

ROLE OF WEBSITE QUALITY ON ONLINE TRUST IN E-COMMERCE CONTEXT

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ABSTRACT

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Title Role of website quality on online trust in e-commerce context	
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<p>Abstract</p> <p>Since the proliferation of electronic commerce (e-commerce) in the late nineties, an increasing number of customers are taking advantages of its benefits such as convenient online shopping, product/service search, price comparisons etc. However, lack of trust is one of the greatest barriers to online shopping and a major challenge that online businesses face. In today's world, where competitors are just a click away, it is becoming more challenging for commercial websites to attract new customers and retain the existing ones.</p> <p>This study investigates the relationships between website quality, online trust, behavioural intentions and eWOM intentions in e-commerce context. Five website quality dimensions were studied to find out which dimensions have a significant positive impact on the formation of online trust. Based on the research objectives, a research model was adopted from previous literatures and developed. Seven hypotheses were proposed for the study.</p> <p>The research was conducted using a quantitative approach in which 310 responses were analysed using SPSS tool. The model was assessed using partial least squares structural equation modelling (PLS-SEM) in SmartPLS 3.</p> <p>The findings of this study support previous studies and hypotheses regarding significant influences of <i>website aesthetics</i>, <i>website information quality</i> and <i>security and privacy assurance</i> on online trust. However, in contrast to the previous studies, <i>website usability and speed of download</i> didn't have a significant influence on online trust. The results found that the most prominent website dimension is Website aesthetics because of its significant role in influencing online consumer trust by forming an initial impression of the site. Poor web interface causes rejection and mistrust of a website. Moreover, customers expect to find up-to-date information regarding products/services, company, as well as quality and easily accessible contents. With the GDPR regulations in the EU, customers expect that online merchants ensure security and privacy concerns. Also, the result showed that positive online trust leads to an increase in behavioural and eWOM intentions. This study provides practical insights to managers about inducing online trust with a high quality website.</p>	
Key words Website quality, web quality dimensions, e-commerce, online trust, e-Word of mouth intentions, behavioural intentions	
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1 INTRODUCTION

With the arrival of the internet, e-commerce has drastically transformed the world of transactions which once used to happen only with direct contact between the individuals (Yazdanifard & Oluwasegun, 2012). The internet has provided huge power to today's consumers with convenient and efficient resources for price comparison as well as wider selection of products and services enabling customers to shop from their chosen vendor at any time in any part of the world. Thus, the advancement in technology and rise in technology adoption has led to exponential growth in online shopping behaviour worldwide. Global e-commerce sales amounted to 2.3 trillion US dollars in 2017 and it is projected to grow up to 4.88 trillion US dollars in 2021 (Statista, 2019).

This rapid growth in e-commerce has influenced both today's marketing practitioners and consumers. On the one hand, consumers seek easy and fast access to information and online interaction to exchange ideas and compare experiences with other consumers. On the other hand, marketers need to adapt and develop effective marketing strategies to fulfil the higher demands of consumers and create long-lasting relationships with them (Yazdanifard & Oluwasegun, 2012).

Dutton (2013) posits that trust is inherent to any transactions and its absence can cause reduction in sales, damage to reputation and decrease in market shares of a business. In the context of e-commerce, transactions happen through the internet between people who have never met before or are located in different parts of the world. Moreover, consumers cannot check the quality of the products before their purchase or ensure the safety and security of their private information while doing online shopping (Lee & Turban, 2001). Hence, online shopping is characterized by perceived risk, lack of control and consumer vulnerability. Due to the uncertainty and dependency, trust is even more critical in e-commerce context (Shankar et al., 2002).

Lack of trust is one of the greatest barriers of online shopping and a major challenge that online businesses are facing (Jarvenpaa et al., 2000; Shankar et al., 2002). Shankar et al. (2002) pointed that websites act as a store frontage for online retailers and a source of information about products and services for consumers. If there is no any prior relationship between the online merchant and buyer, website acts as the primary object of interaction. Based on the customers' initial judgement and experience with the website, trusting beliefs are formed. Thus, the impact of a company's website quality on online trust is significant and it is imperative that building a good quality website enhances the formation of online trust. It is crucial for businesses to understand the aspects of website quality from user's point of view in order to gain and retain loyal market share (Dutton, 2013).

1.1 Research motivation and gaps

The massive use and adoption of the internet in the late nineties gave birth to many online companies. As a result, there is ample research on topics related to e-commerce and its adoption, online shopping behaviour, impact of trust on consumer attitudes, loyalty and purchase intentions etc. (Jarvenpaa et al., 2000; Gefen et al., 2003; McKnight et al., 2002). Similarly, various previous researchers have highlighted the crucial role of online trust in establishing long-term relationships with consumers (Nadeem et al., 2015; McKnight et al., 2002; Gefen et al., 2003). Other researchers developed instrument to measure perceived website quality (Aladwani & Palvia, 2002; Loiacono et al., 2007). The detailed review of the past studies reveals that there are only few research that take a further step in combining these concepts together and exploring different dimensions of website quality and study their direct impact on online trust. This study seeks to fill this research gap.

From the extant literature (Ranganathan & Ganapathy, 2002), it can be concluded that the study of the key characteristics of a website that consumers perceive to be important and effective is indispensable for online businesses. Understanding the trustworthiness of a web vendor from users' point of view provides insights about online consumer behaviour and cues to sustain buyer-seller relationships (Ranganathan & Ganapathy, 2002; Dutton, 2013). According to McKnight et al. (2002), a positive experience on the website enhances online trust that consequently assists in achieving the primary purpose of any online business, whether it is increasing online sales or growing brand awareness. In contrary, bad website experience influences online trust negatively which affects the business adversely. Thus, it is crucial to examine the different aspects of website and have a deeper understanding of the key dimensions that have significant impact on online trust.

In 2006, Aladwani conducted an empirical study to understand the relationship between website quality and consumers' web attitudes and purchases. Expressing the possibility that consumer attitudes and purchase intentions may change over time, he suggested for future studies to re-test the same research model using wider sample of web consumers. Chen and Dibb (2010) conducted another study among university students to investigate the antecedents and consequences of trust in the online retail context. They focused in consumer attitudes and site approach intentions as the outcomes of trust.

There have been limited studies in this field which has been conducted among residents of Finland. Furthermore, as stated by Aladwani (2006), it is interesting to compare the past results and see if there are any changes on online consumer behaviour and evaluation of web quality from user's perception. This study will contribute to the present studies about impact of website quality on online trust context through a more recent data. The author finds it necessary to

learn about the constructs of good quality e-commerce websites so that the strategies for developing positive online trust in terms of web development can be learned. Additionally, the author is planning to work closely with designing and building websites in the future, so this study also comes out as a matter of great personal interest.

1.2 Research aim, objectives and scope

The aim of this thesis is to investigate the impact of website quality and identify the key web quality dimensions that play significant role in the development of online trust. Additionally, this thesis seeks to examine the influence of online trust on behavioural intentions and electronic Word-of-mouth intentions to determine consumer behaviour towards e-commerce sites and online shopping. Finally, actionable insights are collected for building e-commerce websites to be trust-inducing as a part of marketing and communication strategies. This will be achieved by first investigating the existing literature to understand the concepts of online trust and website quality. Based on the extant literature (Chen & Dibb, 2010), hypotheses and research model are developed. Next, a survey is conducted among the residents of Finland in order to investigate the relationships between website quality dimensions and online trust and the outcomes of online trust.

Online trust, in this study, refers to the trust of consumers towards e-commerce websites and the online merchants that sell products to consumers. Trust in the third-party services that may influence the buyer-seller trust (Jarvenpaa et al., 2000) are not considered in this study. The study findings are applicable to business-to-consumers (B2C) e-commerce sites and is limited to e-commerce context in a developed country. Furthermore, the study focuses on inducing online trust between consumers and online merchants by using a high-quality website. Other trust-inducing factors such as trustworthiness of the shopping medium, reputation and size of the merchant (Lee & Turban, 2001), prior experience with the company (Santos & Fernandes, 2008) are out of the scope of this thesis.

1.2.1 Research questions

In order to accomplish the goals set for this study, it is first essential to understand how website quality impacts online trust and the degree of relationship between the two. Determining this will provide further insights on various website quality dimensions as the predictors of online trust, out of which key dimensions can be identified. Finally, as a consequence of online trust, consumer behaviour towards e-commerce site and online shopping can be further analysed. Based on these, the research questions of this study are presented below:

- RQ1: How does website quality impact online trust in e-commerce context?

- RQ2: Which of the proposed website dimensions have significant influences on online consumer trust?
- RQ3: Does online trust impact consumer behavioural intentions?
- RQ4: Does online trust impact eWOM intentions?

1.3 Research structure

This study consists of five chapters. In chapter one, an introduction related to the e-commerce environment and the importance of trust in this context is provided. We discuss briefly about the power of the internet and how it has shifted the traditional way of doing businesses. In chapter two, extant literature are reviewed and theoretical background that is relevant for the research topic is introduced. The theoretical concepts are structured according to the research objectives and a conceptual framework is modelled. Finally, hypotheses are developed based on the previous literature and the conceptual framework. In chapter three, the research methodology is discussed. Quantitative research method is highlighted and how this method is utilised for this particular research. In chapter four, description of the study findings is provided and the survey results are analysed to examine if the hypotheses are supported or not. Finally, in chapter five, theoretical implications, managerial implications, evaluation and limitations of the study are presented. At the end of the study, references and an appendix of the questionnaire is provided.

2 THEORETICAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

This chapter introduces the theoretical concepts relevant to the thesis project. Initially, the concept of trust in general is examined. Since the thesis focuses on online environment, further research is done regarding online trust in e-commerce context. As an important basis for this thesis, website quality and its dimensions are discussed. Five website quality dimensions are identified as antecedents of online trust. Similarly, behavioural intentions and eWOM intentions are examined as outcomes of online trust. Based on these concepts, research hypotheses are proposed and a research model is constructed.

2.1 Trust: Conceptualization and definition

2.1.1 Introduction

Trust is a concept that has been studied in multiple disciplines and therefore it has various definitions (Santos & Fernandes, 2008). It has received attention from several studies such as psychology, sociology, political science, economics, and history. Furthermore, organizational studies were significantly emphasizing the concept of trust and its importance was mentioned by various scholars in communication, leadership, management, negotiation and so on. However, there was an absence of proper definition of trust itself as well as a lack of clarity between trust and its antecedents and outcomes (Mayer et al., 1995). Lewicki and Bunker (1995) stated that each discipline has its own perspectives on the phenomenon of trust and reviewed that these perspectives can be categorized into the views of three main groups. They are:

- Personality theorists,
- Sociologists and economists, and
- Social psychologists

From the viewpoint of personality theorists, trust is largely determined by individual personality differences and on the specific developmental and social factors. For them, trust is a belief which originates during a person's early psychosocial development and is entrenched in the personality (Lewicki & Bunker, 1995). Furthermore, they also believe that an individual's predisposition to trust is greatly shaped and affected by life events that display cultural and socioeconomic differences or perceived similarity in attitudes and behaviours among different individuals.

Sociologists and economists focus on trust as an institutional phenomenon (Lewicki & Bunker, 1995) which implies that building or developing trust is a process of embedding *trust* within an organization, social system or society as a whole. A person can either trust another person (personal trust) or an organization (institutional trust). Personal trust develops when there are frequent interactions between two or more individuals and is based on how well they know each other, dependence upon each other and the length of relationships. On the other hand, institutional trust develops when individuals reflect their personal trust to larger organizations comprising of individuals with lower familiarity, lower dependence and fewer interactions. According to Rousseau et al. (1998), economists viewed trust as an estimation about the behaviour between the parties that the other party will act as obliged so that it is beneficial to all. Moreover, sociologists focused on how institutions and incentives were created to reduce anxiety and uncertainty associated with transactions among relative strangers (Yoon, 2009).

In contrast, social psychologists observed trust at the interpersonal and group levels. More precisely, they focused on the transactions among individuals. Rousseau et al. (1998) stated that psychologists identified trust in terms of characteristics of trustees and trustors and focused on internal cognitions that personal attributes provide. Moreover, Lewicki and Bunker (1995) reviewed from prior literature that trust has been generally identified as an expectation about the behaviour of others in transactions. However, they argued that trust is more than simple expectations because there are specific parameters and constraints when setting up expectations. In contrary to the perspectives of personality theorists that focus on how trust development is impacted by early life events, social psychologists focus on transactions that create or destroy trust.

2.1.2 Definition of trust

Despite a multi-disciplinary view, trust is a significant social construct that is required to build any relationships and operate in the social world (Evans & Krueger, 2009). Trust is considered to be an important factor under conditions of uncertainty and risks. Mayer et al. (1995, p. 712) 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.*” They further explained that trust and risk are closely interrelated; higher perceived risk requires greater trust to facilitate a transaction. Similarly, Luhmann (1979) noted trust as a belief that the other party will behave in an expected manner. This implies there are two critical components of trust:

- Forming a relationship with another party with positive expectations
- Being vulnerable which means that there is something of importance to be lost and willingness to take risk.

While various interpretations for the concept of trust exist in multiple disciplines, Bauman and Bachmann (2017) identified three key elements for trust to occur. In their research, they identified that there must be two actors for trust to develop. First one is a trustee (to whom trust is made) and the second one is the trustor (the one who establishes trust). The second finding was that trust exists only if there is some risk or the situation is uncertain. Thus, vulnerability must be present. Finally, their study concluded that trust is context-specific. Based on various circumstances, trust is influenced by social, environmental and cultural factors.

2.1.3 Online trust

In simple terms, online trust or e-trust refers to trust in a digital environment. According to Shankar et al. (2002), online trust is a phenomenon of relying on a firm by its stakeholders regarding its business activities on an electronic medium and specifically its website. Online trust exists in an environment where there is an absence of direct and physical contact, perception of social and moral pressures are different and digital devices come into play in place of human interaction (Taddeo, 2009).

There are classical arguments about whether online trust truly exists or not since it does not fulfil the conditions that are required for the emergence of trust. Online trust lacks direct interaction between agents, presence of shared norms and ethical values that regulate the interactions and identification of the parties involved in the interaction, which are considered to be the prerequisites for trust to occur. Furthermore, this also brings into question whether trust is affected by environmental features (as stated in previous chapter) in case it exists in both digital and non-digital contexts or is it mainly affected by the features of the agents and their abilities.

Taddeo (2009) highlighted the emergence of the second generation of the world-wide-web (Web 2.0) which has been able to resolve the concerns regarding the arguments of the existence of online trust. According to him, user generated content, social media and live chat features have made it comparatively easier for communicating and interacting while various tools allow users to identify each other virtually such as email addresses, online banking, social media accounts etc. Additionally, with the growing number of internet communities worldwide, shared norms and rules are developed to regulate behaviour of internet users in virtual communities despite the distance and cultural diversities (Taddeo, 2009). Thus, the obstacles that were claimed by the critics of online trust seem to be no longer of much concern with the advancement of technology and the growing number of online shoppers.

This statement can be further supported by Pavlou (2003) who explained that it is due to the existence of online trust, consumers are willing to become vulnerable to web retailers and are shifting their habits from traditional door-to-door shopping to online shopping. Online trust is becoming increasingly common (Taddeo, 2009) and companies' perception of online trust has evolved to being a more complex construct that involves credibility, emotional comfort and

quality for multiple stakeholders in addition to security and privacy issues (Shankar et al. 2002).

2.2 Why is trust important for e-commerce?

Electronic commerce or e-commerce refers to the buying and selling of goods and services on the Internet. Instead of a human service provider, an e-commerce store provides service through its website interface (Gummerus et al., 2004) which is integrated into online payment systems. Unlike in traditional businesses where people have direct contact, the transactions happen through the internet between people who have never met before or are located in different parts of the world. Moreover, consumers cannot check the quality of the products before their purchase or ensure the safety and security of their private information while doing online shopping (Lee & Turban, 2001).

According to Luhmann (1979), a trustor's experience with the object of trust determines the level of trust toward that object. Since websites act as a store frontage for online retailers (Ladhari et al., 2013) and it is the primary object of online trust, customers develop online trust based on their experience while interacting through its website. Shankar et al. (2002) posited that online trust involves relying onto a firm's activities through its website. Moreover, it is due to online trust, the insecurities and perceived risk related to online shopping is minimized.

Gummerus et al. (2004) identified that perceived service quality and customer trust are primary determinants of a successful business both online and offline. According to Mcknight et al. (2002), trust in the online vendor constitutes of two inter-related components. First is the *trusting belief* which refers to the perception of the characteristics of trustee inducing the trustworthiness and second is the *trusting intentions* which refer to the willingness of the trustor to become vulnerable. Online trust is measured by the trustworthiness of companies in which the trusting beliefs - benevolence, perceived competence and integrity play significant role (Mayer et al., 1995). Benevolence refers to customer care and willingness to act upon customer's interests. Competence refers to a company's ability to fulfil customers' needs and Integrity refers to honesty and promise keeping (Mcknight et al., 2002).

Website as one of the most important virtual assets of a business, connects online shoppers and vendors and acts as a medium for dissemination of information, collecting information about products and services as well as performing online transactions and sharing reviews. Gummerus et al. (2004) revealed trust as a significant factor for online vendors to continuously attract new customers and retain the existing customers. Thus, it can be concluded that trust is crucial for e-commerce and the overall quality of a website and its constructs play a great role in gaining online consumer trust. Online merchants are keen on increasing online consumer trust by ensuring quality website that fulfil its customers' needs and expectations.

2.3 Website quality

Websites act as storehouses of information aiming to assist its visitors by providing information they are seeking. In addition to providing information, websites enable consumers to do online shopping while giving an impression of its effectiveness (Ranganathan & Ganapathy, 2002). In an e-commerce context, a website is the primary interface between the customer and the online vendor (Gefen et al., 2003) and as stated by Chang and Chen (2008, p. 819), “*perhaps the only way an online store communicates with its customers*”.

Companies, these days consider website as an essential digital asset and an important tool for executing their marketing and sales funnel strategy. Website quality is a crucial concept in e-commerce because the purchase decisions of users are affected by their perception of website quality (Hsu et al., 2011). Furthermore, online shoppers rely on website attributes for decision making as similar to relying on cues like brand and reputation in traditional shopping environment (Wang et al., 2015). According to Jeong et al. (2003), website quality is the ultimate ability of a website in delivering intended messages to its visitors. From their research on the consequences of website quality, they concluded that information satisfaction plays a significant role in determining the behavioural intentions of consumers and their perception of website quality. “*Satisfaction with web site information was a major determinant of e-customers’ intention to purchase that brand*” (Joeng et al., 2003, p. 172). However, Jeong et al.’s definition of website quality was claimed to focus on online vendors and “*overlook*” the significance of customer’s needs (Wang et al., 2015).

Alternatively, Aladwani and Palvia (2002) conducted a research to develop an instrument for measuring website quality that focused on user’s perception. They defined website quality as “*users’ evaluation of a website’s features meeting users’ needs and reflecting overall excellence of the website*” (p. 469). In their view, previous researches on website quality were fragmented and only discussed some aspects or attributes of website quality instead of focusing in its major dimensions. They argued that the measurement of web quality should be multi-dimensional due to web quality being a complex concept. In their research, initially 55 web quality attributes were administered, out of which 25 sample items remained in the list after a couple of iterations and at the end the of factor analysis (Aladwani & Palvia, 2002). Figure 1 demonstrates some sample items which were discovered to be relevant for measuring perceived website quality:



FIGURE 1 Sample items to measure perceived web quality by Aladwani and Palvia (2002)

From their research on past literature which discussed on one or more attributes of website quality, the authors identified four dimensions to measure perceived web quality, which are technical adequacy, specific content, content quality and web appearance (Aladwani & Palvia, 2002). Table 1 represents the sample items that are included in each of the web quality dimensions.

TABLE 1 Web quality dimensions by Aladwani & Palvia (2002)

Dimension	Sample items
Technical adequacy	Security; ease of navigation; broadcast services; limited use of special plug-ins; search facilities; anonymity; availability; valid links; reliability; browser sniffing; personalization or customization; speedy page loading; interactivity; ease of access; multi-language support; protected content; bookmark facility.
Specific content	Specific details about products/services, customer support, privacy policies, and other important information.
Content quality	Information usefulness, completeness, accuracy, and so on.
Web appearance	Attractiveness; distinctive hot buttons; changing look; organization; proper use of fonts; proper use of colors; proper use of graphics; graphics-text balance; proper use of multimedia; style consistency; proper choice of page length; good labeling; text only option; proper use of language/style.

Similarly, Ranganathan and Ganapathy (2002) examined the main characteristics that consumers seek in a website and identified the underlying dimensions. In their study, they adapted two essential aspects of websites: *content* and *design* (as stated by Huizingh, 2000) and derived four key dimensions of a B2C website as perceived by online consumers. They are: information content, design, security and privacy (Ranganathan & Ganapathy, 2002). Their research implicated security, privacy, design and information content to be the best predictor of online purchase intent respectively.

A group of other researchers, Karimov et al. (2011) investigated trust inducing website dimensions focusing on *initial trust*. They conducted an empirical research with an aim to support their hypothesis: “*website design cues effectively enhance consumers’ initial trust towards unfamiliar online vendors*” (Karimov et al., 2011, p. 272). Based on prior literature, they classified website quality into three broad categories: visual design, social cue design and content design. In their research, they referred visual design as the visual attractiveness of a website. In addition to elements like colour usage, layout, graphics and overall look of the website, visual cues can provide information about retailer as well as influence shoppers’ emotional responses. Furthermore, social cue design means embedding social presence in a website with face-to-face interaction or with photos, videos and blogs. Finally, content design refers to providing any sort of relevant information such as company information, product/service information, privacy policies etc. (Karimov et al., 2011). The authors compiled various elements of trust inducing website design dimensions from their research on prior literature which is demonstrated in table 2.

TABLE 2 Classification of trust-inducing website design dimensions by Karimov et al. (2011)

Dimension	Sub-dimension	Examples
Visual design	Graphics	Product image, size zooming and 3D clipart, Background colour, contrast and font.
	Structure	Navigation design: simple and consistent navigation. Navigation reinforcements: guides, tutorials and instructions. Accessibility of information: no broken links or missing pictures. Page design techniques: space and margin, visual density.
Social cue design	Human-like features	Facial photo: embedded photographs that give a feeling of human contact. Video stream: a rich media cue that transmits visual and audio cues.

(continues)

TABLE 2 (continues)

	Assistive interface	Avatar: interactive on-screen characters that are able to use verbal cues. Recommendation agent: software-based advice-giving system. Synchronous communication media: instant messaging, chat/audio lines.
	Social media	Mass media: information that comes from other websites or the press. Customer reviews: a venue where individuals share their experiences. Online social networks: sites where people share ideas, pictures or videos. Blogging: Web community blogs, support forums, or discussion boards.
Content design	Informativeness	Company information: brand-promoting information, company logo. Product information: comprehensive and correct product information. Service information: overall support delivered by the web site. Background signals: congruence signals and promotional signals.
	Brand alliances	Brand equity: brands with positive image. Hypertext links: links that create a perception of a relationship.
	e-Assurances	Internally provided assurance structures: company policies. Externally provided assurance structures: third-party seals.

In 2010, Chen and Dibb conducted an empirical research to explore the antecedents and consequences of trust in online retail context. They primarily focused on website quality as antecedents of trust. In their research, they reviewed various literature that proposed different scales to measure e-service quality. One of the pieces of literature they reviewed was that of Loiacono et al. (2007), who developed the WebQual scale, an instrument developed for consumer evaluation of websites. This included 12 dimensions: *informational fit-to-task, tailored information, trust, response time, ease of understanding, intuitive operations, visual appeal, innovativeness, emotional appeal, consistent image, on-line completeness, relative advantage*. Loiacono et al. (2007) claimed WebQual to be a highly validated instrument with an ability to provide detailed measurements of organizational websites.

Chen and Dibb (2010) supported this instrument in their research by identifying that this scale overlaps with the SiteQual scale (developed by Yoo & Donthu in 2001) which uses the dimensions of *ease of use, aesthetic design, processing speed and security to measure the perceived quality of e-commerce sites*. Additionally,

WebQual scale also aligns with the study of Zeithaml et al. (2002) which suggested that e-service quality comprises *information availability, ease of use, privacy/security, graphic style, reliability, efficiency, system availability, fulfilment and privacy* (Chen & Dibb, 2010). Based on these literature, Chen and Dibb (2010) developed a multi-dimensional view of website quality and highlighted a range of website quality dimensions in their study model. They are: *Website usability, security and privacy assurance, speed of download, website information quality and website aesthetics*.

2.4 Website quality dimensions

This chapter discusses the five website quality dimensions included by Chen and Dibb (2010) in their research model. Because the nature of the research, i.e. relationship between website quality and trust as well as the research industry (online shopping sites / e-commerce) matches with the scope of this thesis, the website quality dimensions from Chen and Dibb (2010) is adopted for the research model development.

2.4.1 Website usability

Usability is a vital concept in Human-Computer Interaction (HCI) research. ISO 9241-11 standards defines usability as the extent to which a system can be used effectively, efficiently and satisfactorily in a particular context by particular users (Bevan et al., 2015). The ultimate purpose is to achieve pre-defined goals of the specified users for which they use the system. It has been found that when evaluating the usability of a system, these three aspects, *effectiveness, efficiency* and *satisfaction* are considered to be the most important components. Effectiveness refers to the success – how accurately and completely users can achieve the specified goals. Efficiency refers to the resources used in relation to the accuracy and completeness of the goals. And satisfaction refers to the degree of comfort and acceptability of the system by its users and other stakeholders (Bevan et al., 2015).

The concept of website usability is derived from the HCI domain, referring to the ease of use of a website. Past researchers have proposed various criteria to evaluate the usability of a website. Based on the extant literature, Roy et al. (2001) identified five factors to evaluate the website usability, namely: *ease of navigation, consistency, learnability, perceptual limitation and user guidance or support*. Table 3 presents what each of these factors implicates.

TABLE 3 Website usability criteria by Roy et al. (2001)

	Factors	Explanation
1.	Ease of navigation	Find what you want & know where to find
2.	Consistency	Use of standard elements and conventions

(continues)

TABLE 3 (continues)

3.	Learnability	Easy to learn by using simple & clear language, meaningful display and logical grouping
4.	Perceptual Limitation	Consider human perceptual organizational limitations
5.	User guidance/support	Good user guidance and support when needed

Similarly, Zeithaml et al. (2002) pointed out a site's search functionality, download speed, overall design and organization as some of the key elements that affect usability. Chen and Dibb (2010) adopted the concept of website usability in terms of ease of navigation aspect and design features that support website usability. They stated that users visit a website with a specific purpose in their mind. A website can be considered to be easy to use when users' purpose of visiting the website is fulfilled easily without any extra effort. The web interface is intuitive, the user flow is logical and navigating between pages is seamless.

Previous researches suggest that a usable website creates positive attitudes towards e-commerce sites and influences consumer online behaviour in terms of making online purchases and revisit the website (Roy et al., 2001). When evaluating the usability of a website, unclear formats, difficult navigation, lack of interaction and ability, inefficient search functionalities etc. are found to be the most common problems. Evaluating usability issues detect these problems leading to the improvement of systems (Díaz et al., 2017). However, besides the aforementioned criteria, the perception of usability of a website is also influenced by the cultural background of users. Díaz et al. (2017) explored the relationship between usability evaluation, cultural factors and interfaces design. The key takeaway was website usability is context dependent and significantly influenced by cultural aspects. The evaluation of usability can be different depending on who is using the system and for what purpose they are using it. In addition, there can be differences in the interpretation of users when using different symbols, icons and languages.

Users don't want to spend their time learning how to use a website and hence website usability is critical to the success of any system, e-commerce websites being one of them. Díaz et al. (2017) highlighted the importance of taking such aspects into consideration and pointed out the use of cultural-oriented usability dimensions. When designing websites, it is important to consider cultural perspectives for both global and local website users.

2.4.2 Security and privacy

Security and privacy are two distinct but related issues, considered as dominant criteria when evaluating a website quality in e-commerce context (Kim et al., 2003). Security refers to the protection of users from possible fraud, risks and loss of finances or financial information from their credit card. On the other hand,

privacy refers to protection of customers' private information, ensuring anonymity and providing informed consent (Zeithaml et al., 2002).

As a website quality dimension and more specifically in the e-commerce context, security and privacy assurance refers to the extent to which e-commerce websites guarantee the safety of customers' financial information (such as credit card information) provided for transaction and customers' personal data information such as name, address, email etc. which are collected during online transactions (Chen & Dibb, 2010). According to Gefen (2000), online payment security, reliability and privacy policy of online stores are the major concerns for customers. Supporting to this statement, McKnight et al. (2002) stated that unfamiliarity of the online merchants and uncertainty about their attributes and behaviours are some of the reasons for the existence of such concerns. In addition to this, some consumers also perceive the web environment as untrustworthy since it lacks direct / face-to-face interaction with the online merchants.

In comparison to the traditional brick-and-mortar stores, there is more risks and uncertainty in e-commerce which is why it is more difficult to establish trust between the two parties. As online companies have large amount of data about their customers, customers tend to feel insecure and question whether their confidential information will be shared with third parties. With the increase in the use of the Internet worldwide, there is also an increase in online frauds, spyware, malware, consumer data leaks and so on. Moreover, lately, there are frequent discussions on the data and privacy issues as well as various media calling out to big companies regarding the supposed security of their users' data (For e.g. Facebook data breach scandal). This has influenced the consumers' security and privacy risks perception, shying them away from performing online transactions and hesitant to disclosing their private and financial information.

While majority of online sites provide privacy policies and guarantee for the security of online transactions, Kim et al. (2003) pointed out that there is not detailed information about how data are secured. However, in comparison to the past, with the onset of GDPR regulations in the EU in 2018 (more about this is discussed in Chapter 5.2), companies are legally bound to provide detailed information about where, for what purpose and how customers data are used. In order to reduce customers' perceptions of significant risks and uncertainty, e-commerce sites must assure security and privacy mechanisms to its users which establish trust and contribute to positive consumer behaviour. Displaying logos of trusted third parties, using customer reviews and testimonials etc. have proven to provide some security and privacy assurance to the consumers (Chen & Dibb, 2010).

2.4.3 Speed of download

Speed of download refers to how quickly a website can display its content, respond to the requests made by the visitors or perform actions as directed by the users. Chen and Dibb (2010) highlighted that speed of download of a website directly impacts users' interaction with the website. Online stores that have lower

delays are highly preferred to the ones that take a longer time to load and perform. This was also supported by the study of Akamai which concluded slow-loading and crashing sites cause dissatisfaction leading to bad user experiences (Akamai, 2014).

With the access and adoption of high speed internet throughout the years and the use of smartphones, online shoppers are becoming more impatient. Their expectation of website performance in terms of speed has grown even more in these recent years. Consequently, an e-commerce site with better download speed is an indication of a good quality website. In a study conducted by the Jupiter Research in 2006, researchers found that the average time of the online shoppers to wait for the web content to load was four seconds. If the webpage doesn't download within this time, the shopper is likely to abandon the website (Krishnan & Sitaram, 2013). Another study conducted by Akamai found the ideal wait time of the online shoppers changed to two seconds. While 49% of consumers expect a page load in two seconds or less, 18% expect an instant page load (Akamai, 2014).

Thus, download delays are considered as one of the technological impediments to e-commerce. Slow performing websites have adverse effects in the e-commerce domain causing negative perception of the company, hindrance for the customers for making online transactions and/or even revisiting the site (Akamai, 2014). In contrast, websites that can provide information quickly positively changes the users' preferences towards a store. Chen and Dibb (2010) also discovered that while some prior literature clearly agreed on the direct relationship between the download speed and user attitudes towards a website resulting to a positive consumer behaviour, some findings claimed that the overall experience is more important in triggering users' attitudes towards a website instead of just download speed.

2.4.4 Website information quality

Website information quality refers to the quality of the content provided to the site visitors regarding its product and service. While product-related information involves product descriptions, pricing details, availability, delivery information and additional details about the products presented on the site, service related information pertains to the specific company related information such as company's history, mission, service features, contact information, return and refund policy (Chen & Dibb, 2010). Past researchers agree that the quality of information in a website is one of the factors for the success of any e-commerce site (Aladwani & Palvia, 2002; Aladwani, 2006; Chen & Dibb, 2010). Similarly, Aladwani (2006) also found that information quality is a vital predictor of consumer behaviour in online context.

Website serves as a source for dissemination of information and in order to attract potential buyers, high quality information content is a must (Aladwani, 2006). Providing good and adequate information supports potential buyers while seeking information and encourages them to take action. According to Aladwani

and Palvia (2002), some of the characteristics of a high-quality information are *its usefulness, completeness, clarity, uniqueness, accuracy and ease of access*. Chen and Dibb (2010) also postulated that site information should be relevant as per the users' actions, easy to understand, consistent, accurate, sufficient and up-to-date.

Park and Kim (2003) found significant relationship between website information quality and information satisfaction. Consumers' satisfaction level is determined by the quality of information provided to the users while they are navigating through the website. Furthermore, they identified that information satisfaction is one of the key factors that affect consumer purchase behaviour in an online shopping context. If consumers' expectations regarding information are not met, it can cause unfavourable reactions such as distrust, unwillingness to interact with the system, negative consumer attitudes and lack of purchase intentions (Aladwani, 2006).

2.4.5 Website aesthetics

The aesthetic aspects of a website refer to its general look and feel for the users. Previous researchers have investigated this dimension using different names such as *appearance quality* by Aladwani and Palvia (2002), *design* by Ranganathan and Ganapathy (2002) and *visual appeal* by Loiacono et al. (2007). Despite the difference in the names, they all indicate the attractiveness of a website and the enjoyment (fun and pleasure) users receive while navigating through the webpages. According to Loiacono et al. (2007), consumers seek "*full experience*" and want to enjoy the whole customer journey phase even in online context. Whether they are on the site to make any purchase or just to "*scroll*" for information, website must create a pleasant experience by ensuring a visual and emotional appeal and uniqueness. Wang et al. (2015) stated that aesthetic aspects provide a virtual experience to the users influencing whether the user may or may not stay in the website and make any online purchase.

Elements such as the layout, graphics, structure, use of fonts, colours, and background patterns play important role in making a website look more attractive (Chen & Dibb, 2010). Aladwani (2006) stated that use of unfriendly colours and inconsistent style easily distract consumers making it difficult to convince them to continue using the site. In order to capture consumers' attention, a lot of e-commerce sites often use animation, images, video and other multimedia effects in the website. Ranganathan and Ganapathy (2002) highlighted that while the use of multimedia enhances the visual appeal, maximum use of such can affect the speed of download. They suggested ensuring a balance between the two web dimensions to avoid any conflicts that may be caused by download delays.

Interestingly, Aladwani (2006) found that while there is significant relationship between the website's appearance quality and consumers' attitude towards the website, there is no significant relationship between the website appearance quality and consumers' intention to purchase from the website. In fact, their study concluded that other technical qualities such as security, speed of down-

load, ease of navigation etc. were responsible for influencing consumers' purchasing behaviour with consumer attitude as a mediator. However, it has been indicated that increased aesthetic aspects of an e-commerce website lead to higher consumer perceptions of quality and enhance online trust (Wang et al., 2015).

2.5 Hypotheses development

This chapter introduces the antecedents and outcomes of online trust based on the previous studies. Subsequently, the hypotheses are proposed and the research model is constructed.

Antecedents of online trust

According to Fung and Lee (1999), extensive availability of information online and the lack of two way and direct communication with the sellers makes online shopping more complex. Customers are willing to adopt online shopping, only when there is some level of trust with the company and the online shopping platform. Jarvenpaa et al. (2000) suggested that in order for trust to exist, sellers must be able to make the customers believe that they have the ability and motivation to deliver the ordered goods reliably and with high quality as expected. Fung and Lee (1999) further stated that trust building is a dynamic process where customers repeatedly interact with the sellers and over the period of time, depending on whether they are satisfied with their experience or not either leads to customer loyalty or they leave due to distrust.

Websites are what indicate the existence of online businesses. This is even more crucial for new online stores, since there is no history between the online shoppers and the online merchants. McKnight et al. (2002) highlighted that website quality is one of the greatest contributors in building online trust. In their research on the impact of initial consumer trust on behavioural intentions, they found that perceived website quality positively relates to trusting beliefs in a web vendor as well as willingness to depend on the vendor. Additionally, customers' perception of website quality directly drives their purchase intentions (Hsu et al., 2011). Therefore, a higher quality website leads to higher trusting beliefs in the online vendor's competence, integrity and benevolence resulting in willingness to purchase from the site (McKnight et al., 2002).

Since the main focus of this study is on the website quality dimensions, the following sub-chapter will explore the five website quality dimensions studied above as antecedents of online trust.

2.5.1 Website usability on online trust

Convenience and time savings are two major reasons why consumers choose to shop online (Ranganathan & Ganapathy, 2002). Flavián et al. (2006) presented several arguments to indicate the strong influence of website usability on online trust. According to them, greater usability facilitates easy-to-understand contents and tasks at hand for consumers allowing them to achieve their goals efficiently and effortlessly. As a result, it is less likely for consumers to make errors resulting in lower risk of something going unfavourably. If customers' expectation is met without any issue, a higher trust level is established. In contrast, if users are prone to making multiple errors during online transaction due to low usability, it can increase the feelings of distrust towards the online vendor. Flavián et al. (2006) further stated that greater usability is an indication of security and assurance to the users about their decisions. If the site visitors feel secure and assured that they are in the right place and are aware of what can be done in the site, naturally their trust towards the website also increases. Furthermore, consumers may perceive greater ease-of-use as the company's desire to become customer-centric pertaining to the trusting beliefs based on benevolence (McKnight et al., 2002; Flavián et al., 2006). This is supported by the study of Ranganathan and Ganapathy (2002) which agreed that website usability plays important role in "*attracting, retaining and sustaining*" the interest of consumers towards a website. This also indicates that there is influence of website usability on online trust. Based on this, the following hypothesis is proposed:

H1: Website usability has positive and significant impact on online consumer trust.

2.5.2 Security and privacy on online trust

Online shoppers have major concerns regarding the security of their transactions and privacy of their confidential information. Due to the nature of the web environment (McKnight et al., 2002) and the increase in online frauds and misuse of personal data (Chen & Dibb, 2010), users' perception of risks and uncertainty during online interactions have grown significantly. Because of lack of trust, consumers hesitate to provide personal information or make online purchases as the risks associated to such activity are high. McKnight et al. (2002) highlighted that providing safety and privacy assurances increases online trust by reducing consumers' perception of risks and uncertainty. Supporting this, Gefen et al. (2003) stated that safety nets such as guarantees, regulations and recourse possibilities built into the website positively affects online trust. For example, display of approval seals, explicit privacy policies, third-party certifications build trust online. Both the study of Ranganathan and Ganapathy (2002) and Gefen et al. (2003) concluded that security and privacy have dominant effect on online trust. Thus, the following hypothesis is proposed:

H2: Secured payments and privacy assurance provided by the website has positive and significant impact on online consumer trust.

2.5.3 Speed of download on online trust

Previous studies demonstrate that consumers are becoming more impatient and they expect websites to be quick in responding to any interactions they make (Akamai, 2014). This can be related with the trusting beliefs based on the *competence* of the seller (McKnight et al., 2002). Higher download speed can be associated to the seller's ability to provide what buyer needs and can act as a trust-inducing factor. Hence, speed of download contributes to the perception of trustworthiness of the online merchants. Chen and Dibb (2010) mentioned that slow download speed has negative effects in consumers' emotional responses leading to less interaction with the website and abandoning the site. This causes negative attitude towards the online vendor pertaining to the cause of distrust. Jarvenpaa et al. (2000) found that attitudes in online shopping context are highly stimulated by the level of trust. Based on this, the following hypothesis is proposed:

H3: Speed of download has positive and significant impact on online consumer trust.

2.5.4 Website's information quality on online trust

Trust is a major determinant of online purchase intentions (Jarvenpaa et al., 2000; McKnight et al., 2002; Gefen et al., 2003). Previous researchers found the influence of information quality on consumers' intention to purchase from the site (Park & Kim, 2003; Ranganathan & Ganapathy, 2002) implying that the quality of the information on the website play big role in inducing the trustworthiness of online sellers. According to Fung and Lee (1999), website information quality enhances the formation of online trust. Agreeing with this statement, McKnight et al. (2002) highlighted that the information quality is the basis for trusting beliefs when there is no prior relationship between the buyer and seller. They stated that when visitors visit a site for the first time, first impressions are made and depending on the availability of the information, initial trust is formed.

Websites being the primary interface in the e-commerce context (Gefen et al., 2003), consumers visit websites seeking further information regarding the products and services, ordering and delivering options, pricing, reviews, information about the company and so on. Consumers rely on this information before making any further decisions. Park et al. (2003) stated that satisfying consumers' information needs by providing consistent, relevant and up-to-date information helps in the formation of trusting beliefs and trusting intentions. Thus, the following hypothesis is proposed:

H4: Website's information quality has positive impact on online consumer trust.

2.5.5 Website aesthetics on online trust

Fung and Lee (1999) stated that a good web interface enhances the formation of online trust. Similar to the website information quality, the influence of website aesthetics on online trust is prevalent especially in the initial phase of trust development. When customers interact with the site that is attractive and visually and emotionally appealing, higher trusting belief – benevolence is formed as a result of the site's physical appearance. This further impacts the consumers' intention to make online transactions (McKnight et al., 2002). In contrast, the findings of Aladwani (2006) showed that the website aesthetics do not really affect the purchase intentions but influence consumers' attitude towards the website. Nevertheless, combining the findings of Aladwani (2006) and Jarvenpaa et al. (2000), which found online trust as a significant antecedent of consumers' attitude towards the online store, it can be indicated that there is positive influence of website aesthetics on online trust.

Website aesthetics is what creates the initial impression to the site visitors. The visual design of the website, colours, fonts, images, logos etc. are the elements that site visitors notice instantly even before they interact with the website. If the website looks messy with inconsistent use of colours and fonts, bad design and lack of organization, visitors don't want to waste their time browsing through such website. Consumers simply do not trust the website and the vendor. In contrary, it has been indicated that increased aesthetic aspects of an e-commerce website lead to higher consumer perceptions of quality and enhance online trust (Wang et al., 2015). Thus, the following hypothesis is proposed:

H5: Website aesthetics has positive and significant impact on online consumer trust.

Outcomes of online trust

As outcomes of positive online trust, behavioural intentions and electronic word-of-mouth are studied.

2.5.6 Online trust and behavioural intentions

According to the Theory of Reasoned Action (TRA), behavioural intention is an individual's intent to perform a certain action before the actual behaviour. In 1975, Fishbein and Ajzen developed this established and widely adopted social psychological model which explains the relationship between attitudes and behaviours within human action. The primary purpose of this model is to investigate the underlying factors that influence an individual's actual behaviour. This model states that behavioural intention predicts whether or not the person will perform the specified action. Furthermore, behavioural intention is determined by attitude (personal belief of an object leading to a favourable or unfavourable manner) and subjective norm (perception of social pressures) (Fishbein & Ajzen,

1975). Following the study by McKnight et al. (2002) and taking into account the challenge to simulate an actual user behaviour due to the hypothetical setting created for the survey respondents, behavioural intentions is examined in this study. Previous researches (McKnight et al. (2002) from Sheppard et al., 1988; Fishbein & Ajzen, 1975) have confirmed that behavioural intentions and actual behaviour are closely related to each other and various studies of technology acceptance have studied behavioural intentions instead of actual behaviours. As websites are essentially IT systems (Gefen et al., 2003), studying behavioural intentions can be justified in this specific context too. Therefore, behavioural intentions are examined as outcomes of positive trust. In this study, we investigate consumer intentions to:

- Purchase products from the vendor
- Revisit the website
- Gather information (through website/ social media)

Gefen (2000) highlighted that trust is a crucial factor in reducing the complexity of interacting with e-commerce sites. In his study on the role of familiarity and trust in e-commerce, he found that higher level of trust in an e-commerce vendor significantly increases consumer's intention to inquire about products (i.e. gather information) and purchase products on that vendor's website. He suggested that consumers' decision to interact with vendors is directly influenced by the trust.

Similarly, Chen and Dibb (2010) identified several studies that reviewed trust as a direct influence on consumers' attitude towards a website resulting in a consequent impact on their behavioural intentions. Moreover, Eroglu et al. (2003) found attitude of online shoppers to be a mediator for shopping outcomes and its direct influence on consumers' approach/avoidance behaviours such as revisiting the website, spending more time at the site, recommending the website and exploring the website. These literatures along with the TRA model (Fishbein & Ajzen, 1975) show that there is a direct influence of online trust on behavioural intention, with attitude as a mediator. As studying attitude is out of the scope of this thesis, the following hypothesis is proposed:

H6: Online trust has a positive impact on behavioural intentions.

2.5.7 Online trust and eWOM intentions

The advent of the internet has enabled customers to share their opinions and experiences regarding products and services among much bigger audience on the web, commonly referred to as electronic word-of-mouth (eWOM). eWOM has been highlighted as a key customer engagement behaviour (Doorn et al., 2010; Gummerus et al., 2012) that keeps online communities running. Similar to offline word-of-mouth communication, eWOM is an integral part of relationship marketing strategy due to its significant impact on customers' purchase decision (Hennig-Thurau et al., 2004).

Hennig-Thurau et al. (2004, p.39) defined eWOM as “*any positive or negative statement made by potential, actual, or former customers about a product or company, which is made available to a multitude of people and institutions via the Internet*”. eWOM communication can occur in several platforms such as forums, discussion groups, social media, websites etc.

This study operationalizes eWOM intentions as one of the consequences of online trust. According to Gummerus et al. (2012), customers are more likely to spread eWOM when they trust the online environment. Similarly, Zheng et al. (2013) pointed out that trust should be enhanced in online communities in order to motivate positive eWOM communications. In the context of e-commerce, we expect that when there is a higher level of trust, customers are willing to leave positive reviews, recommend the vendor, share their experience with other people and vice-versa. Thus, the following hypothesis is proposed:

H7: Online trust has a positive impact on eWOM intentions.

2.5.8 Research model

After reviewing the existing literature and studies on website quality, online trust and possible consequences of positive online trust, seven hypotheses are presented in this study. Based on these, a research model is developed. The model includes a range of website quality dimensions that impact online trust. Subsequently as a result of positive online trust, behavioural intentions and eWOM intentions are indicated as the possible consequences. Four control variables (age, gender, income and education) are also included in the model. Figure 2 illustrates the research model of this study.

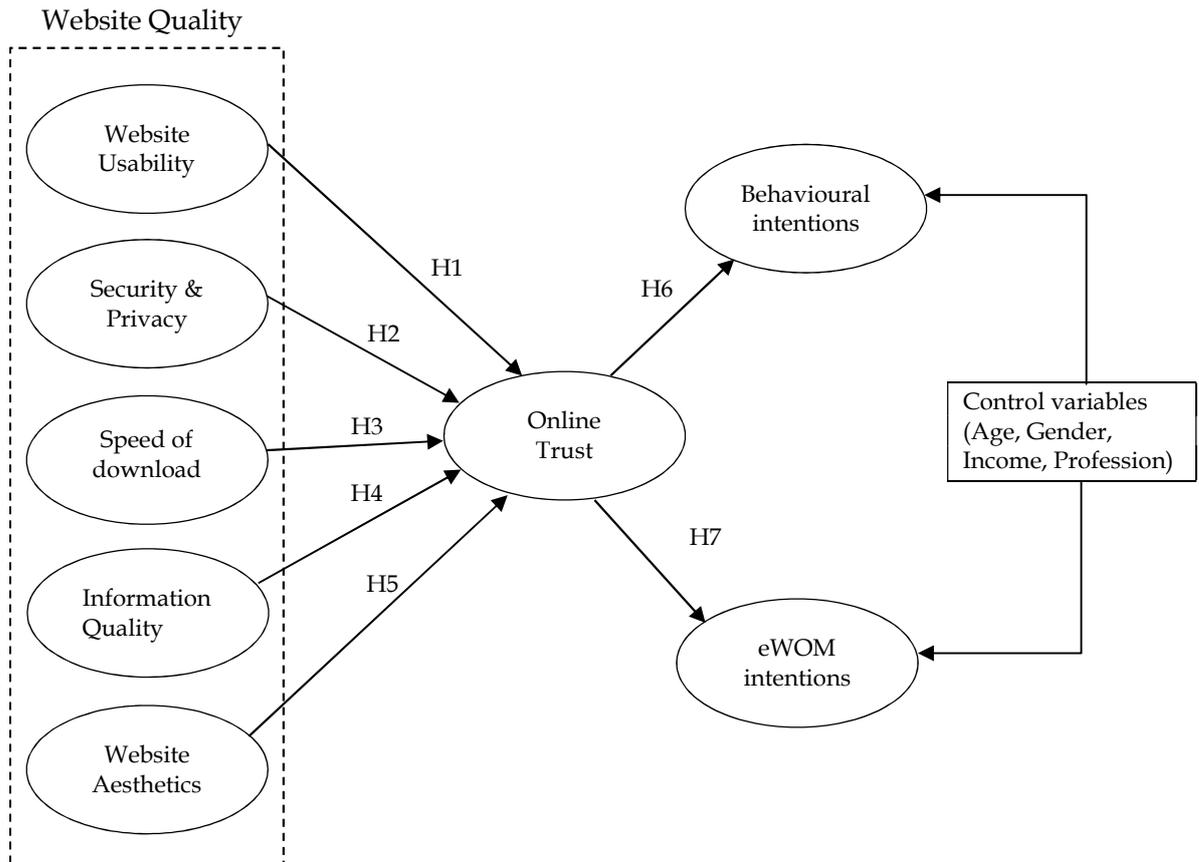


FIGURE 2 Research Model

3 METHODOLOGY

Methodology refers to the specific techniques used in the business research to collect, process and analyse the data (Hair, Wolfinbarger, Money, Samouel & Page (2015). Hair et al. (2015) referred to a business research as a scientific inquiry that explains certain phenomenon and provides information for making and improving strategic decisions. They stated that the objectives of the research determine the methodological choices adopted by the researcher. This study is explanatory by nature as it aims to investigate the causal relationships and correlations between website quality, trust, behavioural intentions and eWOM intentions (Leavy, 2017).

This chapter discusses the methodological standpoints used for conducting this research and provides the reasoning behind the chosen approach. First, quantitative research method is introduced. Next, the data collection method is explained and subsequently, survey instruments and measurement scales are discussed. Finally, data analysis approaches are presented.

3.1 Quantitative research

In order to accomplish the objectives of this research, quantitative research method is applied. According to Bell, Bryman & Harley (2018), quantitative research is a research strategy that aims to study the relationship between the theory and research by collecting numerical data. The purpose of quantitative research is to explain social phenomena and examine the causes behind them. Hair et al. (2015) highlighted that quantitative approaches provide objectivity to the research since numerical data are utilised for testing the hypotheses. This is in contrast to the qualitative approach where researchers' interpretation on the collected information may influence the final outcomes. Some of the key characteristics of quantitative research (Bell et al., 2018; Leavy, 2017) are:

- a) hypotheses are deduced from the theory first and then tested, i.e. deductive approach
- b) effect of one or more causes are explored amongst the population in an experimental setting, i.e. effects-of-causes approach
- c) concepts are indicated and are classified either as independent (that influences another variable and are the causes) or dependent variables (that is influenced by another variable and is the topic of researcher's interest)
- d) The relationship between the independent and dependent variables are measured and tested

- e) The results can be generalized to a broader population from which the sample is drawn

The primary focus of this research is in line with the characteristics of a quantitative research that are discussed above. Furthermore, Leavy (2017) also stated that quantitative method is commonly utilised in explanatory research. Additionally, prior studies on similar topics were conducted mostly in quantitative settings (Chen & Dibb, 2010; Jarvenpaa et al., 2000). Therefore, quantitative method was found to be the most appropriate approach and it was selected for this research.

3.2 Data collection and practical implementation

As a part of the quantitative research conducted for this study, data were collected with the help of an online survey. Surveys help to identify and explain characteristics, behaviours, attitudes or opinions of a sample or a part of the sample by gathering primary data with questionnaires, interviews or other observation techniques (Williamson & Johanson, 2017). According to Leavy (2017), online surveys allow respondents to answer the questions whenever they are comfortable and provide anonymity. In addition, online surveys are self-administered and facilitate the data collection from a geographically diverse population (Leavy, 2017). Williamson & Johanson (2017) stated that online surveys are widely accessible, efficient and inexpensive. However, Leavy (2017) argue that online surveys typically have lower response rate compared to in-person surveys.

For this study, an online questionnaire was used as a data collection technique and social media and emails were used as distribution channels. The data was collected within a span of two weeks in the month of June 2020. The data collection process was divided into three stages. Initially, the author distributed the survey link among her personal networks as well as posted the link on Facebook groups that were targeted towards people living in Finland. In the second stage, a data collection agency was used to reach more people who fitted the sample group. The agency distributed the survey link along with the introduction and purpose of the study via email to the list of subscribers in their email list. In the third and final stage, the agency sent a second round of invitation to more people so that higher responses could be collected. Higher responses were targeted to mitigate biased conclusions (Hair et al., 2015) and lead to more accurate results (Williamson & Johanson, 2017).

A total of 315 responses were collected which exceeded the suggested amount. Karjaluoto (2007) suggested a minimum of 100 responses for a valid statistical analysis in social sciences. The survey was opened 1721 times (including non-unique visitors) and altogether 334 people started responding the survey. This implies almost 93% of the total sample actually completed and submitted the survey. Due to the nature of this research design, direct contact and interactions with the respondents were limited. Furthermore, the survey followed a

cross-sectional design which implies that data were collected from the sample only once. The other form of survey research design is known as *longitudinal* design which seeks to measure change over time and collect data at multiple times (Leavy, 2017).

The survey included a short introduction at the beginning that outlined the purpose behind the study. Respondents were pre-informed that the survey was held anonymously and their data were protected according to the GDPR rules. Initially, they were asked to visit an online store named e-ville (<https://www.e-ville.com>) and browse through the website to familiarize themselves with the store. They were encouraged to familiarize themselves with the website in order to understand how the user interface worked and simulate as if they were about to purchase a product on the site. This allowed the participants to interact with the website thoroughly and gather experience for analysing and answering the research questions in a more appropriate manner.

This study was conducted independently by the author and not co-operated with the e-commerce store. Since brand reputation and familiarity have direct impacts on consumers trust on a site (Chen & Dibb, 2010; Gefen et al., 2003; Jarvenpaa et al., 2000), a low-profile website was preferred while choosing the case website in order to reduce possible influence on the data. e-ville was selected due to its lower reputation and based on the author's experience and perception of the website. It is an online store that mostly sells electronics as well as accessories, automobile and leisure products in Finland. It is a Finnish owned company which sells products from China and has been operating since 2006. In the author's opinion, the website is not user friendly and it lacks good web design principles (UX Planet, 2020) despite being in the market for quite long time. Thus, this website was found to be a good case study that supported the primary goal set to this thesis, i.e. examining the influence of website quality in online trust.

3.3 Survey instrument and measurement scales

The survey instrument refers to the questionnaire used in the research, and the questions included in the questionnaire are referred to as survey items. The survey instrument used in this research included several survey items which were adapted from prior studies on relevant constructs to produce a valid instrument (Leavy, 2017).

Seven items which measured website usability were adopted from Roy et al. (2001). Security and privacy were measured using four items that were partly adopted from McKnight et al. (2002) and partly from Park and Kim (2003). Speed of download included three items that were adopted from Novak et al. (2000). Website information quality was measured with four items adopted from Park and Kim (2003). Website aesthetics was measured using six items adopted from Aladwani and Palvia (2002) and Loiacono et al. (2007). Questions for measuring

online trust included nine items and were adopted from Roy et al. (2001). Similarly, behavioural intentions was measured with three items adopted from Jiang et al. (2013) and Hur et al. (2011) was used to adopt three items for measuring eWOM intentions. The survey items are presented in table 4.

TABLE 4 Measurement items

Item	Adapted from
<p>WEBSITE USABILITY WU1: Considering the home page of this site, I understand clearly what can be done. WU2: I can find easily what I am looking for on this site. WU3: I always know where I can go. WU4: Menus are distinct from other displayed information. WU5: The grouping of menu options is logical. WU6: I am always able to go back easily to the pages that I had previously visited. WU7: The structure of this site seems logical to me.</p>	<p>Roy et al. (2001)</p>
<p>SECURITY AND PRIVACY SP1: This site provides detailed information about security. SP2: I feel assured that my personal information will not be shared with third parties. SP3: This site provides a clearly written policy of handling privacy information. SP4: This site provides a secure transaction mechanism.</p>	<p>McKnight et al. (2002); Park and Kim (2003)</p>
<p>SPEED OF DOWNLOAD SOD1: Pages on this site I visit usually load quickly. SOD2: When I interact with this site, there is very little waiting time between my actions and the site's response. SOD3: Interacting with this site is slow and tedious. (R)</p>	<p>Novak et al. (2000)</p>
<p>WEBSITE INFORMATION QUALITY WIQ1: This site provides sufficient product & service information. WIQ2: This site provides easy-to-understand product information. WIQ3: This site provides easy-to-understand service information. WIQ4: This site provides detailed product information.</p>	<p>Park and Kim (2003)</p>

(continues)

TABLE 4 (continues)

<p>WEBSITE AESTHETICS WA1: The website looks attractive. WA2: The website looks organize. WA3: The website uses its logo, texts and fonts properly. WA4: The website uses colours properly. WA5: The website is visually appealing. WA6: The website uses images properly.</p>	<p>Aladwani and Palvia (2002); Loiacono et al. (2007)</p>
<p>ONLINE TRUST TRUST1: Based on my experience with the website, I have gained some trust with this vendor. TRUST2: E-ville has much knowledge about the work that needs to be done. TRUST3: E-ville tries hard to be fair in dealing with others. TRUST4: I feel very confident about e-ville's service. TRUST5: E-ville is well qualified. TRUST6: E-ville is very capable of performing its job. TRUST7: E-ville will go out of its way to help me. TRUST8: I never have to wonder whether e-ville will stick to its word. TRUST9: E-ville would not knowingly do anything to hurt me.</p>	<p>Roy et al. (2001)</p>
<p>e-WORD OF MOUTH INTENTIONS eWOMI1: I strongly recommend people buy products online from this vendor. eWOMI2: I will tell about this brand to others in my online network. eWOMI3: I will speak favorably of this vendor to others.</p>	<p>Hur et al. (2011)</p>
<p>BEHAVIOURAL INTENTIONS BI1: I will use this website for online purchases. BI2: I encourage others to shop online at this retailer. BI3: I will revisit this website.</p>	<p>Jiang et al. (2013)</p>

3.3.1 Online questionnaire

As a data collection technique for this research, an online questionnaire was used. The questionnaire was created in English language by using Webropol 3.0 which is a survey and reporting tool. The data were collected from the residents of Finland who are between the ages of 18 – 65. In order to motivate more respondents to participate in the survey, a raffle was added drawing for 2 gift certificates each worth 30 euros.

To measure the relationships between the selected variables adapted in the research model, the questionnaire included 54 questions or survey items. A 7-

point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree) was utilized in order to measure the survey items. These items helped in testing whether the proposed hypotheses are supported or refuted.

In addition to these, 4 demographic questions were asked regarding respondents' age, gender, income and education. These provided better insights into the sample and were used as control variables for the research. In order to understand the sample's online behaviour and perception towards online shopping, the questionnaire also included 7 single-answer multiple choice questions. These investigated respondents' shopping preferences, frequencies of online shopping and familiarity towards the web vendor.

While creating the survey instrument, special measures were taken in order to avoid any *respondent burden* and to ensure higher response rate and good quality responses. According to Leavy (2007), respondent burden occurs when respondents perceive their participation in the survey research to be difficult, stressful or time consuming. Respondents were asked to visit the e-commerce store by clicking the provided link and investigate the website before answering any questions. The format of the questions was constructed as clear as possible and it followed a logical structure. Additional hints were provided to ensure that the respondents understand the concepts that were being discussed in the questionnaire. Moreover, respondents were also pre-informed that answering the survey would take approximately 5-10 minutes. All these guidelines were aimed to ease the answering process for the respondents.

3.4 Data analysis

The data analysis process consisted of two parts. At first, the data collected from the questionnaire was exported as a .sav file from Webropol 3.0 platform to IBM SPSS Statistics software, which is used for statistical analysis. This step focused on cleaning the raw data and removing any irrelevant data. Out of 315 responses, 5 responses contained missing values and were removed from further analysis. Thus, in total 310 responses were used in this research. Similarly, some question that were irrelevant to the research were removed. In this phase, basic statistical analysis concerning the demographics and the background of the respondents were carried out.

Next, factor analysis was performed. According to Hair et al. (2015), factor analysis is a statistical technique in which large number of variables are reduced into fewer variables which are known as factors. Basically, the idea is to investigate the latent or hidden variables and model the interrelationships between the items with fewer variables (Karjaluoto, 2007). Thus, with the help of factor analysis, we can summarize our data and analyse as well as interpret the relationships between the variables and patterns easily. Factor analysis can be distinguished into two different techniques: Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA).

Karjaluoto (2007) outlined that EFA is a data-driven research method which seeks to find a set of factors that explain the variability of the observed variables. Researchers opt for this technique if they don't have any priori theory to test but instead they seek to generate a model. On the other hand, confirmatory factor analysis is theory-driven and is performed when the researcher wants to test a proposed theory. Williams, Onsman and Brown (2010) pointed out that CFA is a form of structural equation modelling (SEM).

Since, the research model used in this study was developed from previous theoretical findings, CFA technique was chosen to test the proposed hypotheses based on the empirical evidence.

4 RESULTS

This chapter discusses the results that were obtained from the data collected via the chosen research methods. Initially, demographic and other background information relevant to the study is presented. Then factor analysis, the measurement model and the structural model are discussed.

4.1 Demographic and background information

Out of the 310 respondents, majority of them (63.6%) were female and 32.3% were male. 1.6% of the sample identified themselves as “other” gender and the rest 2.3% chose not to answer this question. The largest age group in the sample was between the ages of 26 to 35 years old (38.7%), followed by 22.3% of the sample who belonged to 36 to 45 years old age group. Only 1 respondent (0.3%) belonged to the age group of more than 66 years old. The relevant background information of respondents is shown in table 5 below:

TABLE 5 Demographic information of respondents

	N	%
Gender		
Male	100	32.3
Female	198	63.6
Other	5	1.6
Don't want to answer	7	2.3
Total	310	100
Age		
15-25	58	18.7
26-35	120	38.7
36-45	69	22.3
46-55	41	13.2
56-65	21	6.8
>66	1	.3
Total	310	100
Profession		
Student	73	23.5
Employee	163	52.6
Unemployed	24	7.7
Entrepreneur	15	4.8
On break	22	7.1
Retired	13	4.2
Total	310	100

In terms of profession, majority of the respondents were employees (52.6%) while 23.5% were students. The remaining were either on a career break, entrepreneur, retired or unemployed. Majority (27.8%) earned between a salary ranges of 1600 to 2300 euros per month while 6.8% earned a salary of over 4000 euros per month.

Regarding the sample's online shopping behaviour, most of the respondents (43.9%) did online shopping 2-4 times per month in general. 58.7% preferred online shopping to traditional shopping. Additionally, more than half of the sample (56.1%) were not familiar with the online vendor (e-ville) before responding to the survey.

4.2 Factor analysis

Prior to performing factor analysis, the suitability of data for factor analysis was examined through several tests. Initially, Kaiser-Meyer-Olkin (KMO) test was conducted to determine whether the sampling was adequate to proceed with the factor analysis (Williams et al., 2010). The KMO test value was 0.949 which is more than the cut-off value of 0.60 (Karjaluoto, 2007). This was followed by Bartlett's test in order to test the null hypothesis (Karjaluoto, 2007). Null hypothesis implies that there is no correlation between the measured variables. If the significance value provided by Bartlett's test is $< 0.1 - 0.5$, the null hypothesis is rejected which shows there is sufficient correlation between the variables. This can be interpreted as good condition for factor analysis. Bartlett's test was statistically significant ($p < 0.00$). Hence, both tests fulfill the preconditions for performing factor analysis (Karjaluoto, 2007). Table 6 shows the results of KMO & Bartlett's test.

TABLE 6 KMO & Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.949
Bartlett's Test of Sphericity	
Approx. Chi-Square	12586.008
df	1378
Sig.	.000

Next, communalities for each item were examined to test the suitability of the variables. Communality represents the extent to which an item correlates with all the other items. Karjaluoto (2007) stated that it is recommended to remove any item from dataset with a communality value less than 0.3. SP4 (This site provides a secure transaction mechanism) received a communality value of 0.224. All other survey items except SP4 were found to have a communality value above the cut-off value 0.3. The values ranged from 0.436 to 0.840. Website Aesthetics, item 5 received the highest communality value (0.840) while Speed of Download, item 3 received the lowest communality value (0.436). The item SP4 was thus removed

from the dataset and only suitable variables were included for the further analysis. Table 7 shows the communality value for each of the survey items.

TABLE 7 Communalities (Principal Axis Factoring)

	Initial	Extraction
WU1	0,689	0,628
WU2	0,757	0,776
WU3	0,684	0,660
WU4	0,641	0,566
WU5	0,652	0,611
WU6	0,572	0,502
WU7	0,587	0,504
SP1	0,689	0,605
SP2	0,680	0,600
SP3	0,731	0,623
SP4	0,332	0,224
SOD1	0,694	0,515
SOD2	0,699	0,514
SOD3	0,445	0,436
WIQ1	0,535	0,480
WIQ2	0,648	0,570
WIQ3	0,723	0,664
WIQ4	0,514	0,456
WA1	0,820	0,835
WA2	0,704	0,671
WA3	0,709	0,715
WA4	0,754	0,713
WA5	0,843	0,840
WA6	0,645	0,600
TRUST1	0,775	0,715
TRUST2	0,730	0,693
TRUST3	0,688	0,664
TRUST4	0,814	0,768
TRUST5	0,836	0,761
TRUST6	0,753	0,698
TRUST7	0,632	0,594
TRUST8	0,707	0,649
TRUST9	0,658	0,597
eWOMI1	0,765	0,755
eWOMI2	0,631	0,571
eWOMI3	0,536	0,569
BI1	0,677	0,668
BI2	0,566	0,579
BI3	0,586	0,556

After the above tests were completed to confirm preconditions for factor analysis, next step was to conduct the confirmatory factor analysis. Partial least squares

structural equation modelling with SmartPLS 3.3.2 (Ringle, Wende & Becker, 2015) was used for the CFA.

4.3 Partial least squares structural equation modeling (PLS-SEM)

PLS-SEM is a method of structural equation modelling that allows the estimation and study of complex causal relationships between multiple variables. According to Sarstedt, Ringle and Hair (2017), the use of PLS-SEM in social science research has grown significantly in the last decade due to its ability to handle complex models, flexibility in sample size and data distribution as well as its focus on prediction in model estimation. This technique is based on *variance analysis* and consists of the following two components (Hair et al., 2015):

- a) **A measurement model** (also known as the outer model) represents the relationship between each construct and its associated indicators. This model enables assessment of the quality of all constructs by measuring their reliability and validity.
- b) **A structural model** (also known as the inner model) represents the structural paths between the constructs. This model enables hypotheses testing by estimating the relationships between different constructs.

As discussed in Sarstedt et al. (2017), the evaluation of PLS-SEM results for this research is divided into two stages. The analysis started off with the measurement model assessment followed by structural model assessment. These will be discussed more in details in the following chapters.

4.3.1 Measurement model assessment

Initially, a path model was built in the SmartPLS software. This diagram displayed the hypotheses and the relationships between the variables that were to be estimated in the SEM analysis. The factors were named according to the theoretical concepts represented by the survey item together with a number which represented the index of the item. Hence, the factors accumulated were: Website Usability: WU(1-7), Security and Privacy: SP(1-3), Speed of Download: SOD(1-3), Website Information Quality: WIQ (1-4), Website Aesthetics: WA(1-6), Online Trust: TRUST(1-9), eWOM intentions: eWOMI(1-3) and Behavioural intentions: BI(1-3).

According to Sarstedt et al. (2017), the measurement models can be either reflective or formative in nature. The idea is that in case of reflective measurement models, there is direct relationship from the construct to the indicators. On the other hand, in case of formative reflective models, the relationships are

formed from the indicators to the construct. Since the measurement model included in this study is *reflective*, evaluation criteria such as indicator reliability, internal consistency reliability, convergent validity and discriminant validity were used to assess the model.

Indicator reliability

The first step was to examine the indicator reliability or factor loadings. Sarstedt et al. (2017) stated that the factor loadings above 0.70 mean the construct extracts more than 50% variance from the indicator demonstrating that the indicator is reliable up to a satisfactory extent. The factor loadings of all indicators except SOD3 and eWOMI3 were above the suggested threshold of 0.70. While SOD3 (0.125) and eWOMI3 (0.653) scored lower value, several other indicators obtained quite good values, mostly above 0.85, as shown in Table 7. Thus, the indicator reliability can be stated as valid.

Internal consistency reliability

In the next step, internal consistency reliability was carried out by using Cronbach's alpha and Composite Reliability (CR). While both of these measures are used to evaluate the constructs' internal consistency reliability and they are generally acceptable at a minimum value of 0.7 (Hair et al., 2015). Sarstedt et al. (2017) suggest using both measures to assess internal consistency reliability. Hair et al. (2015) also mention CR to be more accurate because it is calculated based on the reliability of each item as opposed to the Cronbach alpha which assumes that all items in a construct are weighted equally. Thus, the Cronbach's alpha provides a lower bound and CR provides the upper bound of internal consistency reliability (Sarstedt et al., 2017).

In this study, all values were above the suggested threshold of 0.7 except the Cronbach's alpha value of SOD (0.66). This value was improved to 0.88 by deleting an item (SOD3) from the construct. Similarly, t-values were examined to determine the significance of the relationships between the constructs and indicators. It was proved to be significant because all the t-values were much higher than the suggested 1.96 threshold value at the five percent level ($p = 0.05$). eWOMI3 received the lowest t-value (10.621) while WA5 received the highest t-value (102.860).

Convergent validity

The next step included measurement of convergent validity. Convergent validity explains the degree to which two measures that belong to a same construct positively correlate to each other. This is measured by using a metric called average variance extracted (AVE), which is calculated as the mean of the squared loadings across all items that belong to a particular construct (Sarstedt et al., 2017). The acceptable threshold for AVE is 0.50 (Hair et al., 2015) which indicates that

the construct represents a minimum of 50% of items' variances. All AVE values were higher than 0.5. Website Usability received the lowest AVE value (0.622) and the highest AVE value was scored by Speed of Download (0.893). The values of Cronbach's alpha, CR, factor loadings and t-values are shown in table 8 below.

TABLE 8 Cronbach's alpha, CR, Factor loadings, t-values

Construct	Cronbach's Alpha	Composite Reliability (CR)	Item	Standardized Loadings	T-values
Website Usability	0.898	0.920	WU1	0.790	21.521
			WU2	0.857	49.852
			WU3	0.831	40.717
			WU4	0.808	34.662
			WU5	0.773	26.344
			WU6	0.748	19.662
			WU7	0.706	21.100
Security and Privacy	0.859	0.914	SP1	0.876	54.250
			SP2	0.859	42.289
			SP3	0.915	89.552
Speed of Download	0.880	0.944	SOD1	0.943	89.107
			SOD2	0.947	76.711
Website Information Quality	0.822	0.882	WIQ1	0.803	26.932
			WIQ2	0.836	37.157
			WIQ3	0.864	50.343
			WIQ4	0.723	17.196
Website Aesthetics	0.928	0.944	WA1	0.893	66.975
			WA2	0.805	35.833
			WA3	0.848	42.000
			WA4	0.873	57.030
			WA5	0.915	102.964
			WA6	0.811	36.878
Online Trust	0.946	0.955	TRUST1	0.849	43.765
			TRUST2	0.829	40.947
			TRUST3	0.803	35.812
			TRUST4	0.886	55.617
			TRUST5	0.895	65.913
			TRUST6	0.868	51.801
			TRUST7	0.784	29.766
			TRUST8	0.827	40.258
			TRUST9	0.786	34.148
eWOM intentions	0.727	0.849	eWOMI1	0.922	95.598
			eWOMI2	0.833	30.587
			eWOMI3	0.653	10.622
Behavioural intentions	0.753	0.854	BI1	0.823	50.051
			BI2	0.809	24.546
			BI3	0.808	26.844

Discriminant validity

After successfully confirming the internal consistency reliability and the convergent validity of the given constructs, the discriminant validity was assessed. This stage helps to determine to what level a construct differs from other constructs by measuring its correlation with other constructs and the representation of indicators in that particular construct (Sarstedt et al., 2017). This analysis was done based on the Fornell-Larcker criterion. In this method, the square roots of AVE is compared with the correlation of latent constructs. Fornell and Larcker (1981) suggest that the value of the square roots of AVE must be greater than the value of the correlation of latent constructs. All the values of the square roots of AVE were found to be higher than the correlation values indicating the discriminant validity as shown in Table 9.

TABLE 9 AVE & Fornell-Larcker

	AVE	WU	SP	SOD	WIQ	WA	TRUST	EWOMI	BI
WU	0.622	0.789							
SP	0.781	0.635	0.883						
SOD	0.893	0.607	0.433	0.945					
WIQ	0.653	0.785	0.578	0.640	0.808				
WA	0.737	0.508	0.657	0.266	0.399	0.858			
TRUST	0.701	0.688	0.790	0.491	0.694	0.765	0.837		
EWOMI	0.656	0.373	0.617	0.155	0.325	0.731	0.724	0.810	
BI	0.662	0.435	0.563	0.316	0.440	0.620	0.733	0.696	0.813

4.3.2 Structural model assessment

Since the measurement model assessment was validated and it indicated satisfactory quality, the evaluation of the PLS-SEM was continued to stage 2. In this stage, the assessment of the structural model is performed in order to estimate the relationships between the constructs (Hair et al., 2015) and ultimately test the hypotheses set for the study (Sarstedt et al., 2017). The structural model is primarily assessed based on the significance of path coefficients (β) and the coefficients of determination (R^2) (Sarstedt et al., 2017; Hair, Ringle and Sarstedt, 2011).

Because PLS-SEM relies on nonparametric approach which assumes that the data are not normally distributed, bootstrapping method is applied. This involves running random samples by replacing the original samples repeatedly to generate higher number of samples and consequently stabilize standard errors for hypothesis testing (Hair et al., 2011). This study included bootstrapping calculated with 5000 subsamples with significance level of 0.05 (5%).

The path coefficients (β) indicate the proposed relationship among the constructs and includes standardized values between -1 and +1. Path coefficient values close to +1 mean that the relationship between the constructs is strongly positive while closer to 0 value represent weaker relationship between the constructs (Hair, Hult, Ringle and Sarstedt, 2017). In addition, p-values and t-values are used to assess the significance levels. According to Hair et al. (2017), the p-value must be lower than 0.05 and the t-value must be greater than 1.96 to conclude that the relationship between constructs is significant at a 5% level and consequently support the hypothesis.

Next, the coefficient of determination (R^2) is determined which measures the variance explained in the dependent variable by the independent variable (Hair et al., 2015). This value ranges from 0 to 1 where higher value of R^2 implies more predictive accuracy (Sarstedt et al., 2017). Hair et al. (2011) mentioned that R^2 values of 0.75, 0.50 or 0.25 can be considered as substantial, moderate or weak respectively. The R^2 values for outcome constructs in the study were found to be quite strong. Online trust received 0.811 (81.1%) variance, Behavioural intentions received 0.537 (53.7%) variance and eWOM intentions received 0.525 (52.5%) variance. These values fulfilled the suggested criteria and indicated moderate to substantial accuracy in the model.

Finally, Hair et al. (2015) also recommended evaluating the effect size (f^2) which indicates the power of each independent variable. This evaluation helps to identify which independent variable has the highest variance in a dependent variable. The values 0.02, 0.15 and 0.35 represents small, medium and large effects respectively (Hair et al., 2015). Table 10 demonstrates the values for path coefficients, t-statistics and whether the hypotheses is accepted or not.

TABLE 10 Results of hypothesis testing

Hypothesis	β	T-statistics	P Values	f^2	Supported
Website usability --> Online trust	-0.010	0.209	0.834	0.000	No
Security & privacy --> Online trust	0.311	6.591	<.001	0.219	Yes
Speed of download --> Online trust	0.040	1.010	0.312	0.005	No
Website info. quality --> Online trust	0.328	6.810	<.001	0.182	Yes
Website aesthetics --> Online trust	0.425	11.125	<.001	0.518	Yes
Online trust --> eWOM intentions	0.724	29.384	<.001	1.105	Yes
Online trust --> Behavioural intentions	0.733	27.938	<.001	1.160	Yes
R2					
Online trust		0.811			
eWOM intentions		0.525			
Behavioural intentions		0.537			

Out of the seven hypotheses, path coefficient values for two hypotheses were closer to 0. Website usability \rightarrow Online trust received a value of -0.010 and Speed of download \rightarrow Online trust received a value of 0.040. The t-values and the p-values for these constructs also didn't fulfil the suggested criteria as discussed above. This indicates that the proposed relationships between website usability and online trust as well as speed of download and online trust are not statistically significant. Thus, hypothesis H1 ($\beta = -0.010$, $p = 0.0834$, t-value = 0.209) and H3 ($\beta = 0.040$, $p = 0.312$, t-value = 1.010) are not supported in this study.

However, the remaining path coefficients were found to be higher indicating the relationships between the constructs to be statistically significant. Of these, the highest coefficient was obtained for Online trust \rightarrow Behavioural intentions ($\beta = 0.733$, $p < 0.05$, t-value = 27.938) followed by Online trust \rightarrow eWOM intentions ($\beta = 0.724$, $p < 0.05$, t-value = 29.384). Similarly, there was a significant relationship between security and privacy and online trust ($\beta = 0.311$, $p < 0.05$, t-value = 6.591), website information quality and online trust ($\beta = 0.328$, $p < 0.05$, t-value = 6.810) and website aesthetics and online trust ($\beta = 0.425$, $p < 0.05$, t-value = 11.125). The relationship between website aesthetics and online trust was found to be the strongest among other website quality dimensions. Thus, we can conclude that hypotheses H2, H4, H5, H6 and H7 are supported, as shown in table 10.

It was found that the impact of all four control variables: age, gender, income and profession on eWOM intentions and behavioural intentions were not significant. The obtained coefficient values were (Age \rightarrow eWOM intentions, $\beta = -0.009$), (Age \rightarrow Behavioural intentions, $\beta = -0.073$), (Gender \rightarrow eWOM intentions, $\beta = -0.061$), (Gender \rightarrow Behavioural intentions, $\beta = -0.065$), (Income \rightarrow eWOM intentions, $\beta = 0.085$), (Income \rightarrow Behavioural intentions, $\beta = 0.041$), and (Profession \rightarrow eWOM intentions, $\beta = 0.052$), (Profession \rightarrow Behavioural intentions, $\beta = 0.080$). Figure 3 shows the structural model with path estimates and its significance.

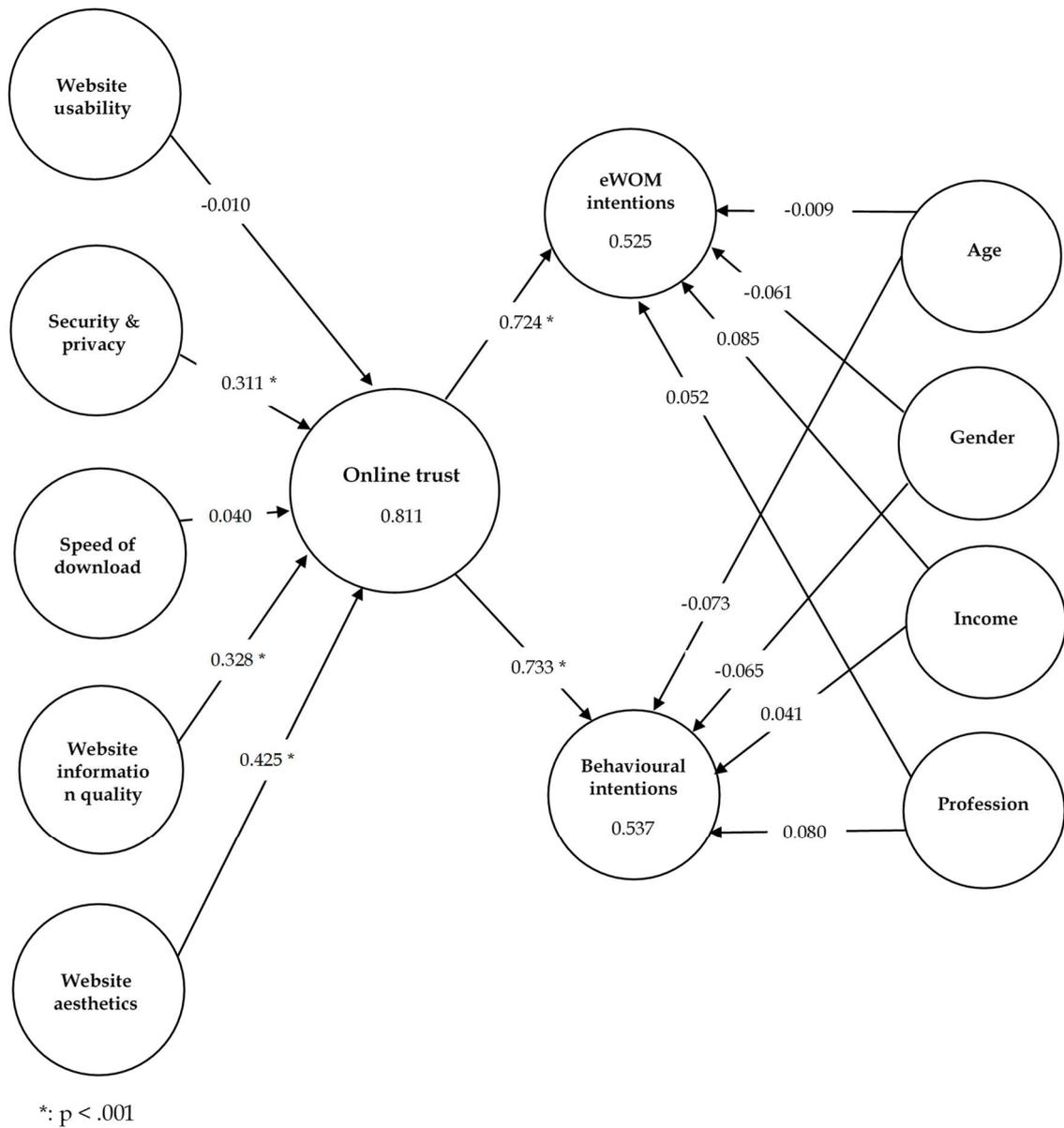


FIGURE 3 Structural equation model

5 DISCUSSION

The primary objective of this study was to examine the role of website quality on online trust in an e-commerce context and investigate if online trust affects behavioural and eWOM intentions. In order to analyse what makes a website of high quality, five website quality dimensions: Website Usability, Security & Privacy, Speed of Download, Website information quality and Website aesthetics were studied. Based on previous literature, a research model was first introduced and an empirical research was conducted to investigate the relationships between proposed constructs.

This chapter aims to provide answers to the research questions by discussing the findings of the empirical research and previous studies used in this thesis. In addition, managerial implications are discussed as well as limitations of this study and future research ideas are presented.

5.1 Theoretical implications

Existing research verifies that one of the most important factors that impede online purchases is the growing lack of trust among online shoppers threatening to slow growth. Technological advances have contributed to a convenient way of shopping through web interface and is constantly bringing in new improvements to ensure richer user experience in terms of intuitive web design, security, payments, and quicker delivery and so on. Nonetheless, establishing trust amongst online shoppers still remains a big challenge to the majority of the online merchants in the e-commerce world.

While numerous factors contribute to online trust perceived by the site visitors, website quality is one of the factors that influence online trust. Focusing on this aspect, the research questions used in this study are presented below:

- RQ1: How does website quality impact online trust in e-commerce context?
- RQ2: Which of the proposed website dimensions have significant influences on online trust?
- RQ3: Does online trust impact consumer behavioural intentions?
- RQ4: Does online trust impact eWOM intentions?

The results of this study confirms that good website quality has positive significant impact on online trust. Majority of the participants found e-ville website to be visually unappealing and needing a significant improvement. This created mistrust and rejection towards the vendor. The perceived bad website quality influenced customers' first impression towards the website raising questions

about its trustworthiness. Hence, this study supports other previous studies regarding the significant role of website quality in forming online trust (McKnight et al., 2002) and making use of good website design dimensions in inducing initial trust towards unfamiliar vendors (Karimov et al., 2011).

Secondly, this study provides answers to RQ2. Out of the studied five website quality dimensions, the findings of this study highlight significant influences of *website aesthetics*, *website information quality* and *security and privacy assurance* on online trust. It was found that *website aesthetics* have the strongest influence on online trust, followed by *website information quality* and *security and privacy*. These results contribute to the existing literatures about website aesthetics, website information quality and security and privacy assurance enhancing the formation of online trust (Fung & Lee, 1999; Chen & Dibb, 2010). This study also supports the study of Fogg et al. (2003), according to which, the visual appearance or the website aesthetics and information quality were found to be the most prominent aspects when evaluating the credibility of different websites.

On the other hand, this study is in contrast with prior literature that argue *website usability* and *speed of download* to have strong impact on the establishment of trust (Roy et al., 2001; Chen & Dibb, 2010). In this study, it was found that *speed of download* and *website usability* have very low influence on online trust. Thus, this study doesn't support the two hypotheses about impact of *website usability* and *speed of download* on online trust.

The above findings could be justified with the fact that 56% of the respondents were not familiar with the website before and 80% had never purchased anything from the site previously. In the context of unfamiliar vendors or during the first initial interaction, *initial trust* determines whether transaction will happen or not (Karimov et al., 2011). Moreover, this *initial trust* is a result of *first impression* which are formed based on the customers' perception of the e-commerce store (McKnight et al., 2002). Various studies have confirmed that the first impressions are mostly design related (Sillence et al., 2004; Fogg et al., 2003). Their study revealed that visual design including layout, typography, font size and color schemes play great role in influencing customers' first impressions of the site. In their study, majority of the participants paid more attention to the visual cues of the websites compared to its contents while evaluating credibility of different websites. Similar to this research, it can be concluded that the aesthetics of e-village website formed a first impression to majority of the new site visitors and had bigger impact on their perception of the website quality resulting to more attention towards the visual appearance of the site.

In addition, one of the reasons that this study found no significant impact of speed of download could be that the study was conducted in Finland where high speed internet is readily accessible. Most likely, the respondents didn't face any issue in terms of page loading, making this dimension less prevalent during the survey.

Lastly, the results of this study support RQ3 and RQ4 because it was found that online trust has significant impact on behavioural intentions and eWOM intentions. Gummerus et al. (2004) stated that the presence of trust has significant impact on purchase intentions. In fact, it is stated that the effect of distrust is actually higher on purchase intentions compared to the effect of trust. Similarly, Hur et al. (2011) stated that online trust has positive influence on electronic word-of-mouth intentions. These positive influences further encourage customers to perform activities such as purchasing a product or service, re-visiting the website or recommending the vendor to friends and family. Thus, the finding aligns with the previous studies.

5.2 Managerial implications

The managerial focus in this research was on identifying the key website dimensions that play a bigger role in influencing online trust and based on the research findings and analysis, provide relevant insights for marketing decisions. The findings suggest that user behavioural intentions such as intent to purchase, revisit a website and spread eWOM are significantly influenced by the quality of an e-commerce website (and even more certain dimensions in the website which we will discuss later) where online trust acts as a mediator.

The importance of a high quality website in inducing online trust signifies website as a managerial tool. Online merchants can increase sales and improve their conversion rates by formulating strategies on establishing online trust. For this, developing high quality websites by focusing on important aspects of the website and following website quality guidelines is crucial. As online business owners and marketers, it is important to understand the key dimensions in a website that influence users' trust on the web vendor and its ultimate effects on user intentions. Specially, if the business is a new comer in the market, what are the website quality dimensions one must focus on in order to attract new buyers and retain them?

The results found website aesthetics to be the most prominent web quality dimension. This implicates great visual design is extremely important to form a positive first impression of the web vendor and capture customers' interests. A research conducted by Google confirmed that customers form an initial judgment of the website within 0.05 seconds of exposure based on visual complexity and prototypicality (Tuch et al., 2012). Prototypicality refers to the degree to which something is typical to the category it belongs to. Based on the past experiences, customers already have certain expectations of how an e-commerce website should look like and behave. Tuch et al. (2012) stated that websites with low prototypicality and high visual complexity are perceived to be unattractive. Their study highlights customers' preference for websites with low visual complexity and high prototypicality. Contradiction in the designs to what customers expect of a website can significantly influence customers' first impression determining

whether to stay on that particular website or continue surfing to competitor's websites. In addition to considering the visual complexity of a website, web designers should also focus on prototypicality to make websites highly appealing, credible and trustworthy (Tuch et al., 2012). Karimov et al. (2011) recommends improving the appearance of web-stores by using appropriate background colours, sophisticated fonts and enhanced features that allow customers to view products from different angles.

Creating customer-centered websites enable site visitors to find information and perform specific tasks as highlighted by Duyne et al. (2007). Customer-centric design focuses on providing positive experience to the visitors based on their interests whether they are on the site to find information, be a part of the community, share ideas, purchase items or just to be entertained. In the context of e-commerce, the main purpose of visitors visiting a site is that they are either interested in purchasing a product or finding out more information about that product. A clear and easy-to-use web interface helps customers' achieve their goal easily resulting in less customer effort, efficient service, better reviews and overall increase in customer satisfaction (Duyne et al., 2007).

In accordance to the significant impact of website information quality on online consumer trust, it is recommended to provide complete, accurate, updated and well-formatted information about products or services web-stores are offering to their customers. User generated contents such as product reviews are greatly appreciated by customers and they believe in such contents more than the contents produced by the online merchants. Including sufficient testimonials in e-commerce websites help customers in making purchase decisions and make the sites appear more trustworthy.

Finally, e-commerce websites should maintain sufficient levels of safety and security in communications and online transactions. Websites can assure security and privacy to its visitors by providing a privacy statement, using secured protocols (e.g. SSL) for online transactions and displaying logos of trusted third-party vendors (Chen & Dibb, 2010). Data protection requirements concerning privacy must be thoroughly considered. The General Data Protection Regulation (GDPR) that came into effect on May 25th, 2018 requires businesses to protect the personal data and privacy of EU citizens. Complying with GDPR requirements influences how online merchants engage with their customers and handle their data. Some checklists for making e-commerce sites GDPR compliant are given below (General Data Protection Regulation, 2021):

- Include a clear and easily accessible privacy policy statement on the website
- Get customers' consent before storing any of their data
- Be transparent about what kind of customers' data (e.g. name, email, phone number etc.) are saved
- Be open about how the data are used

- Allow customers to easily opt-out for newsletters or other marketing activities

Furthermore, frequent analysis and evaluation of the characteristics of e-commerce websites help maintain and improve website quality (Díaz et al., 2017). Several online tools such as Google lighthouse and Website grader are available to assess the quality of websites. Tools like Google Analytics can be used to track website traffic including site visitors' demographics, location etc. and measure website activity such as session duration, conversion, bounce rate, pages per session etc. These information can be useful while improving website quality. For e.g. higher bounce rate indicates something is faulty in the website, it could be the website performance or content quality etc. Similarly, if international traffic coming to the site is increasing, perhaps translating the site could boost up the conversion. The goal is to utilize data available on user behaviour and optimize e-commerce websites accordingly to increase conversions. Duyne et al. (2007) suggested conducting interviews or surveys with the users to gather insights and identify their needs, pain points and motivation while using the web store. This provides improvement ideas to the online merchants which can then be further analysed to identify if the quality of the website is feasible for the business or not.

Similarly, A/B testing can also be performed to identify the weaknesses of the web store and mitigate them in order to attract more site visitors and improve user experience. According to Cubero et al. (2016), A/B testing means conducting controlled online experiments to evaluate different visual aspects of a website such as layouts, fonts, colors etc. The idea is to create two variants of a single website (the second variation can be a completely different website or improvement on the existing website) and then randomly assigning one of the variants to each site visitor. The goal is to measure different aspects such as web performance, user behaviours for different variations and ultimately use the winning variation to improve conversion on the website. In addition to testing the usability aspects, Cubero et al. (2016) also found that A/B testing can be used for optimizing e-commerce sales processes. In addition to experimenting with the various elements of an e-commerce website such as call-to-action buttons, images, contents, positioning of texts, colors, and site layout etc., A/B tests can be also incorporated with other digital marketing strategies such as email marketing, landing page optimization, content marketing etc.

5.3 Evaluation of the research

This research can be evaluated through reliability and validity tests which were performed to ensure that the variables included in this study represent and measure the concepts accurately and consistently. Hair et al. (2015) refers reliability as the consistency of a measure. A measurement scale is considered to be reliable if there is high correlation between the items that make up the scale and

the respondents answer to the questions in a consistent manner each time the test is completed. Similarly, validity is concerned with the accuracy of a measure. It refers to the degree to which a construct measures what it is supposed to measure and furthermore measures it accurately (Hair et al., 2015).

The hypotheses in this study are developed based on the extant literatures and a research model that has been previously studied and validated. Moreover, all the measurement items were adopted from previous studies as they were without any modification. This approach helped in ensuring the validity of the study.

To assess the reliability of the study, Cronbach's alpha and composite reliability were measured. As discussed in chapter 4, having both of these value above 0.7 verifies the internal consistency reliability of the measured constructs (Hair et al., 2015). This assessment was fulfilled by all constructs except the Cronbach's alpha value for one item that belonged to Speed of Download (SOD3). As suggested by Karjaluoto (2007), that item was removed from the dataset for further analysis and ultimately both Cronbach's alpha and composite reliability were above the threshold value of 0.7, thus ensuring the reliability of the measured constructs.

Furthermore, to assess the validity of the study, convergent validity and discriminant validity were performed. Initially, convergent validity was examined to determine the correlation between the measures that belong to a same construct. This was measured by using average variance extracted (AVE). All the constructs achieved AVE values higher than the minimum 0.50 (Hair et al., 2015) which implied that the measures of a construct positively correlate to each other. Next, discriminant validity was examined to test that measures of a construct do not correlate with other measures. This assessment was performed using Fornell-Larcker criterion which fulfilled the condition that the square roots of AVE must be greater than the value of the correlation of latent constructs (Hair et al., 2015). See Table 9.

In summary, the results of reliability and validity assessments imply that the constructs and the measurement scales used in this study are consistent and accurate.

5.4 Limitations of the research

The main motivation for this study was to understand the impact of website quality on online trust and identify the key dimensions of an e-commerce website that influence online trust. Websites play a vital role in generating revenue for e-commerce stores as they used to be the first touch-point for customers when e-commerce started in the early 90s. Despite the importance of a high quality website in inducing trust among customers, there are several other factors that may influence online consumer trust. These days, online shopping through mobile devices are becoming popular. Specially, customers in developed countries where

high speed internet is readily available are becoming more dependent on their mobile devices. Many mobile applications are being introduced to the market. Furthermore, social media has changed the way of communication between companies and customers. Unlike the traditional way of receiving company specific information from its customers, user generated contents are seen to be more trusted. With these changes in consumer behaviour, one can agree that websites are not the only entry point of interaction for today's consumers. This thesis doesn't take into account how online trust is impacted by these change in consumer behaviour and if these changes have somehow made it flexible for online stores in terms of website quality. Thus, this study lacks the discussion on online trust being influenced by other significant factors. It would be interesting to learn if having for example indulging social media contents or mobile applications or even enhancing brand image through marketing efforts may lower customer's expectation of a high quality website in order to make them trust the web vendor. Further study could seek an answer to - do they matter and if yes, to what extent?

Another limitation in this study is that the online survey was held among participants in Finland. This study doesn't take into account developing country context where people are not so experienced in online shopping. While most of the purchases still happen in traditional brick and mortar stores in developing countries in Asia and Africa, people in bigger cities are starting to adapt to online shopping. One of the important website quality dimensions discussed in this study is Security and Privacy assurance which includes secure payment transactions offered by the web store. Developing countries have limitations with online banking and cash-on-delivery is one of the most common methods for online shopping. Basically, customers would place an order through the web store and store representatives would deliver the product and collect money on the spot. In this kind of "online" purchase, there is less risk for customers because they don't need to submit any sort of credit card details or worry about making payments before receiving a product. The impact of website quality on online trust and ultimately in purchase decisions may not be so relevant in this kind of online purchase scenario. Since this study is limited to developed country context, it is likely that the results obtained from similar survey in developing countries may vary significantly.

Finally, the survey conducted in this study adopts an online questionnaire where participants were asked to review the website and fill in the survey. The results are based on a hypothetical setting which may not always simulate an actual behaviour. While many previous researchers (Sheppard et al., 1988 in McKnight et al., 2002; Fishbein & Ajzen, 1975) have adopted similar research model to study latent variables like trust and confirmed the reliability and validity of this approach, which is also justified by the proper reliability and validity measures conducted in this study, some researchers think that the data collected through this approach can be biased depending on the situation and thus may not be always reliable. In that sense, this data may have limitations to some extent

and cannot be used to generalize the results for concepts that are being researched.

5.5 Future research

In this research, the main focus was on the website quality. Various quality dimensions were studied and examined to see their impact on online consumer trust. Thereafter once positive trust is formed, what is its effect on eWOM intentions and behavioural intentions of customers? Future research could study how online trust is impacted when machine learning features for product recommendations are incorporated into e-commerce sites. While more and more online stores are investing on personalization and targeted ads, further investigation could include if they provide further support to earn online trust?

Another suggestion for future research is to dive deeper into the website quality dimensions and identify key attributes that play important role in online trust. This study has concluded that there is a significant relationship between online trust and three website quality dimensions namely - website aesthetics, security and privacy assurance and website information quality. All these dimensions constitute several aspects. However, the study doesn't discuss in further details which aspects in these dimensions have higher impact. Further study could examine what aspects are more important from user's point of view to gain online trust. Similarly, various trust models could be studied and incorporated in the current study.

Despite that some previous studies have demonstrated positive impact of website usability on online trust, the results in this study concluded that there is no significant association between the two. It is suggested to do further research on the website usability and factors that influence the relationship between website usability and online trust. For example, is website usability considered to be more important for users that belong to a certain demographic? Is there any relevance of website usability for inducing online trust when visitors visit a website for the first time? In such cases, can other dimensions like website aesthetics and website information quality become more prevalent?

Lastly, further research could be done regarding the relationship between eWOM intentions and behavioural intentions. This study examined purchasing decisions, revisiting the website and gathering information as behavioural intentions. One direction for further research is to study if positive behavioural intentions lead to positive eWOM intentions and vice-versa? Similarly, it would be interesting to investigate if customers are willing to recommend any online store to their friends and family without any behavioural intentions. What if incentives are provided? Will it change consumer behaviour? These are indeed some interesting topics that could be studied regarding impact on online trust and consumer behaviour in e-commerce world.

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APPENDIX 1 Survey Questionnaire

1. Please choose the extent to which you agree or disagree with the following statements about e-ville's website regarding **website usability**.
(1 = strongly disagree, 7 = strongly agree)

Considering the home page of this site, I understand clearly what can be done.
I can find easily what I am looking for on this site.
I always know where I can go.
Menus are distinct from other displayed information.
The grouping of menu options is logical.
I am always able to go back easily to the pages that I had previously visited.
The structure of this site seems logical to me.

2. Please choose the extent to which you agree or disagree with the following statements about e-ville's website regarding **security and privacy assurance**. (1 = strongly disagree, 7 = strongly agree)

This site provides detailed information about security.
I feel assured that my personal information will not be shared with third parties.
This site provides a clearly written policy of handling privacy information.
This site provides a secure transaction mechanism.

3. Please choose the extent to which you agree or disagree with the following statements about e-ville's website regarding **speed of download**. (1 = strongly disagree, 7 = strongly agree)

Pages on this site I visit usually load quickly.
When I interact with this site, there is very little waiting time between my actions and the site's response.
Interacting with this site is slow and tedious. (R)

4. Please choose the extent to which you agree or disagree with the following statements about e-ville's website regarding **website information quality**.
(1 = strongly disagree, 7 = strongly agree)

This site provides sufficient product and service information.
This site provides easy-to-understand product information.
This site provides easy-to-understand service information.
This site provides detailed product information.

5. Please choose the extent to which you agree or disagree with the following statements about e-ville's website regarding **website aesthetics**. (1 = strongly disagree, 7 = strongly agree)

The website looks attractive.

The website looks organize.

The website uses its logo, texts and fonts properly.

The website uses colours properly.

The website is visually appealing.

The website uses images properly.

6. Please choose the extent to which you agree or disagree with the following statements about e-ville's website regarding **online trust**. (1 = strongly disagree, 7 = strongly agree)

Based on my experience with the website, I have gained some trust with this vendor.

E-ville has much knowledge about the work that needs to be done.

E-ville tries hard to be fair in dealing with others.

I feel very confident about e-ville's service.

E-ville is well qualified.

e-ville is very capable of performing its job.

e-ville will go out of its way to help me.

I never have to wonder whether e-ville will stick to its word.

E-ville would not knowingly do anything to hurt me.

7. Please choose the extent to which you agree or disagree with the following statements about e-ville's website regarding **e-Word of mouth intentions**. (1 = strongly disagree, 7 = strongly agree)

I strongly recommend people buy products online from this vendor.

I will tell about this brand to others in my online network.

I will speak favourably of this vendor to others.

8. Please choose the extent to which you agree or disagree with the following statements about e-ville's website regarding **behavioural intentions**. (1 = strongly disagree, 7 = strongly agree)

I will use this website for online purchases.

I encourage others to shop online at this retailer.

I will revisit this website.

9. Gender

Male

Female

Other

Don't want to answer

10. Age

15-25

26-35

36-45

46-55

56-65

> 66

11. Profession

Student

Employee

Unemployed

Entrepreneur

On break (maternity/paternity/study etc.)

Retired

12. Income

0-1500 €/month

1600-2300 €/month

2400-3400 €/month

3500-4000 €/month

>4000 €/month

13. How often do you shop online?

< 1 time per month

2-4 times per month

5-7 times per month

8-10 times per month

> 10 times per month

14. Do you prefer shopping online to visiting physical stores?

Yes

No

15. Were you familiar with this website?

Yes

No

16. Have you ever bought anything from this website before?

Yes

No

17. In your opinion, is it possible to trust a brand if it functions fully online and doesn't have a physical store?

Yes

No

18. In your opinion, is the website design (layout, colours, fonts, texts) important to make you trust a website?

Yes

No

19. Will you buy from a website that has poor visuals but is secured and trustworthy?

Yes

No