

How e-servicescapes affect customer online shopping intention: the moderating effects of gender and online purchasing experience

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Abstract E-commerce is expanding at a tremendous rate, and the related internet pages, referred to as an electronic servicescapes (e-servicescapes) now have a significant presence in the business world. Nevertheless, understanding of e-servicescape attributes remains unclear, due to the limited empirical evidence that has been obtained and examined. Therefore, this study aims to describe the nature of e-servicescapes and investigate the relationships among website trustworthiness, website attitude, brand attitude, e-WOM intention, and purchase intention. Furthermore, this study also aims to identify the role of two contextual factors, namely online purchasing experience and gender differences, and their effects on the relationships among the e-servicescape dimensions, website trustworthiness and attitude. A total of 290 responses were collected from Taiwanese consumers using online-based questionnaires. SPSS and partial least square were used to analyze the collected data. The findings show that e-servicescape dimensions (aesthetic appeal, customization, usability, and financial security) have significant impacts on

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consumer attitudes and trust toward a website. In particular, women are more likely to experience more positive effects of e-servicescape on internal responses, such as website trustworthiness and attitude. In addition, purchase intention and e-WOM intention can be influenced through internal responses. Based on the results of this study, it is recommended that website designers aim to improve the usability, customization, and financial security dimensions of their sites, and especially the aesthetic appeal, so the effectiveness of their designs can be optimized. It is also necessary for e-retailers to raise the top-of-the-mind awareness for their brands, as this can enhance trust in the website. In addition, marketers may add the 'social network' factor to offer a platform on which customers can connect with friends and share their experiences with the website and brand, as this may further enhance purchase intention.

Keywords e-Servicescapes · Website trustworthiness · Website attitude · Brand attitude · e-WOM intention · Purchase intention

1 Introduction

Online shopping environments are been seen as significant spaces within with the relationship between marketers and consumers is being increasingly played out (Demangeot and Broderick 2010). With the widespread potential of online retailing, it is not surprising to find a growing body of research which aims to identify and explore the factors influencing consumer preferences in this relatively new context (Doherty and Ellis-Chadwick 2010). However, it is not easy to ensure the validity of the existing quantitative studies, especially when the findings and the targeting of experienced respondents are increasingly difficult to assess. Furthermore, e-vendors face the challenge of not only attracting new online customers, but also keeping existing ones.

Researchers have made many efforts to build up and develop a range of concepts to examine the nature and effects of online physical environments (Harris and Goode 2010; Abarbanel 2013), particularly with regard to the construct of e-servicescapes. Nevertheless, to date, the understanding of e-servicescape attributes remains unclear due to the limited empirical evidence that has been obtained (Harris and Ezeh 2008), and thus a more robust research model is obviously needed to examine the impact of e-servicescapes on online behavioral (Chen et al. 2010).

The aim of this research is therefore to address two gaps in the literature. The first relates to the adoption of the stimulus–organism–response (S–O–R) framework (Mehrabian and Russel 1974) to examine how the attributes of e-servicescapes may affect website trustworthiness, website attitude, and brand attitude, considered as affective- and cognitive-based states. In addition, based on the core idea of the theory of planned behavior (TPB), which asserts that consumers' behavioral intentions are composed of the attitude toward use, subjective norms, and perceived behavioral control, this study will also examine the influences among the proposed states (Fishbein and Ajzen 1975). Finally, and drawing on the dual mediation

hypothesis (DHM), this study will analyze the relationships among attitude toward website, attitude toward brand and purchase intention, which represent the organisms and responses, respectively, in our causal chain (Karson and Fisher 2005).

From the e-commerce perspective, online vendors need to build effective websites to enhance and maintain customer relationships. A lack of trust and negative attitudes toward websites and brands have been identified as critical factors that impact purchase intention in an online context. Trust is not only pivotal to online exchanges (Yen and Gwinner 2003), but also central to online service dynamics (Harris and Goode 2004). Additionally, some studies propose a strong positive relationship between website attitudes and brand (or product) attitudes, with both being positively related to purchase intentions (Hwang et al. 2011).

Studies of consumers' e-WOM intentions have been carried out with regard to marketing, consumer behavior, and other areas of business (Park and Lee 2009; Hsieh et al. 2012). Previous studies have examined the antecedents of e-WOM and indicated some factors that can enhance this (Chung and Shin 2010; Bataineh 2015). Research on consumer engagement in e-WOM has been carried out by examining the comments that people leave on the Internet, but this may be an inappropriate approach to this issue (Shih et al. 2013). On the other hand, it has been well documented that e-servicescapes have a significant impact on customer assessments of and responses toward an organization's website and online retailers in general (Hopkins et al. 2009; Cheung et al. 2012). Based on the above discussion, this study aims to collect more empirical evidence by integrating S-O-R, TPB, DMY, and e-WOM into a comprehensive model to better understand online shopping behaviors.

A second research gap is linked to how the contingency effects of e-servicescape and online purchase experience and gender can improve the trustworthiness of and attitude toward a website. A general experience with the process of going online has been widely recognized as an important enabler of online shopping, especially for tangible products (Citrin et al. 2003). Online shopping experience is the result of previous purchases that customers have made (Pappas et al. 2014), and it is expected that this will influence customers' future purchase intentions. According to Kim et al. (2013), different levels of online shopping experience may impact the core factors that affect customer online attitudes and behaviors. Saprikis et al. (2010) suggest that non-experienced consumers and experienced consumers have different thoughts, beliefs and perceptions towards online shopping, which may result in different attitudes and behaviors. Previous studies have revealed different contingency factors that may influence consumer satisfaction and purchase intention. However, most of these works propose the same level of online shopping experience (Pappas et al. 2014). Therefore, this study aims to examine the moderating role of online shopping experience, as this has been largely ignored in the literature.

On the other hand, as a second contingency factor, this study examines gender differences, as a possible moderator factor in the relationships between the e-servicescape dimensions and internal responses. Previous studies have demonstrated that gender differences may lead to different attitudes toward online shopping, as well as different consumer behaviors (Chen et al. 2015). In essence, the

literature proposes that male consumers feel more motivated by a products' functional features, while female consumers are more influenced by the emotional and social attachments they feel toward a product (Dittmar et al. 2004). Garbarino and Strahilevitz (2004) also state that men and women perceive the level of risk toward the use of a website in a different manner, with men being more comfortable with a higher level of risk. However, the influences of gender differences have rarely been examined in consumers' evaluations of response outcomes.

Based on the above discussion, this study aims to contribute to the literature as follows: (1) by examining the nature of e-servicescapes and the e-servicescape dimensions from the view of Taiwanese consumers, and the effects that these dimensions have on the perceived trustworthiness of a website, customer responses to a website, brand evaluations, purchase intentions and e-WOM intentions. (2) By also examining the moderating effects of gender and online purchasing experience on the relationship between e-servicescape and internal responses. The rest of this paper is organized as follows. Section 2 reviews the literature and the main constructs and theories. Section 3 describes the hypotheses development, while Sect. 4 then presents details of the methodology, data collection, and measurement items used in this work. Section 5 reports the results of this study, and the related analysis, while the discussion is presented in Sect. 6. Finally, the academic and managerial implications are stated in Sect. 7.

2 Literature review

2.1 Definition of the research constructs

Following Harris and Goode (2010), this study defines an e-servicescape as the online physical factors that exist in the moment of service delivery which may affect customer satisfaction. An e-servicescape consists of three sub-dimensions, namely aesthetic appeal, layout and functionality, and financial security (Harris and Goode 2010). Aesthetic appeal is defined as the overall impressiveness and attraction of a website. Layout and functionality is defined as the design aspects of a website which create enjoyable interactions and experiences for users. Finally, financial security is defined as a security tools that are used when consumers make a payment. Aesthetic appeal is a way for a website to distinguish itself from its competitors, and is extremely important for online retailers (Harris and Goode 2010). In addition, the effectiveness of website functioning and layout are obviously important for an online store environment. In particular, website usability helps to clarify important information and enhances communication, while also enabling users to search for information in a simple manner. The degree of customization that a website offers related to the amount of personalized content that a user sees, and a high level of this creates a switching cost, and so increases the chance that a person will revisit the website (Harris and Goode 2010). Moreover, consumers may have more confidence toward a website when they feel safe about making payments on it.

Following Jarvenpaa et al. (1999), this study defines trust as consumer confidence toward the website and willingness to trust the sellers' actions in situation where customers may otherwise be vulnerable. Moreover, and based on the Theory of Planned Behavior, attitude refers to appraisals of people, objects, and issues (Ajzen and Fishbein 1980). In short, attitude can be understood as a disposition which can influence consumer behaviors. Therefore, this study defines attitude toward a website as an overall evaluation of a specific shopping experience that has occurred on the site. In addition, and according to Eagly and Chaiken (2007), attitude toward a brand can be seen as an internal evaluation of the brand that integrates the direct attitude toward it and the evaluation of the nature of the brand. This study thus defines attitude toward the brand as a consumer's overall appraisal of a brand that is introduced on a website.

In addition, following Kim and Kim (2010), this study defines e-WOM intention as the consumers' positive thoughts about any specific website or any brand introduced through the website, and the degree to which they are willing to share these with others. A customer's thoughts can be spread directly to others or indirectly through social media and networks. Traditional word-of-mouth is carried out through a face-to-face communication process, but e-WOM involves multiple forms of information exchange, and it is thus wider and more diverse than

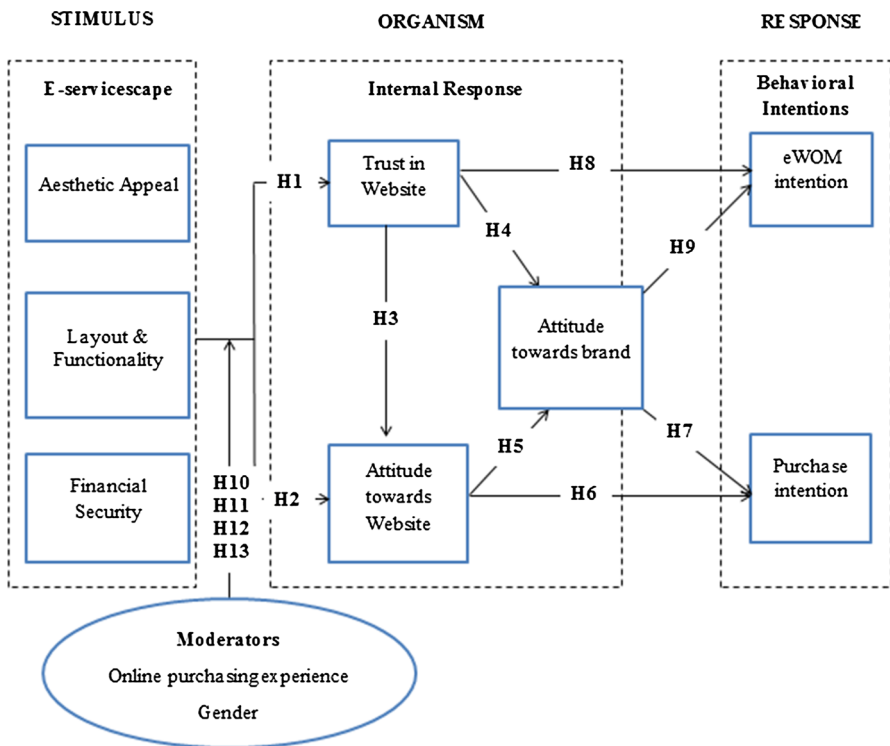


Fig. 1 The research framework

traditional WOM (Kim and Kim 2010; Prendergast et al. 2010). Finally, and following Harris and Goode (2010), this study defines purchase intention as the consumers' willingness to make a purchase through the website in the future.

As depicted in Fig. 1, and based on three major theoretical models, S–O–R model, TPB, and DMH, this research focuses on e-servicescapes and the various characteristics that are used to create an online store atmosphere. Using this research model, this study will validate the potential interrelationships among the research constructs.

2.2 E-servicescape

A servicescape refers to the physical environment (Harris and Ezeh 2008) offered by the service provider. With the increased usage of the Internet, organizations need to integrate customer needs and preferences into the designs of their websites (Parasuraman et al. 2005), and thus the online environment can be considered as a service entity (Hopkins et al. 2009). In short, the Internet enables interactions between organizations and customers that can reflect core service characteristics, such as intangibility, inseparability, and perishability (Zeithaml et al. 2006). In an online context servicescapes are known as e-servicescapes, and these are based on customer perceptions when they visit the online store (Tran et al. 2012).

While the importance of servicescapes to customer satisfaction has been extensively noted due to its influences on the customer behavior (Kandampully and Suhartanto 2000; Nguyen 2006), recent studies have also highlighted the growing significance of e-servicescapes, due to the important of the online stores for many retailers (Chang and Chen 2008; Harris and Goode 2010; Mummalaneni 2005). An e-servicescape refers to the characteristics of the physical environment in virtual spaces such as websites (Harris and Goode 2010). An e-servicescape can stimulate customer feelings and perceptions toward a website, and thus impact purchase intention. In this regard, organizations need to develop appropriate designs to create an online buying environment that produces specific emotional effects in shoppers that increase their willingness to make a purchase.

2.3 The S–O–R framework

Mehrabian and Russel (1974) proposed the S–O–R framework from an environmental psychology background, and this asserts that environmental stimuli (S) may lead to some specific emotional feedback from customers (O), and this feedback may then influence customer responses (R). The S–O–R was the first theory to propose that there is a relationship between the environment and behavior, and it has been widely employed in the consumer behavior literature and marketing studies (Donovan et al. 1994; Wakefield and Blodgett 1996). Moreover, scholars have also used it to examine the impact of a store environment or servicescape on customers' expectations, cognitions, and emotions (Bitner 1992; Reimer and Kuehn 2005).

2.4 Theory of planned behavior

The theory of planned behavior (TPB) asserts that an individual's behavioral intention is formed by their attitude toward use, subjective norms, and perceived behavioral control. Attitude toward use denotes the positive or negative feelings a person has regarding a specific behavior (Fishbein and Ajzen 1975). Subjective norms refer to the opinions of other, important individuals about whether or not a behavior should be performed (Scheepers and Wetzels 2007). Finally, perceived behavioral control refers to an individual's perceptions with regard to the ease or difficulty of carrying out a certain behavior (Ajzen 1991). Most of the studies that employ TPB focus on health-related behaviors (e.g., condom use, breast examinations, drug and alcohol consumption, and exercise; Ajzen 2004).

The TPB has also been employed to examine Internet- and technology-related behaviors. For example, Lee et al. (2010) applied the TPB to analyze teacher decisions to set up and deliver lessons utilizing computers. Moss et al. (2010) applied it to analyze student aims when adopting podcasting as a tool to improve learning. Robinson and Doverspike (2006) applied the TPB to examine the factors that influence student decisions to join to online courses rather than traditional ones.

2.5 Dual mediation hypothesis

The dual mediation hypothesis (DMH) was first applied in an advertising context, examining the influence of commercials on product appraisals and buying intentions (Homer 1990). In other words, the DMH has been adopted to explain the influence of advertising attitudes on consumer purchase intention (Karson and Fisher 2005). The DMH model suggests that cognition may determine attitudes (i.e., positive or negative feelings), and it also asserts that exposure toward an advertisement may create brand-relevant thoughts, which may then lead to brand attitudes. Overall, the DMH proposes that there are several different ways of changing consumer attitudes (Petty and Cacioppo 1986).

DMH studies have evolved not just regarding the development of new constructs, but also by applying this approach to new settings (Wagner et al. 2014). For example, Helm et al. (2009) examined the influence of free promotional offers on attitudes toward the related products. They proposed that such offers can be seen as advertisements for the product, which may then enhance its attractiveness. In this way the authors extended the DMH model by incorporating consumer features. The results demonstrated that consumers care about the value of the free offer rather than the functional association with the main product. In addition, Karson and Fisher (2005) employed the DMH model in an online advertising setting. In this, they substituted the consumers' attitude toward the website for the attitude toward an advertisement, and examined the influence of this on purchase intention. In the same way, López and Ruiz (2011) also applied the DMH model in an online setting, where the consumers were questioned about their attitudes, cognitions and intentions regarding a holiday booking website.

2.6 Summary of the literature review

Based on the S–O–R framework, this study intends to build up a causal chain. In a retail context, Donovan et al. (1994) were the pioneers in the implementation of the S–O–R framework. Retailers develop their websites as sales channels, and thus e-servicescape can be considered as stimuli which are comprised of the environmental features that may affect the consumer's mental states (Williams and Dargel 2004; Abarbanel 2013). Such websites can offer other benefits than those presented by traditional retail stores, such as the availability of the different products and the ability to shop at any time (Lee and Jeong 2012).

In short, e-servicescapes are seen as a set of controllable characteristics in the retail space that attract customers to enter the online store and which then increase the likelihood of changing a customer's beliefs, moods, attitudes and purchase intentions. On the other hand, the concept of organism denotes the consumer's cognitive and emotional states and processes, and this mediates the link between the stimulus and the customers' responses in the S–O–R framework (Mehrabian and Russel 1974; Abarbanel 2013; Kim and Lennon 2013). Based on cognitive appraisal theory, in an e-servicescape retail setting consumers need to make more cognitive efforts as their shopping is carried out using a computer, and thus the process is less intuitive than shopping offline. More precisely, cognitive appraisal theory assesses the emotions and attitudes toward events, agents, or objects (Ortony et al. 1988). Trust is considered as an attitudinal state that is developed based on consumer perceptions toward a website, while attitude can be considered as an internal process that leads to a specific behavior (Olson and Mitchell 2000).

Moreover, following Peng and Kim (2014), this study considers attitude toward a website and attitude toward brand as attitudinal states based on the information that is presented to consumers on a website (Williams and Dargel 2004). In the moment when consumers are formulating their attitudes toward a brand and website, they will assess the product's specifications, price, packaging, perceived quality, and aesthetics of the website, among other factors. This study thus considers website trustworthiness, website attitude, and brand attitude as the organism variables. Behavioral intention is considered as a major consequence of buying behavior (Bai et al. 2008; Poddar et al. 2009). Therefore, in the final stage of our causal chain, this study proposes consumer purchase intention and e-WOM intention after visiting the website as desirable responses.

By employing the cornerstone idea of the DMH model, this study considers that a website has a close similarity with an advertisement (Singh and Dalal 1999). Therefore, attitude toward a website bears close resemblance to attitude toward an advertisement (Karson and Fisher 2005). This study thus defines attitude toward a website by integrating the DMH model and the ideas in Goldsmith and Lafferty (2002). By employing the DMH model, this study intends to show how the attitude toward a website can influence the attitude toward a brand, and then impact purchase intention.

Finally, as mentioned earlier, the TPB is considered one of the most influential theories in examining and predicting behavior (Pavlou and Fygenon 2006). The TPB proposes that consumers' beliefs and attitudes will influence their behavioral

intentions. Based on this, this study proposes that the level of trust consumers feel toward a website may impact their attitude toward a certain behavior. Meanwhile, attitudes toward a website and brand are considered as two elements of the attitudinal components, both of which are predicted to directly affect the intention to shop online, followed by the intention to recommend it to others.

3 Hypotheses development

A research model is developed based on an integration of the above research concepts and the S–O–R framework, TPB, and DMH. Steel and König (2006) argued that synthesizing different theories into a comprehensive model may be beneficial for the following reasons: (1) a single theory is not able to explain the whole phenomena; (2) it can deal with more realistic situations; (3) it is possible to approach problems in a more effective manner by improving the levels of complexity, and thus new insights and bring solutions can be obtained which cannot be reached through the use of a single theory.

3.1 Interrelationships among e-servicescape, website trustworthiness, and attitude

According to the S–O–R framework, there is a strong relationship between a stimulus and organism states. Numerous authors have shown the performance of the e-servicescape dimensions has a huge effect on consumer trust in a website (Harris and Goode 2004, 2010; Tran et al. 2012). More specifically, aesthetic appeal refers to an effective website design that can help develop trust by attracting customers and gaining their attention (Li and Yeh 2010). Sarker and Wells (2003) stated that trust can be developed with the use of an attractive website, which can enhance trust in both the site and the company itself (Djamasbi et al. 2007; Gregg and Walczak 2010). The level of entertainment that the online environment provides also has a significant impact on consumer trust (Harris and Goode 2010). Furthermore, the ease of use of a virtual store's layout also influences consumer trust (Manganari et al. 2011). These findings imply that transaction safety is a crucial aspect of the online service environment that can build consumer trust in a website (Kim and Park 2013). Therefore, the following hypothesis is proposed:

H1 (a) Aesthetic appeal, (b) layout and functionality, (c) financial security will positively affect trust in a website.

There is a positive linkage between the information presented on a website and the emotional states felt by consumers, as well as their attitudes toward the website (Suh and Pedersen 2010). Consumer perceptions of the online store's aesthetics induce emotions, which in turn affect consumer attitudes towards the store and their purchase decisions (Tractinsky and Lowengart 2007). Wu et al. (2013) found that consumers will have positive evaluations of websites, if online retailers use "a good layout design and pleasing atmosphere". Meanwhile, online financial security refers to the degree to which consumers perceive the processes of payment are secure or

safe. The ease of payment transactions represents a key dimension that is used by consumers to evaluate websites, and perceived security also drives online satisfaction (Montoya-Weiss et al. 2003). Based on the previous literature, the following hypothesis is proposed:

H2 (a) Aesthetic appeal, (b) layout and functionality, (c) financial security will positively affect the attitude toward a website.

3.2 Interrelationships among website trustworthiness, website attitude and brand attitude

According to the TPB, online trust has a powerful correlation with attitudes toward online transactions (Pavlou and Fygenon 2006), and can determine customer attitudes in an online shopping mall (Grazioli and Jarvenpaa 2000). If an individual believes that the Internet is generally a trustworthy channel to conduct personal transactions, then this belief should positively influence the individual's attitude toward a specific website.

Moreover, the DMH model also asserts that websites reflect the characteristics of traditional advertisements, as both are crafted in the same way. Researchers have shown that customer attitudes toward an advertisement positively influence their attitudes toward the brand (Hwang et al. 2011). The Extended Dual Mediation Hypothesis model (Karson and Fisher 2005) extends the traditional advertising models by incorporating the particular characteristics of the Internet, suggesting that brand attitude is affected by attitude toward a website, with this linkage supported by a number of studies (Hwang et al. 2011; Sicilia and Ruiz 2007). In fact, consumers may transfer positive or negative feelings from a website to the products or brand on that website. On this basis, the following hypotheses are proposed:

H3 Trust in a website is positively related to attitude toward the website.

H4 Trust in a website is positively related to attitude toward the brand.

H5 Attitude toward a website is positively related to attitude toward the brand.

3.3 Interrelationships among the organism variables and response variables

Scholars have noted that if a website creates a happy atmosphere in the online shopping process, then it will attract more potential customers and raise their purchase intentions (Hopkins et al. 2009; Wu et al. 2013). In addition, customer attitudes toward a brand have been shown to have strong influences on purchase intentions in previous research (Mazaheri 2011). It is also clearly understood that favorable attitudes toward a brand lead to higher intentions to revisit the website, as well as greater purchase intentions. Brand attitude also has a mediating role in the relationship between attitude toward a website and purchase behavior (Hwang et al. 2011). Based on this, the following hypothesis is proposed:

H6 Attitude toward a website will positively affect purchase intention.

H7 Attitude toward a brand will positively influence purchase intention.

The TPB model examine the links amount beliefs, attitudes and intentions (Ajzen and Fischbein 1980). Numerous authors have shown that trust has a powerful influence on both purchase and WOM intention (Kim and Kim 2010). The greater trustworthiness of a website will convince customers that the provider only sell good quality items, and so they will be more willing to recommend it to others. It is thus believed that trust significantly affects e-WOM intention in consumer perceptions of e-servicescapes (Tran et al. 2012). Additionally, attitude toward a brand is one of the emotions that is expected to have a positive influence on e-WOM intention (Bitner 1992). Another possible reason that may explain the influence of attitude toward a brand on e-WOM is found in the components of the TPB model (Jung and Kim 2012). Based on this rationale, the following hypotheses are proposed:

H8 Trust in a website will positively influence e-WOM intention.

H9 Attitude toward a brand will positively influence e-WOM intention.

3.4 The moderating effects of online purchasing experience and gender

Customers' prior purchase experience is reflected in their knowledge and expertise about the company. However, experienced shoppers are often attracted by beautiful websites, instead of remaining loyal to their current favorite site for a long time (Kim and Stoel 2004). Additionally, since experienced users are familiar with the online purchasing process, they will have more trust and positive attitudes toward the website if it can provide a clear layout and navigation functions (McKnight and Chervany 2002; Hernández et al. 2010). In contrast, less experienced customers are only superficially acquainted with the features of a focal website (Gefen et al. 2003). Furthermore, although previous studies found that more experienced shoppers perceive less financial risk than less experienced ones, other researchers found that more experienced users may avoid online purchases because of the potential financial risk (Dai et al. 2014). Therefore, the following hypotheses are proposed:

H10 The effects of (a) aesthetic appeal, (b) layout & functionality, and (c) financial security on website trustworthiness will be stronger for high experience customers than low experience customers.

H11 The effects of (a) aesthetic appeal, (b) layout & functionality, (c) financial security on website attitude will be stronger for high experience customers than low experience customers.

Previous studies have also shown that gender influences consumer decision-making (Hansen and Møller Jensen 2009; Yoshida and Gordon 2012). Cyr and Bonanni (2005) argued that "women did not trust e-commerce to the same extent as men did". Moreover, women are more sensitive toward the physical environment than men (Chiu et al. 2005), and this impacts how they evaluate service quality. Meanwhile, the perceived quality of presentation, as reflected through the layout

and functionality of a website, influences women more strongly than men (Zhang et al. 2009). Women also perceive more financial risk than men in the online shopping process (Dai et al. 2014). On the other hand, women tend to be more confident and have a more positive attitude toward websites that are seen as safe than men. Therefore, the following hypotheses are proposed:

H12 Female consumers are associated with more positive effects of (a) aesthetic appeal, (b) layout and functionality, and (c) financial security on web site trustworthiness.

H13 Female consumers are associated with more positive effects of (a) aesthetic appeal, (b) layout and functionality, and (c) financial security on web site attitude.

Based on the discussion presented above, this study develops the research model shown in Fig. 1 for further empirical testing.

4 Methodology

4.1 Research model

As depicted in Fig. 1, this study draws on S–O–R theory to create a causal chain, integrating the stimulus (e-servicescape), organism (trust in website, attitude toward website and attitude toward brand), and final outcome (e-WOM intention and purchase intention). The research model shows that the three dimensions of e-servicescape work as a stimulus transformed by attitudes, states and processes called an organism, which in turn creates a response. This study underpins its rationale regarding the positive relationships among website trustworthiness, website attitude and brand attitude with the TPB, which asserts the importance of paying attention to external factors in order to explain the behavioural intentions of consumers (Zhang et al. 2012).

Furthermore, based on the DMH, which is a widely used model for explaining the influence of advertising attitudes on consumer purchase intentions (Moore and Lutz 2000; Karson and Fisher 2005), this study employs the extended dual mediation hypothesis, which creates an analogy between advertising attitudes and website attitudes (Karson and Fisher 2005; Wagner et al. 2014). More precisely, in our research model website trustworthiness may influence attitude toward website, which will then impact the attitude toward the brand. Based on this, attitude toward plays a mediator role between website trustworthiness and attitude toward the brand (Karson and Fisher 2005). At the same time, attitude toward the brand will influence purchase intention. Looking at our proposed model, it is comprehensible that attitude toward the brand plays a mediator role between attitude toward website and purchase intention (Karson and Fisher 2005), and thus the DMH is considered appropriate for explaining the rationale of the focal relationships (MacKenzie et al. 1986).

4.2 Data collection

Taiwan is one of the most heavily computerized societies in the world. Following an online study conducted by Nielsen (2014), 87 % of online consumers in Taiwan are interested in making purchases online. Clothing items are the most preferred produces, accounted for 45 % of the merchandise purchased online. In the first stage of the data collection process, 10 fashion brand websites in Taiwan were examined using convenience sampling of 35 graduate and undergraduate students. The website www.lativ.com.tw was then chosen based on the respondents' evaluations. The second stage consisted of a pre-test that verified the reliability and validity of the measurement scales, based on replies from 100 respondents. Potential participants were invited through an online link and a description of the study. By clicking the link, participants were automatically connected to the Lativ website and asked to browse it for a while. After doing so, the participants then completed the survey. The results of the pre-test demonstrated that the survey met the reliability requirements, such as the factor loadings of the measurement items exceeding the threshold value of 0.6, the item-to-total correlation exceeding 0.5, and the Cronbach's alpha coefficients exceeding the threshold value of 0.6. The main study was then carried out to test the hypotheses.

Finally, a total of 290 valid questionnaires were collected. More than 61 % of the respondents were female, and more than 58 % of them were aged between 20 and 24 years old. In addition, more than 80 % of the respondents had a bachelor degree or above, and more than 60 % had a low level of experience of online purchasing. Among the respondents, 67.6 % reported shopping online between one to three times within the last year.

4.3 Measurement items

The constructs employed in this research were elaborated based on widely accepted multi-item scales which were developed based on the previous literature. This study performed several standard processes to achieve the hypothetical definitions, statistical examinations, and purification process (Straub 1989). The seven major constructs were assessed employing a seven-point Likert scale (1 = strongly disagree, 7 = strongly agree).

The items used to assess e-servicescape were adopted from Harris and Goode (2010). In particular, aesthetic appeal (seven items) was comprised of two sub-dimensions, visual appeal (four items) and entertainment value (three items). Layout and functionality (thirteen items) were measured through three sub-dimensions: interactivity (two items), usability (seven items), and customization (four items). Financial security was measured with five items. Web site trustworthiness was measured with eight items adopted from Harris and Goode (2010). Attitude toward the website was measured with eight items adopted from Chen et al. (2002) and Kraft et al. (2005). Brand attitude was measured with five items adopted from Spears and Singh (2004), while purchase intention was measured with four items from Wu et al. (2013). Finally, e-WOM intention was measured with five items from Okazaki (2009) and Verhoef et al. (2002).

5 Results and analysis

5.1 Evaluation of the measurement model

To maintain the flexibility of this exploratory study, all the constructs are considered as single constructs. Most variables remain as one factor, except e-servicescape, which is a multiple construct consisting of three dimensions. The results from factor loading show that all seven items represent both sub-dimensions, namely aesthetic appeal is loaded on one factor. Nonetheless, the layout and functionality dimensions are separated into two factors. The six items of the sub-dimension “usability” are loaded into one factor; while the four items of customization and one item of interactivity are loaded on another factor and modified by the “customization” factor. Lastly, factor analysis for financial security comprises five items. As a result, e-servicescape is divided into four dimensions: aesthetic appeal, usability, customization, and financial security.

Smart Partial Least Squares (Smart PLS) was then used to analyze the collected data. PLS-SEM provides more flexibility when formative measures are involved. The model used in this study is quite complicated and has small samples. Moreover, some assumptions are less restrictive. According to Hair et al. (2014), PLS can be applied to address a wider range of problems than the covariance-based structural equation modeling (CB-SEM). PLS uses component-based algorithms and can estimate the formative constructs. A confirmatory factor analysis (CFA) is performed using PLS software. All the item loadings for the scales exceed 0.7.

In addition, the average variance extracted (AVE) of the constructs ranges from 0.560 to 0.842, much higher than the recommended value (0.5), thus reflecting the satisfactory reliability and convergent validity of the constructs. The Cronbach’s alpha coefficients are 0.804–0.939, much higher than the rule of thumb of 0.7, thus confirming the internal consistency of the measurement items. The composite reliability (CR) coefficients range from 0.863 to 0.955, over the criteria of 0.6, showing that the variance shared by the respective indicators is robust (Table 1).

Table 1 Evaluation of the measurement model

	Loading	AVE	Composite reliability (CR)	R ²	Cronbach’s alpha
Aesthetic appeal	0.715–0.852	0.618	0.919	n.a.	0.896
Usability	0.781–0.879	0.560	0.863	n.a.	0.804
Customization	0.735–0.831	0.715	0.938	n.a.	0.902
Financial security	0.731–0.901	0.718	0.927	n.a.	0.901
Trust in website	0.705–0.881	0.606	0.924	0.686	0.906
Attitude toward website	0.763–0.902	0.760	0.950	0.769	0.936
Brand toward website	0.874–0.917	0.805	0.954	0.720	0.939
Purchase intention	0.882–0.940	0.842	0.955	0.618	0.937
e-WOM intention	0.826–0.928	0.772	0.944	0.502	0.926

Table 2 Inter-correlations among research constructs

Construct	Mean	SD	1	2	3	4	5	6	7	8	9
Aesthetic appeal	4.696	0.97	<i>0.786</i>								
Brand attitude	4.899	1.029	0.718	<i>0.897</i>							
Website attitude	4.981	1.064	0.734	0.806	<i>0.872</i>						
e-WOM intention	4.675	1.165	0.612	0.634	0.650	<i>0.879</i>					
Financial security	4.938	1.032	0.641	0.628	0.687	0.554	<i>0.848</i>				
Usability	5.002	0.991	0.719	0.615	0.655	0.568	0.677	<i>0.846</i>			
Customization	4.280	0.931	0.616	0.593	0.569	0.464	0.542	0.568	<i>0.748</i>		
Purchase intention	4.869	1.205	0.636	0.746	0.748	0.761	0.551	0.554	0.509	<i>0.917</i>	
Web trustworthiness	4.786	0.897	0.745	0.827	0.855	0.702	0.681	0.675	0.691	0.727	<i>0.778</i>

Values below the diagonal are inter-construct correlations; Italic values on the diagonal are the square root of the AVE
SD standard deviation

The discriminant validity was also tested by comparing the square root of the AVE. The results in Table 2 show that discriminant validity was ensured, as the AVE square root values exceeded the inter-correlations among the constructs in the model. Nevertheless, a Harman's one-factor test was adopted and all variables were loaded into a principal component factor analysis (Podsakoff et al. 2003). The results show that 49.2 % of the explained variance of the one-factor test was in the un-rotated solution (<50 %). These empirical results thus suggest that the degree of common method variance in this work is still under the acceptable level. As such, further empirical tests are conducted in the following sections.

5.2 Evaluation of the structural model

Smart PLS was used to examine the interrelationships proposed in the research model within the context of this study, and the results are shown in Fig. 2. The estimated coefficients and signs, as well as the *t* values of each path with respect to the structural and measurement models, are depicted in Table 3.

As shown in Fig. 2, the influences of aesthetic appeal ($\beta = 0.321$, $t = 5.398$), usability ($\beta = 0.101$, $t = 1.761$), customization ($\beta = 0.323$, $t = 5.636$), and financial security ($\beta = 0.215$, $t = 3.868$) on trust toward the web site are all significant. Therefore, hypotheses H1a, H1b, H1c, and H1d are supported. Similarly, aesthetic appeal ($\beta = 0.177$, $t = 3.771$) and financial security ($\beta = 0.321$, 5.398) have significant impacts on consumer attitudes toward the website, supporting H2a and H2d. However, the interrelationship between usability and website attitude was insignificant ($\beta = 0.028$, $t = 0.582$), and thus, the data fail to support H2b. Unexpectedly, there is a negative relationship between customization and website attitude ($\beta = -0.073$, $p < 0.001$), and thus H2c is not supported, and this result deserves further validation. Furthermore, as H3 predicted, there is a strong positive relationship between website trustworthiness and a consumer's attitude toward the website ($\beta = 0.652$, $p < 0.001$). Additionally, H4 predicted that website trustworthiness affects the attitude toward the brand, and Fig. 2 confirms

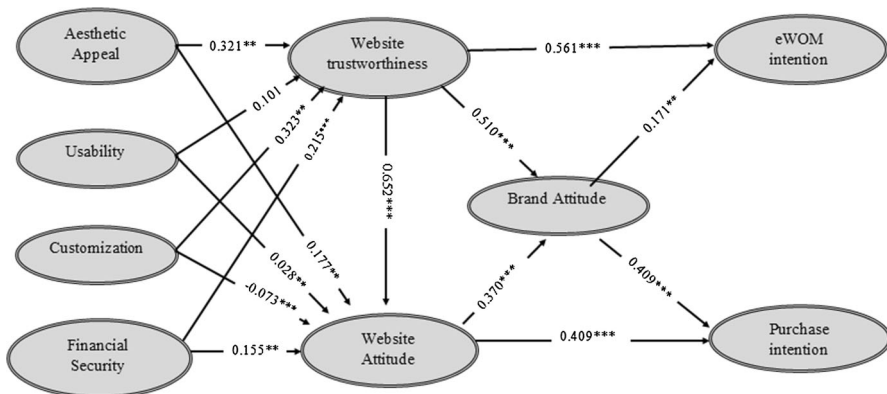


Fig. 2 Hypotheses testing of structural model

Table 3 Evaluation of structural model and hypotheses testing

Hypo.	Path	Standardize estimate	t value	p value
H _{1a}	Aesthetic appeal → website trustworthiness	0.321	5.398	***
H _{1b}	Usability → website trustworthiness	0.101	1.761	*
H _{1c}	Customization → website trustworthiness	0.323	5.636	***
H _{1d}	Financial security → website trustworthiness	0.215	3.868	***
H _{2a}	Aesthetic appeal → website attitude	0.177	3.771	***
H _{2b}	Usability → website attitude	0.028	0.582	–
H _{2c}	Customization → website attitude	–0.073	2.713	***
H _{2d}	Financial security → website attitude	0.155	3.009	***
H ₃	Website trustworthiness → website attitude	0.652	11.616	***
H ₄	Website trustworthiness → brand attitude	0.510	7.675	***
H ₅	Website attitude → brand attitude	0.370	5.622	***
H ₆	Website attitude → purchase intention	0.418	6.001	***
H ₇	Brand attitude → purchase intention	0.409	6.686	***
H ₈	Website trustworthiness → e-WOM intention	0.561	6.990	***
H ₉	Brand attitude → e-WOM intention	0.171	1.987	**

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

that there is a significantly positive relationship ($\beta = 0.510$, $p < 0.001$), and so H4 is supported. In addition, the relationship between a user's attitude toward a website and brand attitude is significant ($\beta = 0.370$, $p < 0.001$), as is the impact that website attitude has on purchase intention ($\beta = 0.418$, $p < 0.001$), and so H5 and H6 are supported. In terms of purchase intention, brand attitude ($\beta = 0.409$, $t = 6.686$) and consumer trust positively affect e-WOM intention towards a specific website ($\beta = 0.561$, $t = 6.990$), supporting H7 and H8. As hypothesized, the relationship between brand attitude and e-WOM intention is significant ($\beta = 0.171$, $t = 1.987$), and so H9 is supported. The detailed parameter coefficients and t values are shown in Fig. 2 and Table 3.

To further explore the moderating effects of online purchasing experience on the relationships among e-servicescape, website trust, and attitude, the K-means cluster method was used to divide the respondents into four groups. For example, in the case of aesthetic appeal (AA), the respondents were divided into four groups using AA and EX (online purchasing experience) as the clustering variables. Following this, the respondents were divided into the following four groups: (1) High AA/High EX; (2) High AA/Low EX; (3) Low AA/High EX; and (4) Low AA/Low EX.

These results indicate that those respondents with more experience tend to have higher belief ($F = 59,086$, $p < 0.000$) and higher attitude behavior ($F = 47,913$, $p < 0.000$) toward aesthetic appeal websites, compared to those with less such experience. In addition, more experienced shoppers tend to have higher belief ($F = 22.425$, $p < 0.000$) and higher website attitude ($F = 12.282$, $p < 0.000$) than less experienced ones toward the customization dimension of website. Furthermore, compared to less experienced customers, more experienced ones tend to have higher

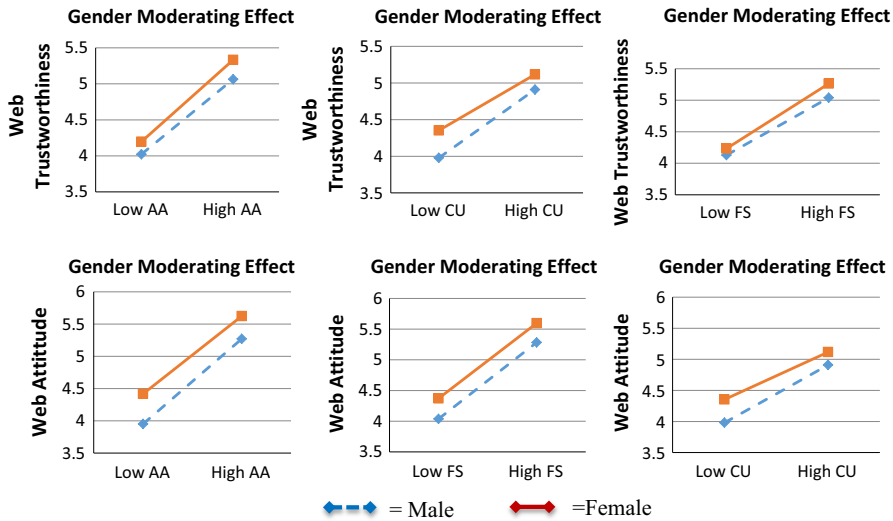


Fig. 3 The roles of the gender moderator

website trustworthiness ($F = 43.386$, $p < 0.000$) and higher website attitude ($F = 51.568$, $p < 0.000$) toward the financial security dimension of the website, and thus H10 and H11 are supported.

Considering the moderating effect of gender, this study used the same K-means cluster analysis to divide the respondents into four groups for each gender moderator. The results indicate that the female respondents tend to have higher website trustworthiness ($F = 59.921$, $p < 0.000$) and higher website attitude ($F = 57.960$, $p < 0.000$) than the male respondents toward the effect of the aesthetic appeal dimension. Additionally, the women tend to have higher website trustworthiness ($F = 24.756$, $p < 0.000$) and higher website attitude ($F = 18.337$, $p < 0.000$) than the men toward the effect of the customization dimension. Finally, women also tend to have higher website trustworthiness ($F = 42.783$, $p < 0.000$) and higher website attitude ($F = 54.852$, $p < 0.000$) than men toward the effect of financial security, and so H12 and H13 are supported (Figs. 3, 4).

6 Discussion

This study aims to identify the effects of e-servicescape on consumer attitudes toward website, brand evaluation, purchase intention, and e-WOM in an online setting. It theoretically extends the applicability of the Stimulus–Organism–Response (S–O–R) model, Theory of Planned Behavior (TBP), and Dual Mediation Hypothesis (DMH) model.

First, the conceptualization of e-servicescape was operationalized and tested successfully. Moreover, this study successfully generated some support for the

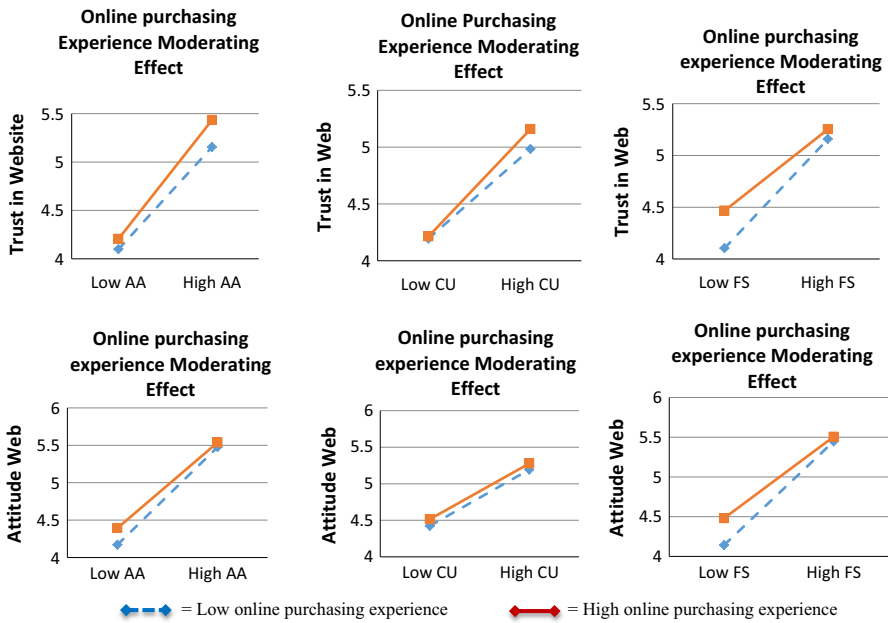


Fig. 4 The roles of the online purchasing experience moderator

generalized e-servicescape framework of Harris and Goode (2010), and specifically in the two dimensions of aesthetic appeal and financial security. Additionally, the findings reveal that the usability and customization dimensions cannot be considered as one factor, layout and functionality, as was done in the original theory. As a result, the construct of e-servicescape used in the current study is composed of four dimensions: aesthetic appeal, usability, customization, and financial security.

Second, the results of this study reconfirm that e-servicescape has a huge impact on consumer trust in a website. The findings validate the existing literature, which indicates that customer trust in a website can almost totally be explained by the e-servicescape factors (Tran et al. 2012). The results of the current study also indicate the strong links among aesthetic appeal, financial security and attitude toward the website. Previous studies show that a usable website creates a positive attitude, and website usability also affects the possibility of attracting and retaining customers (Karim 2011; Green and Pearson 2011). In contrast, Jun and Jaafar (2011) pointed out that there is no significant relationship between perceived usability and customer attitudes toward an online store. Our findings did not find support for the relationship between the usability of the website and attitude toward the website, but this insignificant result may be due to the simplicity and the clear design of Taiwanese websites.

In addition, the impact of the customization dimension on attitude toward the website is negative and significant. This finding is in line with Cockrill et al. (2007), which stated that shoppers may have uncomfortable feelings when encountering

complicated shopping websites. Moreover, when online shoppers consider that a website is too complex, they may feel that the interface as intrusive and distant from them. Many websites aim to combine both organizational and customer information, creating a feeling of being overwhelmed among shoppers. Users often choose a websites with simple layouts in order to better suit their passive behaviors, and so they can easily search for information on a single website (Lai et al. 2014).

Furthermore, the findings also indicate that greater trust and attitude toward a website can lead to higher brand attitude. These results are in line with the Theory of Planned Behavior (TPB). In an online context, the perceived trustworthiness of the Internet itself can generate positive attitudes toward the website and brand. Additionally, trust refers to a salient behavioral belief that influences consumer attitudes about web retailers, and a consumer will undoubtedly prefer to buy from a website and brand they trust.

Third, consumers are more likely to purchase when they have a positive attitude toward the brand and website. Various researchers indicate that brand associations have a positive influence on purchase intentions and the willingness to recommend the brand to others (Hwang et al. 2011). Website trustworthiness and brand attitude will enhance e-WOM intention about the website, and thus the shoppers will share their shopping experiences more enthusiastically with others. The positive attitudes that people have toward a brand affect their current and subsequent shopping activities, leading to the spread of positive e-WOM (Tabbane and Hamouda 2013). Moreover, greater trust in a website provides customers with an opportunity to increase their purchase intention and e-WOM intention (Kim and Park 2013).

Finally, more online shopping experience will enhance positive beliefs and attitudes toward the website. Lai et al. (2014) stated that “the more familiar the environment is to shoppers, the more chances for them to associate their experience with the stored memory”. Furthermore, the majority of Internet users in Taiwan are familiar with different fashion sites and the benefits that can be obtained from shopping online. This means that our findings support the idea that more online purchasing experience raises the requirements for website design. In addition, our findings also indicate that women pay more attention to the appearance of a website than men when engaging in online shopping. In the same way, physical usability and customization are more important for female rather than male consumers.

7 Conclusion

7.1 Academic implications

The results of the current study have confirmed the interrelationships among the research constructs. Although the application of the S–O–R model to the online shopping environment is similar to that seen in most previous studies, some of this work’s conclusions can be used to provide a useful framework for additional exploration of websites as e-servicescapes (Yoon 2012; Wu et al. 2013). This study thus pushes the servicescape paradigm forward, and supports an expanded conceptualization of the term, which remains in line with that outlined in the

initial study by Bitner (1992). Specifically, this study establishes the efficacy of the e-servicescape concept by including the dimensions of aesthetic appeal, usability, customization, and financial security from a Taiwanese perspective. This study also finds that the different e-servicescape dimensions have a significant influence on customer responses to online retailers. Notably, this study points out that the aesthetic appeal of an e-servicescape has the greatest impact on purchase intention and e-WOM intention, and thus the research gaps that motivated this study have been address. Meanwhile, the results for the effects of the e-servicescape dimensions on website trustworthiness showed that trust toward the website represents a generic mechanism through which the focal independent variables of e-servicescapes can positively influence customer responses.

Second, the results of this study clarify the relationship between trust and attitude, and confirm the robustness of the TPB by explaining the influence of website e-servicescape on intention toward make an online purchase and sharing e-WOM. The findings are consistent with previous studies related to website attitude, brand attitude, and purchase intention (e.g., Karson and Fisher 2005). However, more important than confirming the relationships established in the extended DMH for e-servicescape, this article contributes to the literature by providing a better understanding of the process and a detailed examination of how the e-servicescape dimensions occur in an online environment.

Since previous studies have largely ignored the powerful impact of e-servicescape on e-WOM intention, this study tried to address this issue by investigating how e-servicescape elicits trustworthiness and attitude responses, as well as consequently contributes to consumer purchase intention and positive e-WOM intention. To sum up, this study contributes to the literature by finding that the different dimensions of e-servicescape need to be strategically managed and maintained in order to build up trust and positive attitude toward a website.

Finally, the findings with regard to the moderating role of gender provide additional support for psychological theories which claim that males and females have different, gender-based perceptions (Chiu et al. 2005). Moreover, this study provides additional evidence that consumers' previous shopping online experience should be taken into consideration when designing e-servicescape environments.

7.2 Managerial implications

This study offers valuable practical information to online retailers aiming to promote customer purchase intention and encourage e-WOM through website design. As proposed previously in this study, the different e-servicescape dimensions significantly affect customer responses. A notable finding of this work is that aesthetic appeal has the greatest impact on customer responses. This suggests that a more appealing appearance will help consumers to enjoy the online shopping environment. Therefore, professional designers, software architects, and engineers need to emphasize the visual appeal of webpages and optimize the effectiveness of their designs. Aesthetic appeal may be enhanced by the use of color, entertaining features, sounds and so on, and it is essential that online marketing managers work

to ensure that their websites are able to elicit positive emotions and preferences toward the product, brand, and organization as a whole.

Our findings indicate that customization strategies may simply make website interfaces too complicated, and thus deter customers. For instance, some visitors may initially get carried away and add too many items to their customized pages, thus causing the system to crash. Previous bad experiences may then mean that shoppers do not want to invest their time in customizing a webpage, especially for clothing stores. In contrast, non-customizable sites are much simpler to use, and customers will not be worried about accidentally changing their preferences and making things more complicated. Therefore, online retailers need to provide a good default configuration that can be used by all consumers. Retailers can also address this issue by providing a trial version of a customized webpage to shoppers, so they can revert back to the standard page if they do not like it.

Meanwhile, this study also mentions that by improving website safety and privacy level in payment process, retailers can gain consumer trust and form positive attitudes toward their website. Online retailers should establish their stores' brand name, so that any product sold by them is perceived as reliable. Consumers need to know with what they are dealing and they will have the confidence to buy.

In addition, the qualified online trust-attitude relationship suggests that improving website trustworthiness proposes more brand attitude-related outcomes. E-retailers should try to inspire top-of-the-mind awareness for its brands and enhance trust toward its website. They need to design an aesthetic website to position and influence brand images. The study results show that organizations should focus their messages on the core ideas of their product and brand features, because customer will buy products based on their benefits and advantages, not the advertisement. Marketers should also open some social networks platforms, such as Facebook, Twitter, and YouTube in order to encourage more consumers to share their opinions for increasing their purchase intention.

Finally, the effects that gender has on the relationships between the e-servicescape dimensions and trust and attitude toward a website suggests that website designers should put more effort into the appearance of sites if they are aimed at women, as is the case with online stores that sell cosmetics, clothes, or health products. The findings also show that having high levels of shopping experience will positively impact consumer attitudes and beliefs toward a website. Lekszycka (2014) stated that consumers will not buy anything from an unattractive website and will also never revisit it, as they have thousands of online stores to choose from. As such, a professional and visually attractive website is considered more reliable and trustworthy, and thus able to attract more highly experienced users.

7.3 Limitations and future research directions

The study's findings are subject to the following limitations. Firstly, this study originally used aesthetic appeal, layout & functionality, and financial security as three major stimuli that may affect customers' internal responses. However, based on the results of our exploratory factor analysis, the stimulus of layout & functionality was then divided into usability and customization, and the research

framework was changed accordingly. Therefore, the authors suggest that this issue shall be clarified in the future studies. Secondly, although students are appropriate subjects for evaluating websites, they are more homogenous than the general population. Furthermore, the investigation of the current study is limited to a specific website, which obviously limits the generalizability of its findings. In addition, there is a possibility that respondents could already have had positive expectations toward the focal website before participating in our research.

Future research could include comparison and analysis with more websites, as well as adding trustworthiness and attitude as variables. Moreover, future studies may validate the moderator roles of other factors, such as customer characteristics (e.g., age and education) and customer involvement, particularly regarding the potential influence of e-servicescape on website trustworthiness and attitude. Finally, prior studies have explained that culture plays a significant role in an online context (Ganguly et al. 2010), and thus further studies carried out in other countries could deepen our understanding of the moderating role of culture.

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