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Web Consumer Experience (WCX) and Digital Consumer Experience (DCX): Conceptualization & Operationalization of Measurement

Dr. Nina Farisha Isa

INTRODUCTION

In the current online business environment, the use of internet and smart technologies (e.g., smart mobile phones, tablets, wearables etc. have become advances and predominantly use in the society. With consumer becoming more tech-savvy and Internet-savvy (Immonen and Sintonen, 2015), consumer now have the chance to experience efficient services provided by the organizations. Consumers are expecting more targeted and more responsive, from retailers therefore, it is important that retailers assess the real value of the internet and smart technologies in creating new consumer experience (Faroudi et al., 2018). In creating experience through the internet and smart technologies, (Hoffman, Novak and Yung, 1996) highlight the important of flow that arise during online navigation that is triggered by a sequence of responses, which are facilitated by machine interactivity. Thus, online navigation through e commerce should not only based on the marketing mix but also must be based on the marketing web experience. Web experience is a consumer's total impression and expectations about the company e-commerce website that consists of the element's usability, interactivity and aesthetics (Constantinides, 2004). With the rise of smart technologies there have been a shift in the web consumer experience (WCX) behavior but also in digital consumer experience (DCX) (Yu, Seo & Ko, 2021; Faroudi et al., 2018 & Jung; Pantano and Priporas, 2016).

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Web Consumer Experience (WCX) and Digital Consumer Experience (DCX): Conceptualization & Operationalization of Measurement

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I. INTRODUCTION

In the current online business environment, the use of internet and smart technologies (e.g., smart mobile phones, tablets, wearables etc. have become advances and predominantly use in the society. With consumer becoming more tech-savvy and Internet-savvy (Immonen and Sintonen, 2015), consumer now have the chance to experience efficient services provided by the organizations. Consumers are expecting more targeted and more responsive, from retailers therefore, it is important that retailers assess the real value of the internet and smart technologies in creating new consumer experience (Faroudi et al., 2018). In creating experience through the internet and smart technologies, (Hoffman, Novak and Yung, 1996) highlight the important of flow that arise during online navigation that is triggered by a sequence of responses, which are facilitated by machine interactivity. Thus, online navigation through e commerce should not only based on the marketing mix but also must be based on the marketing web experience. Web experience is a consumer's total impression and expectations about the company e-commerce website that consists of the element's usability, interactivity and aesthetics (Constantinides, 2004). With the rise of smart technologies there have been a shift in the web consumer experience (WCX) behavior but also in digital consumer experience (DCX) (Yu, Seo & Ko, 2021; Faroudi et al., 2018 & Jung; Pantano and Priporas, 2016).

For many brands today, multichannel touchpoints in the digital marketplace take a significant portion of the total encounters with a brand or products (Rudy, Harjanto Prawobo, Asnan

Furinto and Mohammad Hamsal, 2021; Kimiagari, and Asadi Malafe, 2021; Zhang, N., and Yuan, Q. J., 2021). All brands will have to think about the experience, they are delivering not only in real life but in the realm of binary, bits, and bytes. Maximizing and leveraging exceptional experiences (i.e., WCX and DCX) across new and ever-fluid communication channels will be a primary goal of marketers moving forward. However, the phenomenon of a consumer simply deciding to leave an e-commerce transaction has come to be referred to as shopping cart abandonment. Thus, an engaged consumer is not always guaranteed to buy from e-commerce website. With many people shopping online regularly or looking for goods and/or services to buy online, shoppers find themselves in a state of indecision. Not only do they admit to spending time researching, but shoppers also feel overwhelmed by the number of options they encounter when browsing. For example, when they could not find a coupon code that involves consumer experience based on the interactivity of the website interface. Some of the consumers are concerns about the payment security that involves the elements of usability.

Nevertheless, as the theoretical and empirical work has emerged in different directions, the theoretical roots of online consumer experience have grown more ambiguous in relation to e commerce buying decision and behavior (Klaus, 2013; Hoffman and Novak, 2009; Demangeot and Broderick, 2006). By identifying the significant antecedents of online consumer experience, the findings of this paper will add to the literature by proposing a theoretical basis for online consumer experience within the e-commerce buying decision

frame. Thus, it will also provide a valuable tool for practical reasons, for both academics and practitioners regarding how to measure and evaluate online consumer experience.

This study seeks to bring together the extant work on online consumer experience and e-commerce buying decision in order to advance the questions of: (i) What are the core conceptual elements of online consumer experience within the e-commerce buying decision frame? (ii) What are the underlying elements of online consumer experience within the e-commerce buying decision framework? and, (iii) How can we integrate insights from these questions to develop an empirical measurement approach that is faithful to the theoretical concept of online consumer experience within the e-commerce buying decision frame? Our exposition begins with a systematic review of the online consumer experience and e-commerce buying decision literature. This paper describes a step-by-step approach to develop the constructs of online consumer experience within the e-commerce buying decision frame.

The paper begins with a discussion on the concept and definition of online consumer experience. Next, this paper discusses the development of its constructs and measurement items. Motivated by and using constructs extracted from the literature review, this study derives an integrated conceptualisation of online consumer experience and employs it in the development and testing of a measurement for online consumer experience within the e-commerce buying decision frame. Finally, this paper concludes with a discussion and conclusion.

II. NEW PERSPECTIVES OF ONLINE CONSUMER EXPERIENCE THEORY ON BUYING DECISION

The online consumer experience can occur in various online activities including but not limited to e-commerce (Bridges E and Florsheim R, 2008), e-learning environments and online gambling (Hoffman DL, Novak TP, 2009). In the e-commerce context, online consumer experience can be seen as the extent to which consumers are engaged in interacting with the brand-related

stimuli. As it becomes harder for the brands to engage new generation consumers, the importance of online consumer experience becomes more prevalent. Various studies on online consumer experience in recent years can be shown as an indicative of increased attention on the phenomenon (Brodie RJ, Ilic A, Juric B, Hollebeek, 2013; Shim SI, Forsythe S, Kwon WS., 2015). Novak, Hoffman and Duhachek (2003) argue that consumer experience is a useful construct for describing and explaining human computer interactions. According to Novak, Hoffman and Duhachek (2003), consumers actually experience flow based on their web experience that investigate into consumer's goal-oriented and experiential-oriented behaviours.

Hoffman and Novak (1996) propose a model in context of online consumer navigation using 'flow', a psychological construct. The construct was manifested through a feeling of seamlessness during navigation, intrinsic enjoyment, and lack of self-consciousness. (Hoffman and Novak, 1996). Rose et al. (2012) proposed the components of online consumer experience: cognitive experience and affective experience along with its antecedents and outcome. Web experience is a consumer's total impression and expectations about the company e-commerce website that consists of the element's usability, interactivity and aesthetics (Constantinides, 2004).

According to Constantinides (2004), web experience is a combination of online functionality, information, emotions, cues, stimuli and products or services and/or a complex mix of elements that extend beyond the 4Ps of traditional marketing mix. The web experience embraces elements like searching, browsing, and finding, selecting, comparing and evaluating the information as well as interacting with the online firm. Constantinides (2004) describes web experience as the consumer's total impression about regarding the online company, not only addressing the consumer's product needs and expectations but also assisting the consumers through the steps of the buying process which is likely to influence the buying decisions of the online consumer. Constantinides (2004) also

proposes web experience to be the major parameter of consumers' influences for any e-commerce site and the consumer's' whole overall perception about regarding the online company. Meanwhile, for traditional businesses that are expanding their business to include Internet presence, the quality of online experience is the issue that requires special attention. For instance, poorly designed and dysfunctional e-commerce sites can be potential threat for the online portion of the business online. Novak, Hoffman and Duhachek (2003) argue that flow is about consumer's goal-oriented and experiential-oriented behaviour in online environments. Another closely related construct to online consumer experience is the online shopping experience which is a holistic and subjective process resulting from interactions between consumers, shopping practices (including tools and routines) and the online environment (e.g., shopping websites, online consumer reviews, and social media) (Trevinal and Stenger, 2014). By analysing studies on online experience and shopping experience, several facets of online shopping experience can be driven such as affective, cognitive (Hoffman and Novak, 2009; Pentina, Amialchuk, and Taylor, 2011; Verhoef et al., 2009), physical, sensorial (Babin and Attaway, 2000; Novak et al., 2000), value, rituals, symbols (Holbrook, 2006; Mathwick, Malhotra, and Rigdon, 2001; Nambisan and Watt, 2011), 42 social (Borges, Chebat, and Babin, 2010; Pentina et al., 2011), and flow (Hoffman and Novak, 2009; Mathwick and Rigdon, 2004).

III. ONLINE CONSUMER EXPERIENCE: CONCEPT AND DEFINITION

This study attempts to extend the knowledge of online consumer experience (WCX) from flow theory in which WCX is the activity of consumers' total impression based on interactions and transactions with combinations of notions, emotions and impulses that caused by the designs and other marketing elements of the online presentation or in other word the e-commerce website and application (Constantinides, 2004;2005). The concept of online consumer experience (WCX) by Constantinides (2004)

defines web experience as online consumers' total impression of getting the e-commerce website information that includes a combination of online functionality, information, emotions, cues, stimuli and products or services that extend beyond the 4Ps of traditional marketing mix. Constantinides (2004) describes that web experience is not only the consumer's total impression about regarding the e-commerce website but it is also addressing the consumer's product needs and expectations as well as assisting the consumers through the buying process steps of the buying process which are likely to influence the buying decision of the online consumers. The web experience embraces elements like searching, browsing, and finding, selecting, comparing and evaluating the information as well as interacting with the online firm.

Lorenzo, Oblinger and Dziuban (2007) suggest that website navigation and online product presentation are the crucial elements to user-friendly e-commerce website and have significant effects on the shopper's' first impressions of online vendors. Furthermore, Ha and Stoel (2012) denotes that in online consumer web experience, element hedonic elements are related to experiential stimuli. The experiential stimulus is focused on the experiential online shopping motives that where consumer seeks benefits from online outlet selections rather than shopping the given product. For instance, the enjoyment that the consumers experience is actually when they join the brand membership website or the pleasure that they obtain during searching product information. This is similar to Wang and Fesenmaier (2004) findings where, the hedonic driver factor motivates consumers to increase participations more and allocate occupying their leisure time in the with web experience activities. Similar studies have also indicated that perceived enjoyment as an intrinsic motivation that has significant impact on a user's technology acceptance especially for hedonic systems (Davis et al. 1992; Koufaris, 2002; Van der Heijden, 2004). They uncover the fact that if when using a computer, laptop or smartphone can bring generate them fun and pleasure, users will be intrinsically motivated to adopt it the habit.

As noted above, web and digital consumer experiences often has rich entertainment functions and users can will obtain great enjoyment when utilising e-commerce website. Constantinides (2004) points out factors that consumers' experiences from the websites is consist of three main factors, namely: (1) functional, (2) content and (3) psychological. Constantinides and Geurts (2005) further define functional category as the online experience of the functions, easy to ease of usage and search mechanisms as well the interactive part of the website. Meanwhile, content category is the factors that the website's offerings in terms of their offer aesthetics, tangibles and attractiveness direct to the consumers. Lastly, the psychological category is denote the website's credibility to communicate and ensure users' of the vendor's' integrities in order to persuade attract and maintain consumers. In this study, online consumer experience (WCX) is defined as the online web consumer experience (WCX) that consist of combinations of online functionality, information, emotions, cues, stimuli about the products or services that extend beyond the 4Ps of traditional marketing mix (Constantinides et. al., 2005). As such, this study attempts to separate and derive a measurement for online consumer experience (WCX) in retail context. Addressing the measurement of consumer experience, from different perspectives is important as it represents a shift in our understanding from the managerial control of some 'thing' (e.g., retailing strategy) (Zolkiewski, et al., 2017). The online consumer experience scale is constructed to cover the domain of consumer experience in a retail setting. For this study, the domain of online consumer experience (WCX) is considered as a component that involves one's cognitive and affective system with the generation of moods, feelings, and emotions as identified by Lorenzo et. al. (2007). As such, this study attempts to examine the dimensionality of online consumer experience from the structural dimension approach (Constantinides, 2004, Constantinides et al. 2005 and Lorenzo et al. 2010). Thus, the consumer web experience embraces elements that include the following dimensions of (1) usability web experience; (2) interactivity web experience; and (3) aesthetic web experience.

Online consumer experience has differences between handheld devices (smartphones and tablets) and PCs (laptops and desktop computers). Matarazzo et al. (2021) demonstrates the importance of including hedonic elements in the design of web pages (accessible from PCs). On the other hand, apps (accessible from handheld devices) should facilitate concentration and encourage the user's time distortion to reach the flow state, whereby e-commerce companies are designing their online platforms. The impact of digital transformation on consumer value creation and highlighted that digital channel contribute to the innovation of an organisation's business model. Such transformation also helps to create new distribution channels and new ways to create and deliver value to consumer experience. Additionally, digital transformation impacts technological market expansion when organisations are seen as embracing digital innovation (Jafari-Sadeghi et al., 2021). Such conclusions and arguments indicate that the enhanced use of digital technologies increases an organisation's innovation performance by providing greater digital consumer experience (Usai et al., 2021). Another study (Jessen et al., 2020) empirically demonstrated the sequential mediation process connecting the use of technological advances with consumer engagement, consumer creativity and anticipated satisfaction. Additionally, it has been emphasized that consumer involvement plays a central role in explaining the intention to participate in online buying (Sharma and Klein, 2020). Advances in mobile technology and its adoption by many consumers have rendered it essential for firms to redesign interaction and service delivery features to achieve optimum online user experience. Survival in today's competitive e-commerce environment where the competitor is only one click away means that firms must find ways to provide consumers with a unique experience much more than low prices. E-commerce companies have recognized the need to focus on providing a compelling shopping experience. Studies on consumer experience are often conducted on separate channels, online or offline only. Research on consumer experience involving

web consumer experience (WCX) and digital consumer experience (DCX) has not been widely studied.

3.1 Conceptualisation of Online Consumer Experience within the E-commerce Buying Decision Frame

3.2 Core Dimensions of Web Consumer Experience within E-commerce Buying Decision Frame

A review of the extant literature revealed that there are three main measures of web consumer experience (WCX): (i) usability of web experience, (ii) interactivity of web experience and (iii) aesthetic of web experience (Constantinides, 2004; Constantinides et al., 2005 and Lorenzo et al., 2010).

3.2.1 Usability of Web Experience

Nah and Davis (2002) define usability as “the ability to find one’s way around the Web, to locate desired information, to know what to do next, and, very importantly, to do so with minimal effort. Central to this idea of usability are the important concepts of ease of navigation and search” (Nah and Davis, 2002, p. 99). Usability is considered as an important quality criterion of information systems (Preece et al., 1994) and Web sites (Osterbauer et al., 1999). Elements enhancing the Web site usability are the convenience of using the site, the loading speed of the pages, the information structure etc. Creating a user-friendly Web site not only requires high quality, state-of-the-art technology but also thorough knowledge of the needs and characteristics of the potential Web site user. Usability of Web sites has been constantly improving over the years, not only because online firms and Web designers gain more experience but also as a result of technological developments. The usability components include (1) Convenience; (2) easy site navigation; (3) Site findability and accessibility and (4) Site speed. Prior studies indicate that convenience is a prime motivator for online consumer to stop and interact with online vendors. Consumer associate convenience with easy and fast information browsing, shopping and settling of the online transaction. On the other

hand, site navigation, information architecture and search facilities/search process, whereby online consumer expect and easily accessible information. The usability component of site navigation also includes search engines that provide fast and reliable results helping consumers to quickly locate information in the Web site. Most online consumers are searching for products and services by means of search engines and online directories thus it is very important that the e commerce website apply a consistent search engine strategy so that online consumers can easily find the site. Web sites must be furthermore accessible by users making use of different types of Web browsers. Moreover, online consumers expect fast loading Web pages (Cockburn and McKenzie, 2001). Flow theory provide a balanced approach that is necessary so that Web sites remain simple to use and secure at the same time.

3.2.2 Interactivity of Web Experience

The interactivity of Internet allows online vendors to enhance the Web experience by presenting the consumer with more personalized services and facilitating interaction with other online users willing to share experiences and suggestions. From the flow theory perspective, interactivity, therefore can be seen as underpinning two of the basic elements namely personalization and networking. Interactive elements are contributing to a positive consumer experience by reducing uncertainty during the online transaction and the cognitive dissonance afterwards. Elements enhancing interactivity are facilities allowing interaction with vendors in case consumers have questions or difficulty to use the site, online helpdesks for technical assistance or support. Networking and the possibility of establishing contacts with other users by means of active or passive interfaces (user’s forums, chat-rooms or bulletin boards) are also factors enhancing the Web site interactivity. The interactivity components are divided in two categories: (1) Interactivity with the online vendor. (2) Interactivity with other Web users.

Consumer service/after sales service online, interaction with company personnel and

customization are components of interactivity between consumer and online vendor. online consumers expect next to convenient shopping and support in case of problems with products or services purchased. Good organized online or offline helpdesks, efficient reverse logistics, quick response to e-mail complaints and inquiries are some of the issues where marketers and Web designers must focus their attention. As in the case of usability, good knowledge of consumer profiles and needs are of vital importance for the designers of these online services. More research is necessary in order to assess the exact role and effects of such elements as well as the trends in this area.

3.2.3 Aesthetic of Web Experience

According to Arnould and Thompson, (2005) consumers perceive aesthetic were dominated by the consumer sociocultural and ideological factors. Consumers will experience an object aesthetic if it meets the meanings and sociocultural patterns which consumers attribute to a sensory pleasing object. Aesthetic experience relates to the pleasure consumer experiences by interacting with an artistically beautiful and pleasing appearance of a content on e-commerce (Lavie and Tractinsky, 2004). This aesthetic experience affects the level of commitment, consumers show with the content on the e-commerce. More engagement and/or commitment occurs when consumers have an intense aesthetic experience due to visually appealing content (Syrdal and Briggs, 2018). Aesthetic experience can be delivered by creating a content which is dynamic, colourful (Fortin and Dholakia, 2005), pleasant, and animated (Goldfarb and Tucker, 2011; Goodrich, 2011). Previous studies found that aesthetic content on websites can result in more clicks on the content (Cho, 1999; Lohtia et al., 2003) resulting in a positive attitude towards a website (Coyle and Thorson, 2001; Fortin and Dholakia, 2005). Flow theory research shows that consumers use market-produced objects such as the content to experience realities linked to aesthetics (Holt, 2002; Joy and Sherry Jr, 2003; Schau and Gilly, 2003) and this may culminate into e-commerce buying decision behavior.

3.3 Digital Consumer Experience (DCX)

The nature of how communication flows has undergone momentous changes in the past three decades with the widespread penetration of the Internet. As an apparent results, the number of hours spent on mobile phones has been increasing steadily, which boosted the volume of digital consumer experiences for shoppers in making online buying decision (Lee and Kim, 2019). The concept of digital consumer experience (DCX) is defined as the degree to which consumer total impression of usability, interactivity and aesthetics of the e-commerce websites using mobile technologies (i.e., smartphone, tablet and mobile apps) based on their experiences and exposures in the mobile technologies. Several studies found that digital mobility that keep consumers nearby and connectivity are shaping the field of e-commerce to leverage the digital environment to meet the expectations of their consumers especially for brand and businesses in mobile commerce (Sukardi Silalahi and Popy Rufaidah, 2017; Bilgihan et.al, 2016). Many brands have also failed to integrate mobile commerce, social media and e-commerce. Integrated technology use helps with consumer personal experience, including such digital consumer experience as the use of sites, cellular devices, or cellular applications (Fatma, S., 2014). Digital technologies transform a company's consumer-related operations, and thus the company needs to find effective digital business strategies by using digital technologies (Setia, Venkatesh, and Joglekar, 2013). New technologies spur a company to remodel the way it interacts and builds relations with consumers (Straker and Wrigley, 2016). The development of Internet technologies and the increase in the number of Internet users require companies to devise diverse strategies to retain and increase consumers, especially now that ecommerce has become an indispensable part of everyday life (Liu, and Wei, 2003).

Digital consumer experience is a new construct that still focusing on consumer experience (Pine and Gilmore, 1998; Teixeira et al., 2012) or service experience (Klaus and Maklan, 2012; Dube and Helkkula, 2015). Silalahi and Rufaidah (2017)

modified the dimensions of the research undertaken by Klaus (2015) to obtain a measurement of digital consumer experience. Its measurements of digital consumer experience are digital service experience, digital image experience, digital touchpoint experience, and digital broadband experience. This type of technology is selected due to its' similar characteristics such as low cost or subscription based, thin infrastructure, ease of use, easy to deploy and these technologies can be adopted on demand (Buyya et al. 2009; Delen and Demirkan 2013; Son et al. 2014). In addition, this technology is agile, independent device and location, easy to maintain, multi-tenet and productive. Moreover, searching for technology support information on a smartphone is known as digital consumer experience (Harvard Business Review, 2016; Chong et al. 2012; López Nicolás et al. 2008; Sheng et al. 2005). Harvard Business Review (2016) states that digital consumer experience is consumer experience through a digital interface (i.e., tablet or smartphone). Moreover, digital consumer experience is related to the digital interface and presentation of electronic word of mouth reviews that involve external links and graphics (Borowski, 2015; WTO, 2015). Researchers and practitioners are eager to understand the factors that contribute to this compelling digital consumer experience as online shopping and consumer connections with electronics providers have changed dramatically (Mehmet A. Orhan and Caleb MacIlvaine, 2014). More marketers recognized the need to for consumer to interact in several digital touchpoints where consumer experience they can reach people with much ease effectively and efficiently, not only with consumers but as well as with potential ones. For many brands today, multichannel touchpoints in the digital marketplace take a significant portion of the total encounters with a brand (Rudy, Harjanto Prawobo, Asnan Furinto and Mohammad Hamsal, 2021). This requires a shift where all brands will have to think about the experience, they are delivering not only in real life but in the realm of binary, bits, and bytes.

The marketing experience will necessitate an automatic flow that utilizes the full realm of time,

space, and matter but also no-time (autonomous), no-space (virtual), and no-matter (bits) (Pine and Korn, 2011). Maximizing and leveraging exceptional experiences across new and ever fluid communication channels will be a primary goal of marketers moving forward. Pine and Gilmore (1998) argue that the company's products and services must act as a media for consumer experience. Companies must be able to give consumers exceptional value. The digitalization has been the main focus of the business strategies, including telecommunication industries. Therefore, the purpose of this study is identified and operationalize the digital consumer experience concept based on flow theory by studying relevant literature on consumer behaviour in retail contexts (Bridges E, Florsheim R, 2008; Forsythe S, Kwon WS, 2015). Creating and maintaining online channels that evoke positive emotions and provide engaging digital consumer experiences will help companies gain a competitive advantage. Based on flow theory, the design of the applications in smartphones, android, PDA and handheld technologies must be both useful and fun as part of any digital consumer experience. The design must be dynamics, i.e., interactivity that affect users, and aesthetics make the experience fun and engaging. Easy positioning of websites/apps, ease of use, perceived utility, hedonism and utilitarian features, perceived enjoyment, personalization, and multi-device compatibility are prerequisites for unifying digital consumer experiences.

3.4. Elements and Measurements of Web Consumer Experience (WCX) and Digital Consumer Experience (DCX) within E-commerce Buying Decision Frame

Web and Digital Consumer Experience buying decision can be promoted through Online Consumer Experience (WCX) initiatives by focusing on three components: usability, interactivity and aesthetic. In this stage, eighteen (18) items are identified as the appropriate measures of web consumer experience within the e-commerce buying decision frame. Table 1 shows the dimensions and items of measurement. The chosen items are adapted with respect to the concept of online consumer experience (WCX) from the literature as discussed.

Table 1: Elements and Measurements of Web Consumer Experience (WCX) and Digital Consumer Experience (DCX) within the CSR Frame

| Element | Definition | Measures |
|---------------|---|--|
| | | <i>E-commerce website should....</i> |
| Usability | Degree to which the consumer perceives the e-commerce website is easy to use and convenience for consumer to search, access and transact (e.g: responsiveness, navigation, download delay) with minimal effort and time based on their experience and exposure of the website | <ul style="list-style-type: none"> ➤ easy to access at any time I want. ➤ navigational aids that are intuitively logical, easy to understand with minimal effort and time. ➤ classification that is easy to follow with minimal effort and time. ➤ convenient to search, access and transact e-commerce activities with minimal effort and time. ➤ variety of search options about the product (i.e., filtering based on price, color and specification) with minimal effort and time ➤ user friendly as the consumer spent with minimal effort and time |
| Interactivity | Degree to which the consumer perceives the e-commerce website allows consumers to personalize, customize and interact with the content and the website based on consumer experience and exposure of the website. | <ul style="list-style-type: none"> ➤ good keyword search facility that allows me to interact with the product ➤ different interactive way to view the product (i.e., text, audio, moving image, graphic, sound) ➤ interactive platform (i.e., text, audio, moving image, graphic, sound) that helps me to compare products and prices. ➤ interactive customization of the site's content that meet my personal needs and specification. ➤ interactive informational link about the product ➤ multimedia technology such as audio and video that excite much interest towards the product and interact with the content of the product. |
| Aesthetic | Degree to which consumer perceives the website as being visually aesthetic that evoke pleasure based on their experience and exposure of the website. | <ul style="list-style-type: none"> ➤ fresh and original design that makes me wanting to explore the website ➤ visually attractive appearance that creates much pleasure for me when exploring the website. ➤ innovative and creative that makes the website fun to explore. ➤ visually classy that is intriguing to explore professional that makes the website fascinating to explore. ➤ visually presentable and enjoyable to explore. ➤ appealing in terms of design and appearance that suits my style |

IV. PSYCHOMETRIC VALIDITY OF WEB CONSUMER EXPERIENCE (WCX) AND DIGITAL CONSUMER EXPERIENCE (DCX) WITHIN E-COMMERCE BUYING DECISION FRAME

This section identifies and validates the significant operational measures of web consumer experience (WCX) of online buying decision. A similar process for developing and testing each construct was adopted. The first step was a literature review to determine how other researchers had operationalised the related constructs. Where possible, the pre-existing instrument was considered, developed, and adapted from existing scales within the online consumer experience (WCX) and buying decision behaviour literature, as shown in Table 1. These multi-item measures for each construct have been undertaken to the issues surrounding the web and digital consumer experience, in the context of e-commerce buying decision frame to generate and purify the scale items and data analysis procedure. Section 4.1 provides the pre-testing of the WCX and DCX measures. Section 4.2 discusses the Item Reduction and Scale Dimensionality.

4.1. Pre-testing of the measures

Following the guideline of Churchill (1979), item was generated from existing online consumer experience literature from various discipline. At the first stage, a pool of eighteen items of WCX items was created consisting of 6 items web experience of usability, 6 items of web experience of interactivity and 6 items of web experience of aesthetics and 6 items for DCX as shown in Table 2 below. The same procedure for specify the domain WCX construct is used to specify the DCX construct Following Hollebeek et al. (2014) and Brakus et al. (2009), 24 items were assessed for their content validity with seven academic experts and eight panel of online consumers. At the stage of item screening, it is important to have items judged for their suitability (Hardesty and Bearden, 2004), thus establishing an initial pool of items which possesses content validity (Churchill, 1979). The final measurement items (after the pre-test) are shown in Table 2. The items were measured using five-point Likert scales anchored by (1) strongly disagree to (5) strongly agree.

Table 2: Elements and Measurements of Web Consumer Experience and Digital Consumer Experience within the E-commerce Buying Decision (revised)

| Element | Measure | |
|--|---------|--|
| <i>Web Consumer Experience (WCX) must include...</i> | | |
| Usability | USA1 | easy to access at any time I want. |
| | USA2 | navigational aids that are intuitively logical, easy to understand with minimal effort and time. |
| | USA3 | classification that is easy to follow with minimal effort and time |
| | USA4 | convenient to search, access and transact e-commerce activities with minimal effort and time. |
| | USA5 | variety of search options about the product (i.e., filtering based on price, color and specification) with minimal effort and time |
| | USA6 | user friendly as the consumer spent with minimal effort and time |
| Interactivity | INT1 | good keyword search facility that allows me to interact with the product |
| | INT2 | different interactive way to view the product (i.e., text, audio, moving image, graphic, sound) |

| | | |
|-----------|------|--|
| | INT3 | interactive platform (i.e., text, audio, moving image, graphic, sound) that helps me to compare products and prices |
| | INT4 | interactive customization of the site's content that meet my personal needs and specification |
| | INT5 | interactive informational link about the product |
| | INT6 | multimedia technology such as audio and video that excite much interest towards the product and interact with the content of the product |
| Aesthetic | AES1 | fresh and original design that makes me wanting to explore the website |
| | AES2 | visually attractive appearance that creates much pleasure for me when exploring the website. |
| | AES3 | innovative and creative that makes the website fun to explore. |
| | AES4 | visually classy that is intriguing to explore professional that makes the website fascinating to explore. |
| | AES5 | visually presentable and enjoyable to explore. |
| | AES6 | appealing in terms of design and appearance that suits my style |

| Element | Measure | |
|--|---------|--|
| <i>Digital Consumer Experience (DCX) must include...</i> | | |
| Digital Consumer Experience | DCX1 | easy to access at any time I want. |
| | DCX2 | navigational aids that are intuitively logical, easy to understand with minimal effort and time. |
| | DCX3 | classification that is easy to follow with minimal effort and time |
| | DCX4 | convenient to search, access and transact e-commerce activities with minimal effort and time. |
| | DCX5 | variety of search options about the product (i.e., filtering based on price, color and specification) with minimal effort and time |
| | DCX6 | user friendly as the consumer spent with minimal effort and time |

4.2 Stage 2: Item Reduction and Scale Dimensionality

A series of exploratory and confirmatory factor analysis was performed in this study to operationalise the online consumer experience (WCX) and its three dimension together with digital consumer experience (DCX) construct. Factor analysis was undertaken to determine the

factor structure for each dimension of WCX construct together with DCX construct (Hair et al., 2006). In other words, factor analysis helps in identifying the smallest number of hypothetical constructs that can parsimoniously explain the covariation observed among a set of observed variables (Watkins, 2018). Stage 2 also help in assessing the dimensionality and psychometric

properties of the WCX and DCX scales in particular, the three dimensions of WCX construct.

4.3. Pilot test of the measures

The next stage is to pilot test the measures using participants whose background was similar to the target population of the final study. The primary aim of this test was to explore the underlining theoretical structure and to ensure that the various measures demonstrated the appropriate levels of reliability and validity. Fifty subjects working in one of the faculties at a university were selected using convenience sampling to evaluate the measures of employee social protection. Forty-five completed and usable responses were used to test the psychometric validity of the measure. Exploratory factor analysis (EFA) was performed to identify the structure of the relationship between the variable and the respondent. This study used an EFA with principal axis factoring extraction and varimax rotation to extract factors predicting employee

social protection within the CSR frame. In addition, a reliability test was evaluated by assessing the Cronbach alpha using the guideline of Nunnally (1978) of 0.70 and above.

V. RESULTS

5.1 Exploratory Factor Analysis – Web Consumer Experience (WCX) and Digital Consumer Experience (DCX) Construct

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.56, and Bartlett’s test of sphericity was significant ($p < .0001$), indicating appropriate relationships among items to conduct a meaningful EFA. The communalities for all items were range 0.40 – 0.70 (Costello and Osborne, 2005). All eighteen items have factor loadings of between 0.533 and 0.897. Based on eigenvalues greater than one, three components were successfully extracted with Component 1 representing usability (6 items), Component 2 representing interactivity (6 items), and Component 3 representing aesthetic (6 items).

Table 3: Presents the factor loadings from the EFA of each factor

| Construct | Item No. | Items | Loadings |
|---------------|----------|--|----------|
| Usability | Usa1 | easy to access. | 0.865 |
| | Usa2 | easy to understand | 0.857 |
| | Usa3 | easy to follow | 0.847 |
| | Usa4 | convenient to search, access and transact | 0.881 |
| | Usa5 | variety of search options | 0.845 |
| | Usa6 | is user friendly | 0.817 |
| Interactivity | Int1 | easy to interact | 0.825 |
| | Int2 | many different interactive ways to view the product (i.e., text, audio, moving image, graphic, sound). | 0.839 |
| | Int3 | provide interactive platform | 0.867 |
| | Int4 | provide an interactive customization | 0.783 |
| | Int5 | provide interactive informational link | 0.838 |
| | Int6 | provide multimedia technology content of the product. | 0.794 |
| Aesthetic | Aes1 | has fresh and original design that makes | 0.828 |

| | | | |
|-----------------------------------|------|--|-------|
| | | me wanting to explore the website | |
| | Aes2 | has visually attractive appearance that creates much pleasure for me when exploring the website | 0.841 |
| | Aes3 | fun to explore | 0.843 |
| | Aes4 | suits consumer style | 0.754 |
| | Aes5 | visually presentable and enjoyable to explore. | 0.814 |
| | Aes6 | very appealing and suits my style | 0.726 |
| Digital Consumer Experience (DCX) | De1 | Application easy to search, access and interact. | 0.857 |
| | De2 | Application content have adequate interactivity platform to search, access and transact e-commerce activities even through mobile technologies. | 0.920 |
| | De3 | Application content is relevant and consistent | 0.916 |
| | De4 | Application content is very appealing in term of design | 0.894 |
| | De5 | Application design attractive and presentable is fun, enjoyable and fascinating to browse and explore even through mobile technologies. | 0.849 |
| | De6 | Application provides an interactive customization of the site's content that meet my personal needs and specification and respond to my request very quickly | 0.884 |

i) Correlation matrix

Factoring is helpful when there are large correlations between variables, i.e., around the range of 0.70, which will suggest there is enough shared variance that warrants examination (Nunnally and Bernstein, 1994). On the other hand, Tabachnick, Fidell, and Ullman (2007) suggest that correlation must be 0.30 or above which will suggest a strong relationship between variables. Further, the determinant score of 9.97 indicated an absence of multicollinearity as it was above 0.00001 (Yong and Pearce, 2013).

ii) KMO and Bartlett's Test

KMO measures correlations between variables and is a measure of the common variance between the items (Beavers et al., 2013). The KMO

value ranges from 0 to 1 where a value of 0.50 is suitable for factor analysis (Williams, Onsmann, and Brown, 2010; Yong and Pearce, 2013); however, a value of > 0.90 is considered suitable (Kaiser, 1974). In this study the results revealed a KMO value of 0.56 which is considered suitable for factor analysis (Beavers et al., 2013; Kaiser, 1974). The KMO value means that there is a distinct and reliable factor which can be extracted from the data (Yong and Pearce, 2013).

iii) Communalities

Communality refers to the proportion of variance in the measured variable accounted for by the common factors (Fabrigar et al., 1999). Communalities are deemed high if they are 0.80 or greater (Velicer and Jackson, 1990); however,

communalities in the range of 0.40 to 0.70 are acceptable (Costello and Osborne, 2005). All of the initial and/or extraction communalities were in the acceptable range of more than 0.40. Thus, suggesting a linear relationship among variables. All of the items had a communality within the range of 0.40 to 0.70 and no item was dropped in future analysis (Costello and Osborne, 2005).

iv) Dimensionality assessment: Eigen values

Eigenvalue, thus, helps in determining the dimensionality of the scale and simplifying the

factor structure. The results of EFA reveal that the variance of the first factor was 32.77 percent of the variance of all the variables. The first three factor represented 61.28 percent of the variance of all the variables and have an eigenvalues more than 1. According to Kaiser’s criterion, all factors that are above the eigenvalue of 1 should be retained. This suggested the presence of a three-factor structure (Kaiser, 1960) as shown in Table 4.

Table 4: Eigenvalue of the Construct

| Total Variance Explained | | | | | | | Rotated Component Matrix | | | |
|--------------------------|---------------------|---------------|--------------|-----------------------------------|---------------|--------------|--------------------------|-----------|--------|--------|
| Component | Initial Eigenvalues | | | Rotation Sums of Squared Loadings | | | | Component | | |
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | | 1 | 2 | 3 |
| 1 | 8.691 | 48.285 | 48.285 | 8.691 | 48.285 | 48.285 | 1 | 1.000 | -0.144 | 0.001 |
| 2 | 6.332 | 35.180 | 83.465 | 6.332 | 35.180 | 83.465 | 2 | -0.144 | 1.000 | -0.066 |
| 3 | 2.976 | 16.535 | 100.000 | 2.976 | 16.535 | 100.000 | 3 | 0.001 | -0.066 | 1.000 |

v) Pattern Matrix

As oblique rotation was used, the factor pattern matrix was employed to identify the factor solution (Yong and Pearce, 2013). Most studies report the results of the pattern matrix when oblique rotation is used (Hair et al., 2006). Pattern matrix presents values that indicates the relationships between the factor and the item when other factors’ variance is removed (Beavers et al., 2013).

Pattern matrix provided the isolated items with high loadings on a specific factor (Williams et al., 2010). Hence, the pattern matrix facilitated in identifying the factor solution with items loading highly on specific factors. The decision to retain or reject any item was also made based on the result of the pattern matrix.

An examination of the pattern matrix reveals that a large number of variables had factor loadings greater than 0.50 indicating an adequate number of strong loaders (Costello and Osborne, 2005). Hair et al. (2006) consider items with loading greater than 0.50 is important for practical significance. The pattern matrix produces a simple structure solution with a single high loading for each item on only one factor (Hair et al., 2006); thus no item were removed based on the result. Consequently, the EFA rendered a 3 factor of WCX construct. Table 5 present an overview of the results of the pattern matrix. Furthermore, the factor plot revealed the items clustered together in separate rotated factor spaces, indicating that clustered items are correlated and represent single factor as shown in Table 5 the propose WCX items loaded onto three factors.

Table 5: Pattern Matrix- 18-Item WCX Construct

| Pattern Matrix | Factor | | |
|----------------|--------|-------|-------|
| | 1 | 2 | 3 |
| | Usa1 | 0.000 | 1.000 |
| Usa2 | 0.000 | 0.000 | 1.000 |
| Usa3 | 1.000 | 0.000 | 0.000 |
| Usa4 | 0.000 | 1.000 | 0.000 |
| Usa5 | 1.000 | 0.000 | 0.000 |
| Usa6 | 0.000 | 1.000 | 0.000 |
| Int1 | 1.000 | 0.000 | 0.000 |
| Int2 | 0.000 | 1.000 | 0.000 |
| Int3 | 1.000 | 0.000 | 0.000 |
| Int4 | 0.000 | 1.000 | 0.000 |
| Int5 | 1.000 | 0.000 | 0.000 |
| Int6 | 0.000 | 1.000 | 0.000 |
| Aes1 | 1.000 | 0.000 | 0.000 |
| Aes2 | 0.000 | 0.000 | 1.000 |
| Aes3 | 1.000 | 0.000 | 0.000 |
| Aes4 | 0.000 | 1.000 | 0.000 |
| Aes5 | 0.000 | 0.000 | 1.000 |
| Aes6 | 1.000 | 0.000 | 0.000 |

Extraction Method: Principal Component Analysis.
 Rotation Method: Oblimin with Kaiser Normalization.
 a. Rotation converged in 3 iterations.

Exploratory Factorial Analysis (EFA) findings have been summarised in Table 5. EFA suggests a three-factor, 18-items of WCX construct. Overall, all the factor loadings were statistically significant with factor loadings greater than 0.70 in each of the factor.

The findings of EFAs revealed a three-factor structure of WCX construct. All items loaded on their respective factors with suitable factor loadings. None of the item were deleted. Overall,

all of the items, indicated some of the 18 items to be improved, some of the items was rephrase and rewords with the supervisor and send for the academic experts, friends and postgraduate students to meet the requirement of the three factors of WCX construct. Thus, factor 3 which is aesthetic web experience is acceptable because of the result from the pre-test shows that the variables is important and still maintain in WCX dimension.

Next, the reliability statistic of the items is assessed to find the internal consistency of all the dimensions of the WCX construct.

5.2 Reliability analysis of WCX and DCX construct

Establishing reliability is an important part of ensuring construct validity (Cronbach, 1951, p. 265; Iacobucci and Duhachek, 2003). Reliability refers to "the degree to which measures are free from error and therefore yield consistent results" (Peter, 1979, p. 6). Reliability sets the limits for construct validity (Peterson, 1994). The most widely used reliability index is Cronbach's coefficient alpha (i.e., α ; Cronbach, 1951) which is a generalised measure of the internal consistency of a multi-item scale (Peterson, 1994). Calculating coefficient alpha is an important step for purifying measures and assessing the quality of the instrument (Churchill, 1979).

Coefficient alpha should be the first indicator of the quality of the instrument (Churchill, 1979). However, Nunnally and Bernstein (1994, p. 265) argue that "a reliability of 0.90 is the minimum that should be tolerated, and a reliability of 0.95 should be considered the desirable standard". Thus, a higher coefficient alpha indicates a better measuring instrument (Sekaran and Bougie, 2016). The results of the reliability analysis indicate that each of the three of the WCX factors had adequate coefficient alphas. Table 6 presents an overview of Cronbach's alpha value of all WCX factors and the DCX construct. Cronbach's alpha statistics were all closer to 0.80 indicating high internal consistency reliability (Sekaran and Bougie, 2016).

Table 6: Cronbach's alphas- Preliminary WCX Scale (n=100)

| WCX Dimension | Number of Items | Cronbach's Alpha | Cronbach's Alpha If Item Deleted |
|---------------|--|------------------|----------------------------------|
| Usability | Usa1 Usa2 Usa3 Usa4 Usa5 Usa6 | 0.660 | 0.891 |
| | | | 0.903 |
| | | | 0.898 |
| | | | 0.891 |
| | | | 0.898 |
| | | | 0.891 |
| | | | 0.891 |
| Interactivity | Int1 Int2 Int3 Int4 Int5 Int6 | 0.742 | 0.898 |
| | | | 0.891 |
| | | | 0.898 |
| | | | 0.891 |
| | | | 0.898 |
| | | | 0.898 |
| | | | 0.898 |
| Aesthetics | Aes1 Aes2 Aes3 Aes4 Aes5 | 0.742 | 0.757 |
| | | | 0.628 |
| | | | 0.757 |
| | | | |
| | | | |

| | | | |
|--|------|--|-------|
| | Aes6 | | 0.628 |
| | | | 0.628 |
| | | | 0.757 |

5.3 Reliability, discriminant validity, and convergent validity

All the items were examined for reliability, and discriminant and convergent validity. The reliability of the psychometric properties of the measures were assessed in terms of individual item reliability by examining the simple correlations of the measures with their respective construct using the SPSS program. Hulland (1999) and Bagozzi, Yi, and Phillips (1991) suggest that an adequate and acceptable level for individual item reliability is that it should be greater than 0.50. As seen in Table 4, the reliabilities for all three factors were higher than 0.70. Hence, the parameter estimations of all three factors are accurate and achieve adequate internal consistency and reliability (Chin, 1998).

The convergent validity of the measurement items was assessed using three criteria: (1) the item factor loadings should be significant and exceed 0.50; (2) the composite reliability for each construct should be greater than 0.70; and (3) the average variance extracted (AVE) for each construct should exceed the variance attributable to the measurement error (i.e., $AVE \geq 0.50$) (Fornell & Larcker, 1981). The AVE values (see Table 4) indicate that all the constructs exceeded

the recommended threshold value of 0.50 (Fornell & Larcker, 1981). Thus, the AVE values exhibit adequate convergent validity for all three factors.

Discriminant validity was assessed by comparing the average variance extracted (AVEs) with the square of the correlation between the construct and each of the other constructs. The AVEs for each construct were greater than the square of the correlation for all three factors. As indicated in Table 4, all the shaded numbers on the leading diagonals are the square roots of the AVEs while the off-diagonal elements are the correlations among the three constructs. The highest correlation between any pair of the constructs in the lower left of the off-diagonal element of the matrix was 0.767 (i.e., 0.656 and 0.767), while the lowest square root of AVE was 0.690 (i.e., 0.690 and 0.784). This assessment indicates satisfactory discriminant validity (Fornell & Larcker, 1981).

The results of the final measurement model confirmed three essential factors of employee social protection within the CSR frame. Table 4 shows that the three factors (social services, social insurance, and social assistance) have acceptable reliabilities, and convergent and discriminant validities.

Table 4: Reliability, CR, AVE, SQRT AVE, and Correlations

| Component | α | CR | AVE | USA | INT | AES | DCX |
|-----------------------------------|----------|-----|-----|-------|-------|-------|-------|
| Usability (USA) | .847 | .86 | .76 | .784 | | | |
| Interactivity (INT) | .94 | .93 | .68 | .729 | .790 | | |
| Aesthetic (AES) | .91 | .91 | .79 | .493 | .626 | .690 | |
| Digital Consumer Experience (DCX) | .92 | .92 | .74 | 0.611 | 0.681 | 0.609 | 0.887 |

α =reliability, Cronbach's alpha; CR=composite reliability; AVE=average variance extracted; Perpendicular bold readings=square root of AVE; other readings=correlations between components

VI. DISCUSSION

The findings of this study reveal three factors that confirm the satisfactory reliability, discriminant validity, and convergent validity of the constructs.

6.1. Dimensions of Web Consumer Experience (WCX) and Digital Consumer Experience (DCX) within the E-commerce Buying Decision frame.

The previous literature failed to demonstrate the link between digital consumer experience (DCX) and online buying decision behavior and did not empirically test the dimensions of digital consumer experience (DCX) within the e-commerce decision buying behavior. Through the development of a measurement model, this study attempts to address the shortcomings of previous research on CSR initiative from the perspective of social protection-related issues in association with the social responsibility of employers to their employees. Based on the theoretical domains of social protection and CSR through employee expectations, this study identifies three essential dimensions of web consumer experience (WCX) and digital consumer experience (DCX) within the e-commerce buying decision behaviour: usability, interactivity, and aesthetic.

The online consumers in our exploratory study expect e-commerce business to convey these three dimensions in the online business environment for the web and digital consumer experience of online consumers. A direct implication from the findings is that companies should analyse whether their web consumer experience (WCX) and digital consumer experience (DCX) activities contain these essential three dimensions to meet employee's expectations, and become more proactive. Although these dimensions of web consumer experience (WCX) and digital consumer experience (DCX) within the e-commerce buying decision frame are different, they have overlapping objectives and impacts in the sense that they can be about promoting new dynamic capabilities of online business according to the complexity of online consumer behavior (Palalic, R., Ramadani, V., Mariam Gilani, S., Gerguri-Rashiti, S & Dana, L (2021). In this

context, web consumer experience (WCX) and digital consumer experience (DCX) aim to support online consumers in co-creating their own desirable experience through a set of experiential values (Forlani, Buratti, and Pencarelli 2018; Jaziri 2019).

The findings indicate that usability and aesthetic is the main expectation of the online consumers, where its measures are aimed at online consumers who are working and have limited time to do traditional shopping. To the e-commerce business, this form of online business is equivalent to the experience of stable and reasonable business for online consumers to purchase online when they are in critical situations or emergencies. Thus, not only the usable of the website but also the aesthetic of the e-commerce website could also help e-commerce business to tapped their market based on the online consumers preferences and buying pattern in future. These web consumer experience (WCX) and digital consumer experience (DCX) initiatives in the form of usability assist in smoothing consumption during a crisis that forms a safety net. They can, therefore, help improve the well-being of the online consumers through strengthening the economic resilience of the digital economy communities. More specifically, web consumer experience (WCX) and digital usability can contribute to increase the benefits to the working adult.

Meanwhile, digital consumer experience (DCX) measures concern the risks associated with the event of security breaches. One of the potential risk for security breaches such as hacking and data breaches. Privacy concerns, consumers may concerned about their data being used and shared and companies need to ensure they have robust privacy policies and practices in place. Digital consumer experience can be considered to be a promotive measure of multiple devices (ex: smartphone & tablet) that is designed to enhance poor user experience, lack of trust, technical issues, lack of personalization and cybersecurity compliance.

6.2. Theoretical and practical implications

This study provides significant theoretical and practical implications for the information system and marketing literature. The findings of this study suggest theoretically and methodologically useful dimensions of web and digital consumer experience within the e-commerce buying decision behavior frame. Although more work is required to validate the three dimensions and the measurement items, the findings of this study offer several useful applications to theoretical framework development and testing, thereby facilitating further empirical work in this understudied area. First, information system research, which has remained as the missing link between e-commerce buying decision process activities and consumer behaviour responses, will be improved by testing the role of web consumer experience (WCX) and digital consumer experience (DCX) initiatives by companies in the process of promoting equity and equality via e-commerce buying decision behavior.

Previously, researchers have concentrated on consumer experience (CE) activities that are external to companies. With the proposed measurements and constructs, the role of consumer experience initiatives in the process of web consumer experience (WCX) and digital consumer experience (DCX) can be investigated through testing the impact of the three dimensions on online buying decision behaviour responses. In addition, scholars should investigate the relative effectiveness of the dimensions on the potential and existing online buying decision behavior. Which factor would generate the biggest impact on the success of buying decision behavior? By examining the positive relationships between web consumer experience and digital consumer experience within the e-commerce buying decision behavior frame dimensions and e-commerce buying decision behavior outcomes (equality and equity), the role of web consumer experience and digital consumer experience could be demonstrated, thereby filling a missing link in the information system and consumer behavior literature. Thus, this study will offer a clearer theoretical and practical direction for the role of web consumer experience and digital consumer

experience in the process of contributing to equality and equity of buying decision behavior.

Moreover, the proposed web consumer experience (WCX) & digital consumer experience (DCX) within the e-commerce buying decision frame dimensions and measurements will facilitate further theory testing in terms of expressing the nexus between the extension of web consumer experience (WCX) and digital consumer experience (DCX). For practitioners, ultimately, an understanding and awareness of the three dimensions of web consumer experience (WCX) and digital consumer experience (DCX) within the e-commerce buying decision frame will enable true visibility and the sustainability of e-commerce buying decision process by companies.

VII. CONCLUSION

This study examines online consumer's expectations of online buying experience of using the website and digital buying experience within the e-commerce buying decision behaviour frame as an exploratory effort to develop a valid measurement instrument. Furthermore, this study is the first scholarly effort to illustrate the complete multidimensional theoretical nature of online buying experience by aligning the literature related to both information system and consumer behaviour. Although more work is needed to validate the measurement, the findings provide a valuable theoretical and methodological basis that helps demonstrate the contribution of companies' e-commerce initiatives to their potential and existing buyers and sellers.

Our contribution to the body of knowledge is in three aspects: (i) linking web consumer experience (WCX) and digital consumer experience (DCX) to the information system and marketing literature, (ii) applying the online consumer experience (OCX) concept into existing dilemmas in the information system and consumer behaviour literature, and (iii) providing opportunities and insights for future research. Thus, the concept and measurement of web consumer experience (WCX) and digital consumer experience (DCX) is our main contribution. Online buying decision behaviour in this paper

focuses on the web consumer experience and digital consumer experience of the online consumers and online business. The four main components are usability, interactivity, aesthetic and digital consumer experience, which are measured based on the information search and evaluation buying decision process in relation to online business activities. We have proposed 24 items to appropriately measure the contribution of companies in improving e-commerce buying decision behaviour. In future, it is recommended to conduct empirical research by adopting the proposed instrument in order to assess the roles and impact of e-commerce on buying decision behaviour.