Ashraf, Thongpapanl and Auh (2014); Lu, Chang and Chang (2014); Chen *et al.* (2016)
Perceived Risk	4	Nicolaou and McKnight (2006); Kim, Ferrin and Rao (2008, 2009); Kim and Koo (2016)
Satisfaction	3	Yoon (2002); Harris and Goode (2004); Y. Chen *et al.* (2015)
Website Quality	2	Everard and Galletta (2005); Poddar, Donthu and Wei (2009)
TAM	2	Gefen, Karahanna and Straub (2003); Ashraf, Thongpapanl and Auh (2014)
Emotions	2	Verhagen and Van Dolen (2011); Pappas *et al.* (2016)
Difficulty in Selecting Items	1	Hansen and Jan (2009)
Less Fun	1	Hansen and Jan (2009)
Information Quality	1	Kim and Niehm (2009)
Micro Country Image	1	Nes, Yelkur and Silkoset (2014)
Perceived Product Knowledge	1	Weisstein, Kukar-Kinney and Monroe (2016)
Perceived Quality	1	Weisstein, Kukar-Kinney and Monroe (2016)
Perceived Control	1	Rose *et al.* (2012)
Perceived Value	1	Harris and Goode (2004)
Incentive Program	1	Kim and Kim (2004)
Time in Domain (Website)	1	Huang, Lurie and Mitra (2009)
Product Fit Uncertainty	1	Hong and Pavlou (2014)
Product Quality Uncertainty	1	Hong and Pavlou (2014)
Perceived Benefit	1	Kim, Ferrin and Rao (2009)
Engagement	1	Ashraf, Razzaque and Thongpapanl (2016)
Online Experience (flow)	1	Bilgihan (2016)
Commitment	1	Mukherjee and Nath (2007)
Online Social Network	1	Chiu, Hsu and Wang (2006)
Perceived Vulnerability	1	Aguirre *et al.* (2015)
All of these articles used the models with a single or multiple mediations, but all of them tested the hypotheses only between two variables (i.e., independent and dependent) and none of them tested a hypothesis between three variables including a mediation variable between the antecedent and outcome variables.	9	Kohli and Jaworski (1990); Heijden, Verhagen and Creemers (2003); Hausman and Siekpe (2009); Oberecker and Diamantopoulos (2011); Bianchi and Andrews (2012); Wang, Yu and Wei (2012); Chakraborty *et al.* (2016); Chen *et al.* (2016); Yang, Sarathy and Lee (2016)

Appendix 1.7. Online Purchase Intentions: Moderators

Table 7 shows a list of different moderators used across studies in the online shopping context. The analysis indicated that Age, Gender, and Experience (N=9) was the most widely used moderator across all the studies on online shopping. This is followed by Trust (N=5), Perceived Risk (N=2) and Price (N=2).

Table 7 (Appendix 1.7). Moderators

Moderator (s)	**N**	**Reference(s)**
Age, Gender, and Experience	9	Boyer and Hult (2006); Awad and Ragowsky (2008); Hansen and Jan (2009); Venkatesh, Thong and Xu (2012); Hoffmann, Lutz and Meckel (2014); Lian and Yen (2014); Y. Chen *et al.* (2015); Pascual-Miguel, Agudo-Peregrina and Chaparro-Peláez (2015); Filieri

		(2016)
Trust	5	Lee and Turban (2001); Kim, Ferrin and Rao (2008); Bleier and Eisenbeiss (2015); Y. Chen *et al.* (2015); Özpolat and Jank (2015)
Perceived Risk	2	Schlosser, White and Lloyd (2006); Özpolat and Jank (2015)
Price	2	Ba and Pavlou (2002); Moon, Chadee and Tikoo (2008)
Goal: Search or Browse	1	Schlosser, White and Lloyd (2006)
Information: Environment, Amount	1	Bhargave, Mantonakis and White (2016)
Public vs Private	1	White, Simpson and Argo (2014)
Product Category (May act)	1	Qureshi *et al.* (2009)
Need for Uniqueness	1	Wang, Yu and Wei (2012)
Privacy and Security Concerns	1	McCole, Ramsey and Williams (2010)
Perceived Risk (Suggest)	1	Bianchi and Andrews (2012)
Review Balance	1	Yang, Sarathy and Lee (2016)
Innovativeness in Information Technologies	1	San Martín and Herrero (2012)
Hofstede Dimensions	1	Dianne (2008)
Agreement	1	Jiménez and Mendoza (2013)
Attitude	1	Smith, Johnston and Howard (2011)
Supply – Side and Demand - Side	1	Kohli and Jaworski (1990)
Involvement	1	Filieri (2016)
Internet-enabled systems	1	Hong and Pavlou (2014)
Volume and Variance	1	Kostyra *et al.* (2016)
Internal Monitoring	1	Chakraborty *et al.* (2016)
Familiarity (might be)	1	Bilgihan (2016)
Perceived Effectiveness	1	Fang *et al.* (2014)
Product Type	1	Bock *et al.* (2012)
Reviewer Trustworthiness	1	Banerjee, Bhattacharyya and Bose (2017)

Appendix 1.8. Online Purchase Intentions: Limitations

Table 8 presents the key methodological limitations acknowledged by various studies on online shopping. The analysis indicates that context specific or biased sample (N=57) was observed as the most widely referenced limitation across the studies on online shopping. This is followed by other limitations which appear less repeatedly, including (from the highest to lowest): some other important factors not used (N=23), single or limited task (N=18), student sample (N=12), cross-sectional research (N=10), small or inefficient sample size (N=4), convenience sampling (N=4), holistic use of construct (N=4), and reverse outcomes for certain relationships (N=3). In addition, participants' lack of prior online buying experience and not measuring online purchase behaviour were also reported by a couple of studies. A number of limitations were used one time each including high correlation among error variance (Ha and Stoel, 2009), scale measurement issue (Bian and Forsythe, 2012), low response rate (Kim and Kim, 2004), exploratory research (Bart *et al.*, 2005), and issues related to model fit (McKnight, Choudhury and Kacmar, 2002a).

Table 8 (Appendix 1.8). Methodological Limitations

Limitation	N	Explanation	References
Context Specific Subject| Biased Sample	57	Sample taken from only one or a very few specific or limited organizations, community, region, country, culture, case study, age group, gender, users, skilled professionals, technology, items, e-commerce site (e.g., B2C), categories (e.g., low price vs. high price product), product (e.g., wearable products), channels, policies (e.g., PMG and EDLP policies)	Ba and Pavlou (2002); Aguirre *et al.* (2015); Banerjee, Bhattacharyya and Bose (2017); Chiang and Dholakia (2003); Kim and Kim (2004); Chiu, Hsu and Wang (2006); Boyer and Hult (2006); Kim, Ferrin and Rao (2008); Hansen and Jan (2009); Hausman and Siekpe (2009); Kim and Niehm (2009); Hasan (2010); Chen, Hsu and Lin (2010); Kim, Gupta and Koh (2011); Bianchi and Andrews (2012); Bock *et al.* (2012); Fang *et al.* (2014); Hoffmann, Lutz and Meckel (2014); Bryce and Fraser (2014); Bansal, Zahedi and Gefen (2015); Bleier and Eisenbeiss (2015); Darke *et al.* (2016); Filieri, (2016); Bilgihan (2016); Kim and Koo (2016); Chen *et al.* (2016); Hillman and Neustaedter (2017); Chang, Liu and Shen (2017); Yoon (2002); McKnight and Chervany (2001); Senecal and Nantel (2004); Sismeiro and Bucklin (2004); Nicolaou and McKnight (2006); Lim *et al.* (2006); Metzger (2006); Moon, Chadee and Tikoo (2008); Palvia (2009); Poddar, Donthu and Wei (2009); Zhu and Zhang (2010); McCole, Ramsey and Williams (2010); Smith, Johnston and Howard (2011); Verhagen and Van Dolen (2011); San Martín and Herrero (2012); Venkatesh, Thong and Xu (2012); Wang, Yu and Wei (2012); White and Yuan (2012); Safari, Thilenius and Hadjikhani (2013); Nes, Yelkur and Silkoset (2014); Lu, Chang and Chang (2014); Bonsón Ponte, Carvajal-Trujillo and Escobar-Rodríguez (2015); Özpolat and Jank (2015); Pascual-Miguel, Agudo-Peregrina and Chaparro-Peláez (2015); J. Li *et al.* (2015); Kostyra *et al.* (2016); Weisstein, Kukar-Kinney and Monroe (2016); Mallapragada, Chandukala and Liu (2016); Oliveira *et al.* (2017)
Some other Important Factors not Used	23	Only limited variables were used leaving behind some other more relevant ones	Sismeiro and Bucklin (2004); Hansen and Jan (2009); Poddar, Donthu and Wei (2009); Qureshi *et al.* (2009); Benedicktus *et al.* (2010); Chen, Hsu and Lin (2010); McCole, Ramsey and Williams (2010); Wang, Yu and Wei

			(2012); Wu *et al.* (2014); Lu, Chang and Chang (2014); Bhargave, Mantonakis and White (2016); Weisstein, Kukar-Kinney and Monroe (2016); Yang, Sarathy and Lee (2016); Chen *et al.* (2016)
Single| Limited Task	18	Difficult to generalize or diversify the results or findings	Heijden, Verhagen and Creemers (2003); Harris and Goode (2004); Moon, Chadee and Tikoo (2008); Hausman and Siekpe (2009); Huang, Lurie and Mitra (2009); Kim and Niehm (2009); Chen, Hsu and Lin (2010); Zhu and Zhang (2010); McCole, Ramsey and Williams (2010); Tsai *et al.* (2011); Verhagen and Van Dolen (2011); Bian and Forsythe (2012); San Martín and Herrero (2012); Venkatesh, Thong and Xu (2012); Nes, Yelkur and Silkoset (2014); Yang, Sarathy and Lee (2016); Filieri (2016); Kostyra *et al.* (2016)
Student Sample	12	Sample gathered from Students	Gefen, Karahanna and Straub (2003); Everard and Galletta (2005); Lim *et al.* (2006); Ha and Stoel (2009); Hasan (2010); Bian and Forsythe (2012); White, Simpson and Argo (2014); Bansal, Zahedi and Gefen (2015); Roghanizad and Neufeld (2015); Bleier and Eisenbeiss (2015); Y. Chen *et al.* (2015); Bhargave, Mantonakis and White (2016)
Cross-Sectional Research	10	Data collected at only one point in time	Ridings, Gefen and Arinze (2002); Gefen, Karahanna and Straub (2003); Kim and Kim (2004); Everard and Galletta (2005); Chiu, Hsu and Wang (2006); Mukherjee and Nath (2007); McCole, Ramsey and Williams (2010); Becerra and Korgaonkar (2011); Bonsón Ponte, Carvajal-Trujillo and Escobar-Rodríguez (2015); Chakraborty *et al.* (2016)
Small| Inefficient Sample Size	4	Very limited sample size	Ha and Stoel (2009); Hausman and Siekpe (2009); Rose *et al.* (2012); Ashraf, Thongpapanl and Auh (2014)
Convenience Sampling	4	Poll or survey suffering from self-selecting opinion| Convenience Sampling	Chiang and Dholakia (2003); Senecal and Nantel (2004); Nicolaou and McKnight (2006); Nes, Yelkur and Silkoset (2014)

Construct observed at the overall level and no further dimensions were used| Holistic use of construct	4	The construct used as an overall variable and not broken down into different dimensions	Kim, Gupta and Koh (2011); Oberecker and Diamantopoulos (2011); Jiménez and Mendoza (2013); Ashraf, Thongpapanl and Auh (2014)
No explanation or opposite results and some other relationship	3	Failed to explain some relationships obtained in the research or obtained reverse outcome for certain relationships	Ashraf, Thongpapanl and Auh (2014); Lian and Yen (2014); Bhargave, Mantonakis and White (2016)
Participants didn't have Prior Experience Buying Online	2	Participants having no prior experience of buying online	Heijden, Verhagen and Creemers (2003); Schlosser, White and Lloyd (2006)
Actual Purchase Behaviour not Measured	2	The study has not measured the actual purchase behaviour	Senecal and Nantel (2004); Bart *et al.* (2005)

Appendix 1.9. Results of Weight Analysis

This study has undertaken Weight Analysis and Meta-Analysis techniques following the process of Rana, Dwivedi and Williams (2015) to develop a general understanding of the key construct relationships from the online shopping context. Table 9 presents a brief account of 26 frequently occurring relationships with the total number of relationships examined between a pair of independent and determinant variables three or more times. This incorporates the total number of significant, non-significant, negatively significant and total number of relationships between independent and dependent variables in online shopping literature. The further analysis indicates that trust has been the key dependent variable for the majority of independent variables presented in the table, in addition to attitude and online purchase intentions. This establishes that trust has been used as a key mediating variable in the online shopping literature. In addition, online purchase intention is demonstrated as the key dependent variable.

Moreover, to recognize the most effective predictors, Jeyaraj, Rottman and Lacity (2006) categorized independent variables into two types: 'well-utilized' variables, which were examined five or more times, and 'experimental' variables that are examined less than five times with a dependent variable. The standard for a 'best

predictor' was set as a weight for the independent construct that is greater than or equal to 0.80 while having been examined at least five or more times. To propose the strength of the relationship between a given set of independent and dependent constructs, two aspects were considered. Firstly, the number of times a specific relationship between two constructs is examined; and secondly, the number of times this relationship was proved significant. Dividing the number of times a relationship was found significant by the total number of times this relationship was examined (e.g., computing the weight of the most frequently used relationship i.e., attitude onto online purchase intention = 7/7 = 1.0), provides the weight significance of a relationship between two constructs. As not many relationships are based on five or more occurrences of constructs in Table 9, this doctoral research would define the 'best predictor' as all those predictors that have occurred three or more times with a weight of 0.80 or above. On that basis, the 'well-utilized' constructs would be defined as all those constructs which were examined three or more times, and 'experiential' constructs as those which were examined less than three times. The weight '1' indicates that the relationship between two variables is significant throughout all studies (Rana, Dwivedi and Williams, 2015). However, '0' indicates this relationship is non-significant across all studies examined (Jeyaraj, Rottman and Lacity, 2006; Rana, Dwivedi and Williams, 2015). No such relationship has been reported in Table 9. The findings also indicate that all predictors presented in the table are 'well-utilized' and best predictors. Degree of significance and weight-analysis techniques have been adapted from Jeyaraj, Rottman and Lacity (2006).

Table 9 (Appendix 1.9). Degree of Significance and Weight Analysis

Independent Variable	Dependent Variable	SIG	NN	Negative	Total	Weight
Attitude	Online Purchase Intention	7	0	0	7	1.00
Privacy	Trust	7	0	0	7	1.00
Security	Trust	6	1	0	7	0.85
Reputation	Trust	7	0	0	7	1.00
Satisfaction	Trust	6	0	0	6	1.00
Perceived Risk	Trust	0	0	6	6	1.00
Site Quality	Trust	6	0	0	6	1.00
Familiarity	Trust	4	0	1	5	1.00
Disposition to Trust	Trust	5	0	0	5	1.00
Benevolence	Trust	4	1	0	5	0.80
Competence	Trust	4	1	0	5	0.80
Trust	Online Purchase Intention	4	0	0	4	1.00
Perceived Risk	Online Purchase Intention	0	0	4	4	1.00
Perceived Risk	Attitude	0	0	4	4	1.00

Table 9 (Appendix 1.9). Continued

Independent Variable	Dependent Variable	SIG	NN	Negative	Total	Weight
Performance Expectancy	Online Purchase Intention	4	0	0	4	1.00
Effort Expectancy	Online Purchase Intention	4	0	0	4	1.00
Perceived Ease of Use	Trust	4	0	0	4	1.00
Information Quality	Trust	4	0	0	4	1.00
Experience	Trust	4	0	0	4	1.00
Assurance	Trust	3	1	0	4	0.80
Service Quality	Online Purchase Intention	3	0	0	3	1.00
Perceived Value	Trust	3	0	0	3	1.00
Service Quality	Trust	3	0	0	3	1.00
Perceived Usefulness	Trust	3	0	0	3	1.00
Performance	Trust	3	0	0	3	1.00
Site Awareness	Trust	3	0	0	3	1.00

[Legend: Negative: Number of negative but significant relationships, NN: Number of Non-Significant Relationships, SIG: Number of Significant Relationships, Total: Total number of relationships between a pair of variables including significant, non-significant and negatively significant relationships].

Appendix 1.10. Results of Meta-Analysis

Meta-analysis is a prominent statistical tool in various research disciplines (Rana, Dwivedi and Williams, 2015). It is applied in economics, education, medicine and criminology (Jak, 2015). To conduct meta-analysis using the selected research studies, the current study has employed a trail version of comprehensive meta-analysis (www.meta-analysis.com). Table 10 presents the results related to meta-analysis of the 20 most frequently used relationships that have been tested at least three or more times across 45 studies on online shopping context. In addition to the independent and dependent constructs, Table 10 presents the information such as number of times a particular relationship was tested, total sample size, average beta, significance value for the effect size (i.e., p-value), standard normal deviations (i.e., Z-value), and the 95% lower and higher confidence intervals that ensure that the average beta value is likely to fall within this interval (Rana, Dwivedi and Williams, 2015). In other words, the table shows zero-order correlations effect sizes between 20 pairs of variables using the Hedges-Olkin method of random effects (King and He, 2006). The findings indicate that the cumulative effect of relationship between risk and online purchase intentions, trust and attitude, satisfaction and trust, and risk and trust were found to be non-significant, while the remaining 16 relationships were found to be significant. Additional analysis of relationships indicates trust (9 times), online purchase intentions (5 times) and attitude (2 times) were found to be the key and more frequently investigated dependent variables analyzed across various studies. Moreover, the other dependent variables such as risk, perceived quality, disposition to trust and satisfaction were examined with only one independent variable each. The outcome of meta-analysis evaluated for different relationships will work as a guideline for selecting some

constructs that have performed well as far as developing the proposed model to examine consumers' online purchase intentions. The meta-analysis technique and examination of zero-order correlations have been adapted from King and He (2006).

Table 10 (Appendix 1.10). Summary of Zero-Order Random Correlations

I.V.	D.V.	NS	T.S.S.	Avg (β)	p (ES)	Z-value	95% H(β)	95% L(β)
TR	OPI	11	11991	0.565	0.000	4.520	0.725	0.347
RSK		8	9455	0.244	0.101	1.642	0.497	-0.048
SQ		7	5522	0.480	0.000	9.264	0.560	0.390
AT		6	1662	0.584	0.000	3.637	0.773	0.299
PU		4	1184	0.285	0.000	4.780	0.605	0.285
TR	AT	6	1704	0.114	0.549	0.599	0.453	0.254
PU		4	1184	0.557	0.000	6.067	0.682	0.402
SQ	TR	4	2968	0.449	0.000	4.873	0.591	0.282
PU		3	866	0.501	0.000	5.305	0.638	0.334
PV		3	2016	0.628	0.000	4.519	0.785	0.395
SAT		3	1970	0.464	0.069	1.820	0.779	-0.039
RSK		3	702	-0.179	0.400	-0.842	0.236	-0.539
REP		3	1053	0.512	0.000	6.258	0.631	0.370
IQ		3	1587	0.569	0.000	10.655	0.644	0.483
INT		3	851	0.609	0.001	3.455	0.803	0.297
PEOU		3	886	0.556	0.000	18.579	0.600	0.509
TR	RSK	4	2428	-0.262	0.000	-3.359	-0.111	-0.401
SQ	PQ	4	4123	0.443	0.000	5.523	0.568	0.298
TR	DT	3	3556	0.104	0.042	2.038	0.202	0.004
TR	SAT	3	1161	0.539	0.000	5.851	0.666	0.380

[Legend: NS = Number of Studies, AT=Attitude, Avg (β) average (Beta), OPI=Online purchase Intentions, Behavioural intentions, D.V. dependent variable, DT=Disposition to trust, PEOU=Perceived Ease of use, H(β) highest (Beta), I.V. independent variable, INT=Interaction, IQ=Information quality, p(ES) estimated value of p (p-Value), PQ=Perceived quality, PU=Perceived usefulness, PV=Perceived value, REP=Reputation, SAT=Satisfaction, SQ=Service Quality, TR=Trust, T.S.S.=Total Sample Size].

Appendix 2.1. Main Study Cover Letter and Questionnaire

Norwich Business School
University of East Anglia
Norwich Research Park, Norwich, NR4 7TJ, UK

Dear Participant,

You are kindly invited to participate in a nationwide survey being conducted by Mr. Khalid Alhamzi, a PhD candidate at the Norwich Business School of University of East Anglia, UK.

The aim of this research is to understand the online consumer behavior. This survey questionnaire is linked to research that is focused on understanding how consumers build trust in websites and make purchases with those online retailers. You will be asked to browse through a website and you may need to recall your knowledge of online shopping. This questionnaire should take approximately 20 minutes.

The information provided here will only be used for scholarly purposes and you have our assurance that it will remain strictly confidential.

Please return the completed questionnaire to Mr. Khalid Alhamzi.

If you have any questions about this study, please contact the investigator on the following address: Mr. Khalid Alhamzi, PhD Student, Norwich Business School, University of East Anglia, Norwich Research Park, Norwich, NR4 7TJ, United Kingdom, Email: K.Alhamzi@uea.ac.uk, Mobile: 0044 (0) 7885273272 (United Kingdom).

I would like to take this opportunity to thank you in advance for your time and patience in completing this questionnaire. If you wish to answer this questionnaire online, please scan the barcode or write the link.

https://bit.ly/2BfsvFO

University of East Anglia

Respondent Selection:

*Please do not take part in this survey if you have never purchased from an online website before.

*If you are not a citizen of the United Kingdom, please do not continue.

Please rate each of the following statements on a scale of 1-7 where:

1=Strongly Disagree, **2**=Disagree, **3**=Somewhat Disagree, **4**=Neither Agree nor Disagree, **5**=Somewhat Agree, **6**=Agree, **7**=Strongly Agree.

The following statements only represent your perception, therefore rate them even if you are not very familiar with them.

Before answering the following questions, please spend a few minutes visiting IKEA website:

https://www.ikea.com/gb/en/

Note: Please circle your choice among the given options.

The following questions are about IKEA website

Item	1 = Strongly Disagree	2 = Disagree	3 = Somewhat Disagree	4 = Neither Agree nor Disagree	5 = Somewhat Agree	6 = Agree	7 = Strongly Agree
IQ1. The IKEA website provides accurate information.	1	2	3	4	5	6	7
IQ2. The IKEA website provides updated information.	1	2	3	4	5	6	7
IQ3. The IKEA website provides high quality information.	1	2	3	4	5	6	7
IQ4. Information on the IKEA website is relevant to me.	1	2	3	4	5	6	7
SyQ1. I think that learning about the IKEA website is easy.	1	2	3	4	5	6	7
SyQ2. The IKEA website is flexible to interact with.	1	2	3	4	5	6	7
SyQ3. I find IKEA website easy to use.	1	2	3	4	5	6	7
SQ1. The time I spend in order to shop at the IKEA website is highly reasonable.	1	2	3	4	5	6	7
SQ2. The effort involved in shopping at the IKEA website is worthwhile.	1	2	3	4	5	6	7
SQ3. The service experience at the IKEA website is excellent.	1	2	3	4	5	6	7
SQ4. I found significant value by shopping at the IKEA website.	1	2	3	4	5	6	7

Next few questions are about your trust in IKEA

Item	1 = Strongly Disagree	2 = Disagree	3 = Somewhat Disagree	4 = Neither Agree nor Disagree	5 = Somewhat Agree	6 = Agree	7 = Strongly Agree
TV1. I like to trust IKEA.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
TV2. I think IKEA is trustworthy.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
TV3. I like the reliability of IKEA.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
TV4. I value the trustworthy characteristics of IKEA.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
TV5. IKEA is dependable.	**1**	**2**	**3**	**4**	**5**	**6**	**7**

The following questions are about your intention to buy from IKEA website

Item	1 = Strongly Disagree	2 = Disagree	3 = Somewhat Disagree	4 = Neither Agree nor Disagree	5 = Somewhat Agree	6 = Agree	7 = Strongly Agree
OPI1. I will definitely buy from the IKEA website.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
OPI2. I intend to purchase through IKEA website if I have to buy furniture online.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
OPI3. I am likely to make a purchase from the IKEA website if I need to buy a product.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
OPI4. I would feel comfortable buying products from the IKEA website.	**1**	**2**	**3**	**4**	**5**	**6**	**7**

Kindly answer the next few questions about yourself

Item	1 = Strongly Disagree	2 = Disagree	3 = Somewhat Disagree	4 = Neither Agree nor Disagree	5 = Somewhat Agree	6 = Agree	7 = Strongly Agree
IMP1. I stay true to my personal values.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
IMP2. I act in accordance with what I believe in.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
IMP3. People can count on me to behave in the same way over situations.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
IMP4. I act according to personal values, even if others criticize me for it.	**1**	**2**	**3**	**4**	**5**	**6**	**7**

Please answer few more final questions

Item	1 = Strongly Disagree	2 = Disagree	3 = Somewhat Disagree	4 = Neither Agree nor Disagree	5 = Somewhat Agree	6 = Agree	7 = Strongly Agree
WS1. I consider myself knowledgeable about good search techniques for Internet shopping.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
WS2. I am extremely skilled at Internet shopping.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
WS3. I know how to find what I am looking for when Internet shopping.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
WS4. I know somewhat more than most users about Internet shopping.	**1**	**2**	**3**	**4**	**5**	**6**	**7**

Personal Information

[1] What age group do you belong to?

19-24 Years	**1**
25-29 Years	**2**
30-34 Years	**3**
35-39 Years	**4**
40-44 Years	**5**
45-49 Years	**6**
50-54 Years	**7**
55-59 Years	**8**
60 years and over	**9**

[2] What is your gender?

Male	**1**
Female	**2**

[3] Are you a British citizen?

Yes	**1**
No	**2** Please specify ……

[4] Which state of United Kingdom do you live in?

England	**1**
Northern Ireland	**2**
Scotland	**3**
Wales	**4**

[5] What is your highest level of education?

Secondary school	**1**
10+2/GCSE	**2**
Graduate (BA, BCom, BSc, BBA, BTech, BEng, MBBS)	**3**
Post-Graduation (MA, MCom, MSc, MBA, MTech, MEng, MD)	**4**
Postgraduate research (PhD, DBA, MPhil)	**5**
Other	**6** Please specify …….

[6] What is your occupation?

Student	**1**
Employed, full-time	**2**
Employed, part-time	**3**
Self-employed	**4**
Not employed	**5**
Retired	**6**
Disabled, not able to work	**7**
Other	**8** Please specify …….

[7] How long have you been shopping online?

Less than one year	**1**
One to less than three years	**2**
There to less than five years	**3**
Five to less than seven years	**4**
Seven years or more	**5**

[8] Are you a registered customer of any e-commerce websites (like Amazon, eBay, Zara, Adidas, Nike, Souq.com, MarkaVIP, etc...?)

Yes	**1**	Please specify the e-commerce brand websites --------
No	**2**	

[9] How often do you shop online?

Twice or more in a week	**1**	Once in 3 months	**5**
Once in a week	**2**	Once in 6 months	**6**
Once in two weeks	**3**	Once in a year or less than that	**7**
Once in a month	**4**		

Thank you very much for your time and patience for completing this survey.

Appendix 2.2. Multivariate Outlier

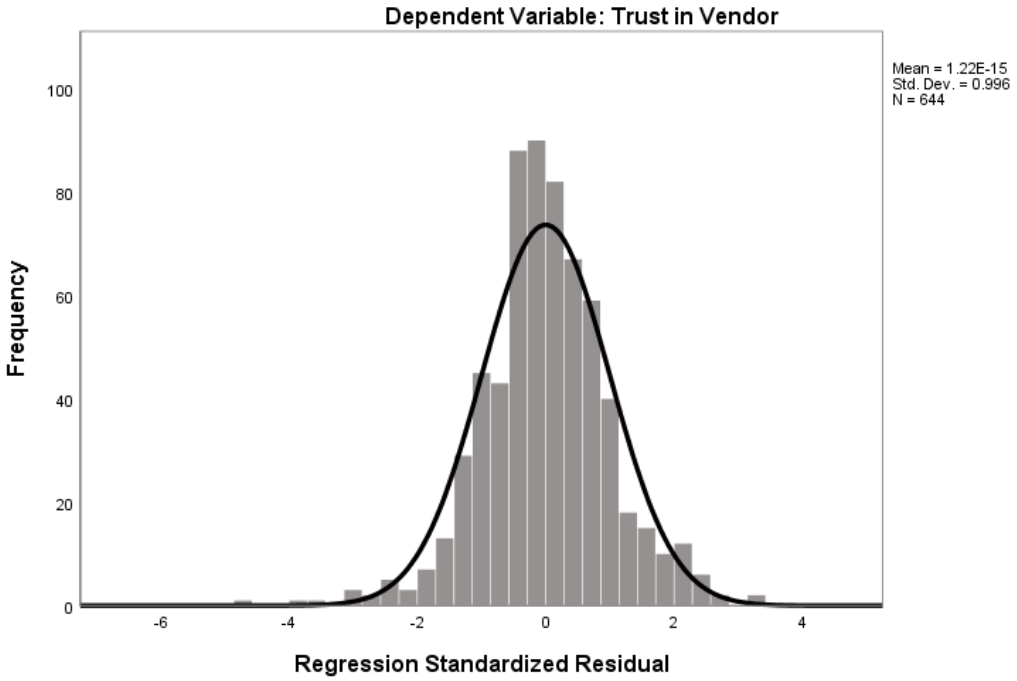
The current study has considered the examination of multivariate outlier as this could hinder the generalizability of the current study results as argued by Hair, Bush and Ortinau (2006) and Tabachnick and Fidell (2007). In order to figure out the main outlier cases in the current data of the sample, Mahalanobis-D squared distance (D^2) provided in the AMOS output file was tested. By considering the cut-off value as less than <0.001, about 21 cases have been identified as outliers as presented in Table 11. Dropping these 21 cases from the UK dataset reflected positive accuracy of the multivariate analysis. Additionally, these 21 cases represent 3.3% from the total sample size (644). In fact, this small percent will not cause a problem for the current study analyses. Therefore, these 21 outliers have been kept in the original dataset for the sample.

Table 111 (Appendix 2.2). Multivariate Outlier (Mahalanobis Distance)

N	Observation Number	Mahalanobis D-squared	P1	P2
1	637	143.284	.000	.000
2	636	120.206	.000	.000
3	571	119.147	.000	.000
4	625	118.296	.000	.000
5	604	112.976	.000	.000
6	392	88.299	.000	.000
7	620	87.499	.000	.000
8	628	85.752	.000	.000
9	605	83.787	.000	.000
10	148	83.016	.000	.000
11	613	82.609	.000	.000
12	608	80.924	.000	.000
13	44	77.534	.000	.000
14	502	77.239	.000	.000
15	642	77.028	.000	.000
16	629	76.293	.000	.000
17	591	74.917	.000	.000
18	599	74.138	.000	.000
19	406	71.273	.000	.000
20	600	71.189	.000	.000
21	606	70.717	.000	.000

Appendix 2.3. Histograms and P-P plot of Standardized Residuals

Trust in Vendor as Dependent Variable:



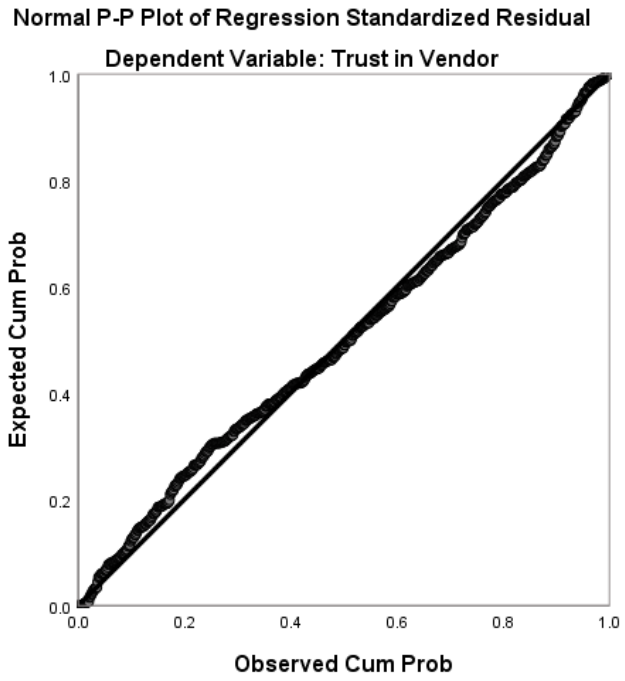
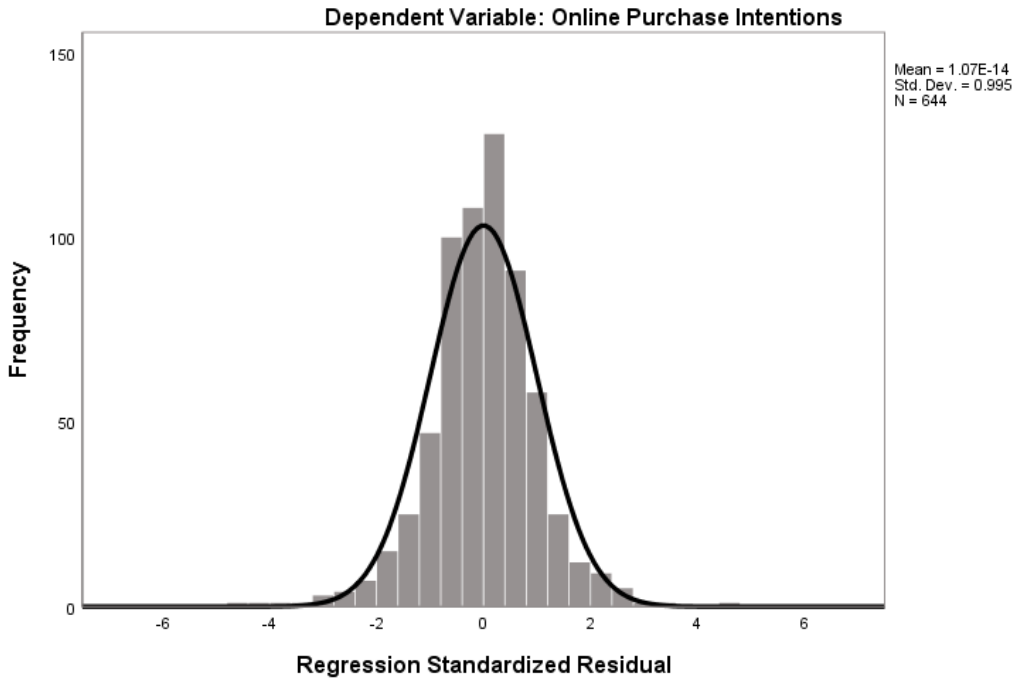


Figure 1 (Appendix 2.3). Histograms and P-P plot: Trust in Vendor

Online Purchase Intention as Dependent Variable:



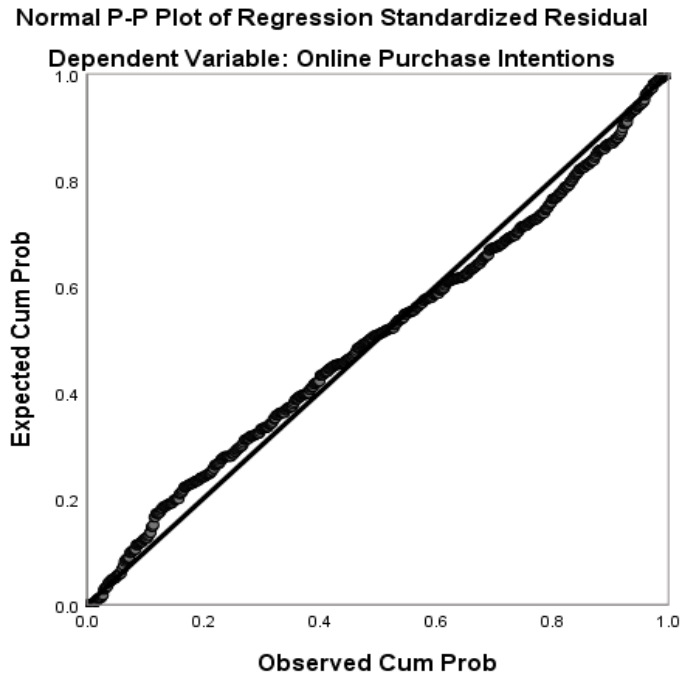


Figure 2 (Appendix 2.3). Histograms and P-P plot: Online Purchase Intention

Appendix 2.4. Ethical Approval Form

NBS-REC / E1

UNIVERSITY OF EAST ANGLIA
NORWICH BUSINESS SCHOOL
RESEARCH ETHICS COMMITTEE

RESEARCH ETHICS CHECKLIST

This form should be completed by all staff and students planning to conduct research that involves collecting data from human participants.

Before completing this form please read the University research ethics principles at:

https://portal.uea.ac.uk/en/ren/research-integrity/research-ethics/research-ethics-policy

Students should also discuss the ethical aspects of their proposed research with their supervisor before completing the form.

1. Applicant Details

Name: Khalid H Alhamzi

Student no. (if applicable): 4516737

Status (circle appropriate): PGT student / (PGR student) / Staff / Other

Course (if applicable): Management Research

Contact telephone number:

E-mail address: K.alhamzi@uea.ac.uk

Primary supervisor's name (if applicable):

2. Project Details

Title of project: About online purchase intention in relation with trust and other related antecedents in the context of the UK

3. Research Ethics Checklist

Please answer all questions by ticking the appropriate box:

	Yes	No
1. Does the study involve participants who are particularly vulnerable or unable to give informed consent? (e.g. people under 18; people with learning disabilities; students you teach/assess)		✓
2. Will it be necessary for participants to take part in the study without their informed consent at the time? (e.g. covert observation)		✓
3. Will any financial inducements (other than reasonable expenses / compensation for time) be offered to participants?		✓
4. Will the study involve discussion of sensitive topics in a personal, social, cultural, or commercial sense? (e.g. sexual activity, bereavement, drug use, illegal activities, whistleblowing)		✓
5. Could the study place participants at risk of physical or psychological harm, distress, or negative consequences beyond the risks encountered in normal life?		✓
6. Will the research involve any appreciable threat to the health and safety of the researcher(s)?		✓
7. Will the study involve any incitement to, encouragement of, or participation in, an illegal act? (by participant or researcher)		✓
8. Will the study involve recruitment of patients or staff through the NHS?		✓
9. Will participants be informed about the purpose of the research and the nature of the research procedures?	✓	
10. Will participants be debriefed after taking part in the research?	✓	
11. Will arrangements be made to ensure that data obtained from/about participants remains confidential?	✓	
12. Will participants be informed about the use to which the data will be put?	✓	
13. Will the consent of participants be obtained?	✓	
14. Will it be made clear to participants that they are free to withdraw from the research at any time, without negative consequences?	✓	

If you ticked a **WHITE** box for **ALL** questions in the checklist, further ethical approval from the NBS Research Ethics Committee is not required. Simply sign and return this form as indicated on page 3.

If you ticked a GREY (i.e. shaded) box for ANY question, you will also need to complete form E2: NBS ETHICAL APPROVAL FORM. The form asks you to provide more information about how you plan to deal with the 'grey area' ethical issues raised by your research. This does not mean that you cannot do the research but your proposal will have to be considered and approved by the NBS Research Ethics Committee.

Important: Please note that it is your responsibility to follow the University research ethics principles and any relevant academic or professional guidelines in the conduct of your study. **This includes providing participants with appropriate information sheets and consent forms, and ensuring confidentiality in the use and storage of data in accordance with the Data Protection Act.** Any significant change in the research question or design of the study may require completion of new E1 and/or E2 forms.

4. Signatures

Signature of Applicant:

Date: 05/09/2018

Supervisor declaration (for student research only)
Please tick as appropriate:

☑ I have discussed the checklist and ethical implications of the proposed research with the student and am satisfied that the study does not raise ethical problems that must be considered by the NBS Research Ethics Committee.

☐ I have discussed the checklist and ethical implications of the proposed research with the student. One or more potential ethical issues have been identified which require completion of form E2: Ethical Approval Form for consideration by the NBS Research Ethics Committee.

Signature of Supervisor:

DR DIMITRIOS DOUSIOS

Date: 19.09.2018

Submitting your Form(s)

PLEASE PHOTOCOPY THIS FORM FOR YOUR OWN RECORDS AND SUBMIT THE ORIGINAL

IF YOU ALSO NEED TO COMPLETE AN ETHICAL APPROVAL FORM (E2), PLEASE SUBMIT IT WITH THIS FORM (E1)

Please return your completed form(s) as follows:

PGT Students: NBS Teaching Office/Module Organizer

PGR Students: SSF Postgraduate Research Office/Chair of the NBS-REC

NBS Staff: Chair of the NBS-REC