E-commerce websites, consumer order fulfillment and after-sales service satisfaction: The customer is always right, even after the shopping cart check-out!

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Purpose: This research identifies the critical factors of online service delivery of electronic commerce (e-commerce) websites, including website attractiveness, website functionality, website security and consumer fulfillment during an unprecedented Coronavirus (COVID-19) pandemic.

Design/methodology/approach: A structured questionnaire was used to gather data from 430 online respondents, who were members in popular social media groups. The survey instrument relied on valid and reliable measures relating to electronic service quality (e-SERVQUAL), to better understand the participants' satisfaction with shopping websites as well as their loyal behaviors and word-of mouth activities.

Findings: The findings reported that consumers valued the e-commerce websites' features and their consumer order fulfillment capabilities. These factors increase the consumers' satisfaction with online shopping experiences, generate repeat business as well as positive reviews in social media.

Originality: This contribution posits that e-commerce websites' ought to be appealing, functional and offer secure transactions. More importantly, it suggests that online merchants should consistently deliver a personalized service in all stages of an online purchase, including after the delivery of the ordered products.

Research implications / limitations: This study addresses a knowledge gap in academia. To date, little research has focused on the consumer order fulfillment aspect of e-commerce transactions and on the after-sales services of online businesses.

Keywords: electronic service quality, consumer fulfillment, website functionality, consumer satisfaction, consumer loyalty, word-of-mouth.

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1. Introduction

E-commerce has grown at an exponential rate during the unprecedented outbreak of the COVID-19 (Barnes, 2020; Sheth, 2020). Many companies, including small businesses have recognized the potential of selling their products through the Internet. COVID-19 has accelerated the shift towards a more digital world (Sheth, 2020). It led to the expansion of e-commerce transactions, ranging from luxury goods and services to everyday necessities. E-commerce has increased across different product categories during the pandemic. More online users are using digital and mobile technologies to search about products or services. They may be intrigued to finalize their online transactions and make a purchase, if they perceive that the service quality of the online business would meet and exceed their expectations (Flanagin, Metzger, Pure, Markov and Hartsell, 2014; Rajamma, Paswan and Ganesh, 2007).

WEF (2020) reported that there was a significant increase in online purchases relating to grocery items, information and communications technologies or electronics, gardening or do-it-yourself, pharmaceuticals, education, furniture or household as well as cosmetics or personal care products, among other items. Several consumers from advanced and developing countries, have also increased the frequency of their online purchases (UNCTAD, 2020). COVID-19 has shifted consumer demand from brick-and-mortar retail to e-commerce (Barnes, 2020). The pandemic's preventative measures have led individuals to follow social distancing procedures and to limit their physical interactions with other persons, to curb the spread of the contagion (Camilleri, 2021). In a similar vein, consumers were encouraged to avoid crowded stores and to utilize the internet to procure everyday items (OECD, 2020).

E-commerce is different from traditional shopping. Online websites can feature a wide array of products. They are easily accessible, functional and convenient without the restrictions of time and space (Barrera and Carrión, 2014; Chang and Wang, 2011). Typically, online users can

easily compare the attributes, features and prices of different products through their personal computers or mobile devices. They can access a wide range of alternative products with more competitive prices in various websites. Thus, user-friendly and responsive e-commerce websites and online marketplaces can capture the attention of their visitors and entice them to make a purchase. Eventually, they may re-visit these websites, if they were satisfied with their levels of service quality (Li, Peng, Jiang and Law, 2017). Hence, e-commerce websites and online marketplaces are expected to deliver a personalized customer service to online users (Tong, Luo & Xu, 2020).

Many direct-to-consumer merchants are increasingly using public cloud platforms like Amazon Personalize and PinPoint, among others, to differentiate themselves through immersive omnichannel online experiences, to win new customers (Shopify, 2021). They are relying on the expertise of ecommerce giants and on their machine learning capabilities to provide personalized recommendations, to help their customers discover products, deals and promotions. Online marketplace technologies are supporting merchants to delivering unique consumer experiences, during and after the sales transactions (Amazon, 2021). Online merchants can minimize their consumers' complaints if they respond to their queries in a timely manner (Santouridis, Trivellas and Tsimonis, 2012). For instance, they are providing more information about shipping and delivery options of products before consumers lay down their credit card details. The automated shipping and consumer fulfillment are becoming a competitive differentiator as consumers are interested in brands that offer fast, reliable, and sustainable shipping options (Nguyen, de Leeuw and Dullaert, 2018).

Although there are many empirical studies that have explored the service quality of retail websites (Wu, Shen and Chang, 2015; Ariff, Yun, Zakuan and Ismail, 2013; Büyüközkan and Çifçi, 2012; Akinci, Atilgan-Inan and Aksoy, 2010; Ladhari, 2009; Parasuraman, Zeithaml and

Malhotra, 2005; Santos, 2003; Zeithaml, Parasuraman and Malhotra, 2000), for the time being, little research has focused on the consumer fulfillment aspect of e-commerce transactions, during an extraordinary crisis like COVID-19. Therefore, this contribution builds on relevant theoretical underpinnings that are grounded in the service-dominant logic (SDL). Its empirical research addresses a gap in academic knowledge by investigating the effects of website attractiveness, website functionality, website security and consumer order fulfillment on consumer satisfaction, loyalty behaviors and word-of-mouth activities during an unprecedented pandemic situation.

The data was collected from 430 online users who were members of two popular social media groups. A structured questionnaire was used to investigate their perceptions and attitudes about online shopping experiences during COVID-19. This study's objectives are threefold: Firstly, it presents a critical review of the literature that is focused on the service quality of e-commerce websites. Secondly, it puts forward a theoretical model that consists of measures that were tried and tested in academia. This research reveals the validity and reliability of the proposed research model. Thirdly, it identifies the implications of this contribution to academia and practitioners.

This article is structured as follows: The following section sheds light on the conceptual framework and formulates the hypotheses of this research. Hence, the methodology section clarifies how the data was captured and analyzed. The results section provides an interpretation of the findings. In conclusion, this contribution puts forward its theoretical as well as its practical implications. It identifies its research limitations and outlines future research avenues to academia.

2. The Conceptual framework

2.1 e-Loyalty

The consumers' re-purchase intentions construct is usually considered as the likelihood that consumers will continue buying products from the same merchant or website (Nguyen et al., 2018; Zeithaml, Berry and Parasuraman, 1996). The consumer loyalty in an electronic service environment (i.e. e-loyalty) prompts online users to revisit e-commerce websites and to repeat their purchase behaviors (Cyr, Hassanein, Head and Ivanov, 2007). Their loyalty towards particular online marketplaces (or towards online vendors) is one of the major factors that increases their profitability. Online consumers tend to be less loyal than consumers who purchase products and services through brick-and-mortar settings (Rajamma et al., 2007). In anonymous and automated shopping contexts, online users can quickly compare competing products and services with minimal efforts (Srinivasan, Anderson and Ponnavolu, 2002). Consumers who utilize an e-commerce website's services are likely to find alternative sites that can also satisfy their shopping requirements (Anderson and Srinivasan, 2003).

2.2 e-Satisfaction

Consumer satisfaction is one of the fundamental concepts in the marketing literature. This notion epitomizes the consumers' state of fulfillment and evidences their positive or negative feelings about the product or service they received (Evanschitzky, Iyer, Hesse and Ahlert, 2014; Oliver, 2014; Collier and Bienstock, 2006). It is often described as a subjective judgement that is driven from the consumers' personal feelings of pleasure or disappointment, as they compare the purchased products' performance (or outcome) with their expectations (Oliver, 2014; Walker, 1995). In an online context, the consumers' satisfaction from e-commerce websites (i.e. e-satisfaction) represents their contentment with respect to previous purchase experiences through specific websites (Anderson and Srinivasan, 2003). The e-commerce websites most important

goals are to deliver long term value to online customers to trigger loyal behaviors. Many studies reported that the quality of the mentioned websites and the consumers' satisfaction levels with respect to their prior purchase experiences can have a significant effect on their loyalty toward electronic shopping services (Rodríguez, Villarreal, Valiño and Blozis, 2020; Nguyen et al., 2018). The consumers' e-satisfaction has a significant and positive impact on their e-loyalty (Castañeda, Rodríguez and Luque, 2009). This argumentation leads to the first hypothesis:

H1: The consumers' e-satisfaction has a positive and significant effect on their e-loyalty.

Prospective consumers are increasingly evaluating and appraising different products, services as well as the service performance of online businesses, e-commerce websites or marketplaces before committing themselves to making a purchase (Kemény, Simon, Nagy and Szucs, 2016; Hennig-Thurau, Gwinner, Walsh and Gremler, 2004). Electronic word-of-mouth (e-WOM) communications have often been described as the consumers' positive or negative statements, relating to their knowledge and experience about a product or service provider (Guo, Barnes and Jia, 2017; Rossmann, Ranjan and Sugathan, 2016). Their experience is usually disseminated to a multitude of online and mobile users through social media and consumer review websites (Troise and Camilleri, 2021; Camilleri, 2019). The consumers' testimonials and recommendations can help prospective customers to make up their mind with their purchase decisions (Park and Lee, 2009).

The advances in Web 2.0 coupled with the increased growth of social media networks have inevitably led to more interactions from consumers, who may be intrigued to share their opinions about their service encounters or on the products they used, with other individuals (Capriotti, Zeler and Camilleri, 2021; Wu et al., 2015; Huang, Zhang, Liu and Liang, 2014). The e-WOM publicity that is featured in social networking sites (SNSs) can transmit mixed brand messages to millions of online users. Hence, the consumers' satisfaction (or dissatisfaction) with products and services

can lead them to publish their recommendations or referrals (Rather and Camilleri, 2019). On the other hand, their dissatisfaction with previous purchase may encourage them to voice their negative experiences with other online users. Hence, in this case, the consumers' intention is to tarnish the image and reputation of the online seller or marketplace (Chu and Kim, 2011). This leads to the following hypothesis:

H2: The consumers' e-satisfaction has a positive and significant effect on their e-WOM.

The consumers' satisfaction and loyalty toward an online business or marketplace is dependent on the consistent delivery of electronic service (e-service) quality (Barrutia, Paredes and Echebarria, 2016; Wu et al., 2015). There are several academic commentators that have attempted to define and conceptualize the notion of e-service quality. Zeithaml, Parasuraman and Malhotra (2002) suggested that e-service quality is "the extent to which a website facilitates efficient and effective shopping, purchasing, and delivery of products and services". Santos (2003) maintained that service quality in e-commerce involves "the consumers´ overall evaluation and judgement of the excellence and quality of service offerings in the virtual marketplace". Many researchers strived in their endeavors to identify the factors that affect the consumers' perceptions about the service quality of websites (Büyüközkan and Çifçi, 2012).

e-Service quality is a comprehensive construct that covers both pre-web and post-website service aspects. Lee and Lin (2005) argued that the consumers' perceptions about e-service quality in online shopping are influenced by: website design (degree of user friendliness), reliability (trustworthiness and security), responsiveness (courteous customer service and helpfulness), and personalization (differentiating services to satisfy specific individual needs).

Many researchers explored the respondents' perceptions and experience with online retailing, price comparison sites, travel search engines, and electronic banking, among other e-commerce websites. Several studies relied on the following measuring scales to evaluate the

service quality of websites: electronic service quality (e-SQ or e-SERVQUAL) (Wu et al., 2015; Ariff et al., 2013; Büyüközkan and Çifçi, 2012; Ho and Lin, 2010; Ladhari, 2009; Fassnacht and Koese, 2006; Parasuraman et al., 2005; Santos, 2003; Zeithaml et al., 2000), electronic retail quality (eTailQ) (Wolfinbarger and Gilly, 2003).

Others developed transaction process-based approaches for capturing service quality (eTransQual) (Bauer, Falk, and Hammerschmidt, 2006), or identified key quality factors in web site designs (KQFs) (Cox and Dale, 2002); and developed theoretical models that are closely related to e-SQ, including net quality (NETQual) (Bressolles and Nantel, 2008); perceived e-service quality (PeSQ) (Cristobal, Flavian, and Guinaliu, 2007), site quality (SITEQUAL) (Yoo and Donthu, 2001), Website Quality (webQual) (Loiacono, Watson and Goodhue, 2007; Barnes and Vidgen, 2002) and WebQualTM (Loiacono, Watson, and Dale, 2002), among others. Figure 1 presents a list of key elements for the delivery of service quality of e-commerce websites and electronic marketplaces, that will be explored in this empirical research.
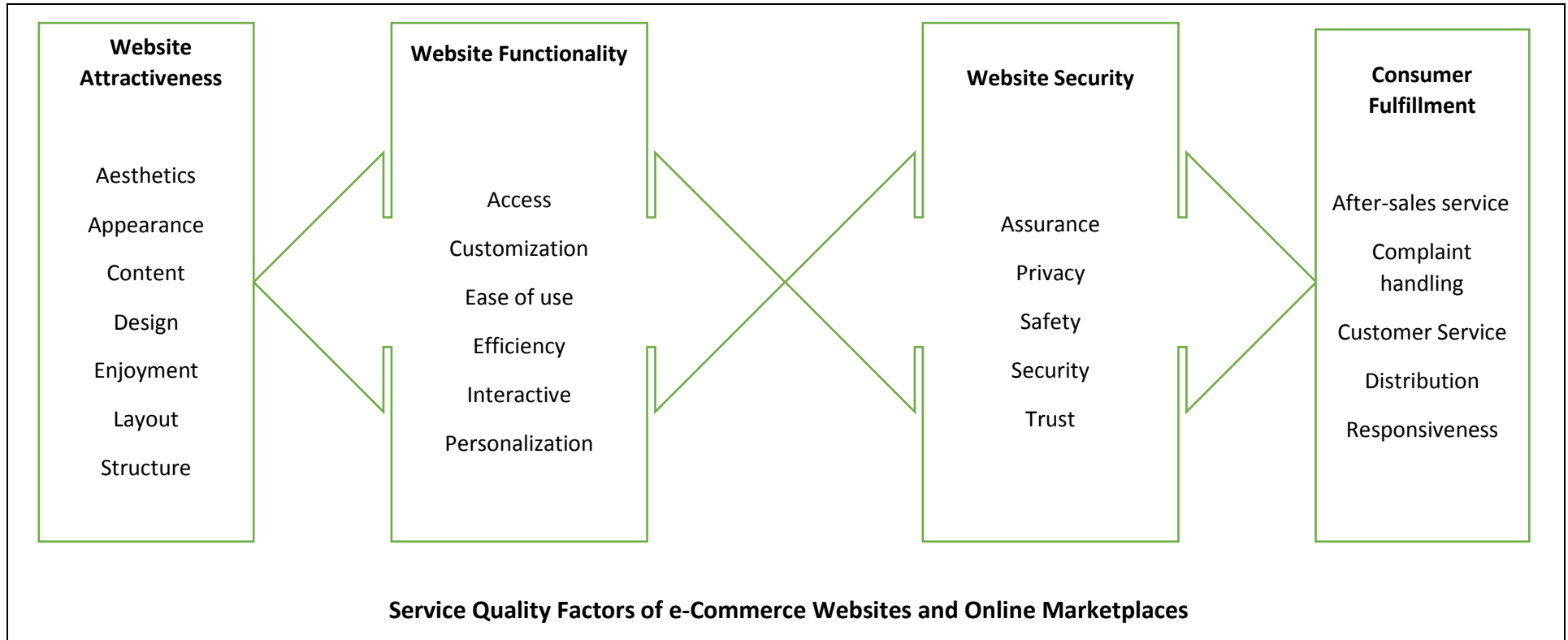
Website Attractiveness	Website Functionality	Website Security	Consumer Fulfillment
Aesthetics	Access	Assurance	After-sales service
Appearance	Customization	Privacy	Complaint handling
Content	Ease of use	Safety	Customer Service
Design	Efficiency	Security	Distribution
Enjoyment	Interactive	Trust	Responsiveness
Layout	Personalization		
Structure			

Service Quality Factors of e-Commerce Websites and Online Marketplaces

Figure 1. Key elements for the effective delivery of service quality of e-commerce websites and online marketplaces

The e-service quality features, including website attractiveness, website functionality, website security and consumer fulfillment are significant antecedents of e-satisfaction, e-loyalty and e-WOM (Rossmann et al., 2016; Ladhari, 2009; Cristobal et al., 2007; Parasuraman et al., 2005; Santos, 2003; Zeithaml et al., 2000).

2.3 Website attractiveness

Many researchers maintained that website designs and their presentation are important dimensions of e-service quality (Li et al., 2017; Wakefield, Wakefield, Baker and Wang, 2011; Yoo and Donthu, 2001). The structure, layout and organization of the web sites' content can capture the online and/or mobile users' attention. Alternatively, they may lure them to visit other competitors' sites (King, Schilhavy, Chowa and Chin, 2016). Attractive website designs provide easily accessible information, use large, legible fonts and may feature appropriate colors that are coordinated with the company's logo and corporate image. Their calls to action may usually include high-contrast buttons, as well as clear information to enhance the online visitors' experiences, and can facilitate their purchase transactions (Flanagin et al., 2014). Conversely, a complicated funnel could prevent prospective customers from finalizing online transactions.

The aesthetics of attractive website designs can play a critical role in improving the browsing experience of online visitors (Li and Yeh, 2010; Ranganathan and Ganapathy, 2002). The appearance of corporate websites is usually the first determinant that is noticed by online and mobile users. Of course, individuals will have different preferences. They may hold varying attitudes and perceptions on what they consider as key elements that can increase the websites' appeal. For instance, they may favor one color or image, over another. A specific color may be alluring to a person, yet it may be considered inappropriate for other individuals. Website developers may utilize certain colors to engage with online users. They may use vivid, eye-catching varieties, pleasant tones or complementary hues and shades. In addition, they may include

good-quality graphics, images, animations and/or multimedia features, including Java applets, moving objects, and zooming effects, to improve their visual appeal. Generally, too many or too little images, as well as the use of small text and images are not appropriate to captivate the attention of the users of mobile technologies, including tablets and smartphone technologies.

Several studies reported different findings on the effects of attractive website designs on online consumers' behaviors. For instance, Parasuraman (2000) found that a web site's appearance entices online users to continue browsing through its content, and to revisit it again, whether the actual product is appealing or not. Other researchers reported that the websites' designs have a positive effect on their customers' satisfaction (Li et al., 2017; Tsang, Lai and Law, 2010; Wolfinbarger and Gilly, 2003). This leads to the following hypothesis:

H3: Website attractiveness has a positive and significant effect on the consumers' e-satisfaction.

2.4 Website functionality

The website's functionality is related to its instrumental utility, technical capability and efficiency in terms of offering relevant information about products. Online users will usually perceive the functionality of a website if they are in a position to check out its content, with minimal efforts (Cristobal et al., 2007; Collier and Bienstock, 2006). Hence, e-commerce websites ought to be useful and easy to use, to satisfy their consumers' needs for information. Online users should find it simple and straightforward to access and to find their way through shopping web sites. They expect to find what they need, without difficulty, and to maneuver effortlessly and quickly, back and forth, through e-commerce pages. Prospective consumers have to be in a position to clearly understand the ecommerce websites' content, including their terms and conditions. These websites ought to be reliable, concise, accurate, timely and complete (Filieri, 2015).

Their technical functionality relies on the accuracy of e-commerce services. For example, the shopping websites' inventory systems should always feature correct product information of all items that are readily available in stock. Typically, online users would assess the variety and range of products that are available in the e-commerce websites. Many online marketplaces provide comparative information on a wide range of products during the shopping journeys of their visitors. They also present clear pricing information in their check-out process, including the costs of delivery (Mauri, Sainaghi and Viglia, 2019). E-commerce websites and marketplaces can offer flexible payment methods and shipping options. In this day and age, they should provide clear information on their returning policies. They may direct online users to frequently answered questions, use chatbots or offer a webchat facility, if they require the assistance of customer service representatives (Adam, Wessel and Benlian, 2020; Nordheim, Følstad and Bjørkli, 2019).

The online users' perceptions about the website's functionality as well as their e-satisfaction would probably be influenced by the breadth and depth of products that are featured in the retailers' websites (Nguyen et al., 2018). Hence, the website's functionality is considered to be one of the most important dimensions that increases the customers' satisfaction (Adam et al., 2020; Tsang et al., 2010). This leads to the following hypothesis:

H4: Website functionality has a positive and significant effect on the consumers' e-satisfaction.

2.5 Website security

The website security has been defined as the degree to which online users believe that the web page is safe and that their personal information is protected (Parasuraman et al., 2005; Santos, 2003). Consumers ought to be convinced that they are dealing with a trustworthy shopping website. They have to be assured that the data they are sharing with the online merchants or

marketplaces, including their credit card details, cannot be accessed and used by others for fraudulent purposes (Okazaki, Hairong and Morikazu 2009; Chang, Wang and Yang, 2009). Online users have to feel confident that e-commerce website offer secure and safe transactions in the virtual context (Neuburger, Beck and Egger, 2018; Cristobal et al. 2007). Thus, the notion of website security is frequently associated with website privacy in an online service environment (Wolfinbarger and Gilly, 2002). The absence of privacy in a website is one of the main concerns of online users and may deter them from shopping online (Barrera and Carrión, 2014; Cristobal et al. 2007).

The website's security is a vital e-service quality dimension (Parasuraman et al., 2005; Santos, 2003). Online businesses and marketplaces are entrusted with their consumers' personal information. It is their responsibility to protect their consumers' data. They may use SSL certificates to prove that their transactions are safe and secure. This way, online users will be reassured that ecommerce websites are trustworthy. as they are safeguarding their online details. Previous research confirmed that consumer privacy was found to have a significant effect on overall perceptions about e-service quality as well as on e-customer satisfaction (Barrera and Carrión, 2014). This leads to the following hypothesis:

H5: Website security has a positive and significant effect on the consumers' e-satisfaction.

2.6 Consumer fulfillment

Secure web sites ensure that the consumers' personal information remain secure. However, before providing their personal account and payment details, consumers have to choose their desired products, add them to their shopping cart or proceed to check-out, if they are readily available in stock (Chang et al., 2009). Nguyen et al. (2018) argued that the e-commerce websites' failure to live up to the consumers' order-fulfilment promises can be detrimental to their online sales. They pointed out that out-of-stocks are negatively correlated with the consumers' loyalty to

a business. Retailers face a trade-off between offering a wide range of product categories in their website whilst incurring higher inventory costs, to satisfy their customers (Nguyen et al., 2018). The e-commerce websites should provide wide product assortment, fulfill their orders correctly, deliver items as quickly as possible and have to be as responsive as possible to consumer enquiries, within a reasonable timeframe (Santos, 2003). They have to facilitate the fast completion of an online transaction and should strive to minimize their consumers' efforts. Their ongoing provision of customer service is a key element for achieving good results in an online shop (Cristobal et al. 2007; Zeithaml et al., 2002).

Consumers are increasingly expecting a personalized service and a fast response to their complaints (Tong et al., 2020). Very often, online users are provided with different delivery options as well as with specific information including shipping dates, timeslots, estimated delivery times, et cetera, prior to checking out and placing their orders. However, prospective customers may respond in different ways to an online retailer's customized services. They may either decide to purchase more products. Alternatively, they could abandon their shopping cart. It they opt to order their chosen items; they may be informed about their prospective delivery dates. Very often, they can also trace and track their locations. The online sellers' inadequate communications and/or handling of contingent issues including the provision of shipping information, service breakdowns, delays, lost orders, returns and/or refund requests may lead consumers to switch to competitor e-commerce websites that deliver on their promises (Santouridis, Trivellas, and Reklitis, 2009; Bauer et al., 2006; Collier and Bienstock, 2006). Most probably, they will also engage in negative word-of-mouth publicity with other individuals. This leads to the following hypotheses:

H6: Consumer fulfillment has a positive and significant effect on e-consumer satisfaction.

H7: Consumer fulfillment has a positive and significant effect on e-consumer loyalty.

H7a: Consumer satisfaction mediates the relationship between consumer fulfillment and e-consumer loyalty.

H8: Consumer fulfillment has a positive and significant effect on e-WOM.

H8a: Consumer satisfaction mediates the relationship between consumer fulfillment and e-WOM.

Figure 2 sheds light on the research model and of the formulated hypotheses.
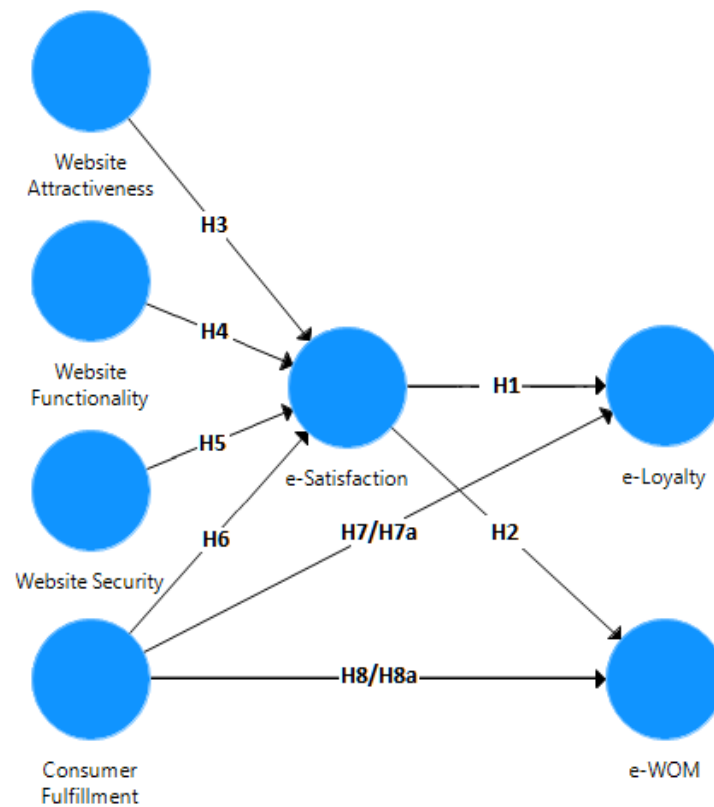

Figure 2. A research model representing the service quality of online shopping websites

3. Methodology

3.1 Survey administration

The empirical data was collected through an online survey questionnaire that was disseminated through two popular social media groups. These groups had more than 170,000 members. Their groups' subscribers were kindly requested to take part in an academic research that sought to explore their online shopping experiences during COVID-19. The survey questionnaire complied with the European General Data Protection Regulation (GDPR) according to EU 2016/679. The targeted research participants were reassured that there was no way that they can identified. They were informed that only aggregate data was being analyzed in this study.

The respondents were expected to indicate the extent of their agreement with the survey's measuring items, in a five-point Likert scale. The responses ranged from 1 = "strongly disagree" to 5 = "strongly agree", whilst 3 signaled an indecision. In the latter part of the questionnaire, the participants indicated their gender and age categories. They also revealed their favorite ecommerce websites.

The survey instrument and its items were presented in a such a way to reduce the plausibility of common method and self-selection biases. It considered the effects of the chosen participants' response styles, the proximity of related or unrelated constructs, and the items' wording were simple and straightforward, according to MacKenzie and Podsakoff's (2012) recommendations. The survey questionnaire was pilot tested with a small group of experienced colleagues, to identify any possible weaknesses.

3.2 The measures

The questionnaire's measuring items were adapted from different academic sources. They were drawn from key theoretical underpinnings relating to electronic service quality literature. The study explored the participants' perceptions about website attractiveness (3 items), website

functionality (3 items), website security (2 items), consumer fulfillment (3 items), consumer

satisfaction (2 items), consumer loyalty (2 items) and electronic word-of-mouth (2 items). The

measures that were used in this research are illustrated in Table 1.

Table 1. The survey questionnaire's constructs and their corresponding items

Construct		Items
Website Attractiveness	WA1	My favorite online shopping website is visually appealing.
(King et al., 2016; Wolfinbarger and Gilly, 2003).	WA2	I feel comfortable purchasing products through my favorite online shopping website.
	WA3	I enjoy purchasing products through my favorite online shopping website.
Website Functionality	WF1	My favorite online shopping website offers a good selection of products.
(Kwon and Kim, 2012; Okazaki et al., 2009).	WF2	My favorite online shopping website provides clear information and is well organized.
	WF3	It is quick and easy to complete a transaction in my favorite online shopping website.
Website Security	SEC1	My favorite online shopping website offers secure online transactions.
(Chang et al., 2009; Cho, 2006; Parasuraman et al., 2005).	SEC2	I feel safe in my transactions when I use my favorite online shopping website.
Consumer Fulfillment	F1	The products I purchase from my favorite online shopping website are always delivered on time.
(Bauer et al., 2006; Parasuraman et al., 2005; Wolfinbarger and Gilly, 2003; Srinivasan et al., 2002).	F2	The return policies laid out in my favorite online shopping website are customer-friendly.
	F3	My favorite online shopping website takes good care of its customers.
Consumer Satisfaction	SAT1	I am satisfied with the service I receive from my favorite online shopping website.
(Walsh and Beatty, 2007; Maxham and Netemeyer, 2002; 2003).	SAT2	I am satisfied with the quality of my favorite online shopping website.
Consumer Loyalty	LOY1	I try to use my favorite online shopping website whenever I need to make a purchase.
(Srinivasan et al., 2002; Zeithaml, et al., 1996).	LOY2	I will continue purchasing products from my favorite retail website.
Word-of-Mouth	WOM1	I recommend shopping through my favorite online shopping website to anyone who seeks my advice.
(Srinivasan et al., 2002; Zeithaml et al., 1996).	WOM2	I encourage my friends to do business with my favorite online shopping website.

3.3 The profile of the survey participants

After two weeks, there were 436 responses to the survey. The electronic questionnaires were carefully examined and crosschecked to determine if they had incomplete responses. There were six questionnaires that were not included in the analysis as they had missing values. Hence, the research sample of this study consisted of 430 valid responses. The frequency table reported that there were three hundred thirty-five females (n=335) and ninety-five males (n=95) who participated in this study. The respondents were classified into five age groups (18-28; 29-39; 40-50; 51-61 and over 62 years of age). Most of the research participants were between 29 and 39 years of age (n=152), followed by those between 40 and 50 years of age (n=97).

4. Data analysis

4.1 The descriptive statistics

Generally, the respondents suggested that they agreed with the survey items as there were high mean scores above the midpoint (3). The highest scores were reported for SEC1 (M=4.407), WA2 (M=4.337) and SEC2 (M=4.302). Whilst WOM2 reported the lowest mean score (M=3.756). The SD indicated that there were small variances in the participants' responses, thereby indicating a very narrow spread around the mean. The values of the SD varied from 0.641 (for SAT2) to 0.962 (for LOY1).

4.2 Confirmatory composite analysis

A structural equation modelling partial least squares (SEM-PLS 3.3), confirmatory composite analysis (CCA) was utilized to evaluate the measurement quality of the proposed research model (Ringle, Wende and Becker, 2014). Its PLS algorithm revealed the results of the reflective measurement model (Hair, Howard, Nitzl, 2020). Most of the standardized loadings reported values that were higher than the recommended threshold of 0.7 (Hair et al., 2020), except for CF1.

Table 2 sheds light on the outer loadings. It also indicates the results of the reliability and validity of this model. The CR values were between 0.808 and 0.972. The values of average variance extracted (AVE) confirmed convergent validity as each construct explained more than 50 per cent of the variance of its items. In other words, the values for AVE were higher than 0.5. There was evidence of discriminant validity as the square root value of AVE was greater than the correlation values among the latent variables (Fornell and Larcker, 1981). This study also examined heterotrait-monotrait (HTMT) ratio of the correlations to re-confirm the presence of discriminant validity. There was evidence of discriminant validity where the figures were lower than 0.9 threshold (Henseler, Ringle and Sarstedt, 2015).

Table 2. An assessment of the composite reliability, convergent validity and discriminant validities

	Construct	Items	Outer Loadings	Alpha	Rho_A	CR	AVE	1	2	3	4	5	6	7
1	Consumer Fulfillment	CF1 CF2 CF3	0.575 0.8 0.898	0.647	0.738	0.808	0.592	**0.769**	0.722	0.946	0.659	0.806	0.4	0.663
2	Consumer Loyalty	LOY1 LOY2	0.947 0.933	0.868	0.876	0.938	0.883	0.56	**0.94**	0.779	0.552	0.542	0.335	0.782
3	Consumer Satisfaction	SAT1 SAT2	0.908 0.919	0.802	0.804	0.91	0.835	0.694	0.653	**0.914**	0.768	0.895	0.576	0.744
4	Website Attractiveness	WA1 WA2 WA3	0.835 0.904 0.885	0.847	0.857	0.907	0.765	0.516	0.48	0.638	**0.875**	0.926	0.697	0.579
5	Website Functionality	WF1 WF2 WF3	0.867 0.858 0.802	0.796	0.796	0.88	0.711	0.591	0.453	0.716	0.763	**0.843**	0.703	0.494
6	Website Security	SEC1 SEC2	0.972 0.972	0.942	0.942	0.972	0.945	0.324	0.303	0.502	0.628	0.609	**0.972**	0.408
7	Word-of-Mouth	WOM1 WOM2	0.926 0.911	0.816	0.82	0.915	0.844	0.508	0.665	0.604	0.492	0.401	0.36	**0.919**

Note: The Fornell-Larcker criterion was used to calculate the discriminant validity. The levels of square root of AVE for each construct were greater than the correlation involving the other constructs in the same column. The shaded area features the results of Heterotrait-Monotrait Ratio (HTMT).

4.3 Structural model assessment

The results indicated that there were no collinearity issues as the variance inflation factors (VIFs) were lower than the recommended threshold of 3.3 (Hair et al., 2020). The PLS algorithm revealed the model's predictive power, in terms of the coefficient of determination (R^2) of the endogenous latent variables. A bootstrapping procedure was used to explore the statistical significance and relevance of the path coefficients. It indicated that the relationships' t-statistic were well above ±1.96. These values were significant for a two-tailed test at the 5% level (Hair, Ringle and Sarstedt, 2011). Table 3 reveals the results of the hypotheses of this study. It tabulates the findings of the standardized beta coefficients (original sample), the confidence intervals, t-values and the significance values (p). Table 4 summarizes the results of the mediation analysis.

Table 3. Testing of the Hypotheses

Path Coefficient		Original Sample	Confidence Intervals Bias Corrected	t-value	p	Outcome
H1	e-Satisfaction -> e-Loyalty	0.511	[0.417, 0.609]	10.22	0.000	Supported***
H2	e-Satisfaction -> e-WOM	0.486	[0.393, 0.596]	9.785	0.000	Supported***
H3	Website Attractiveness -> e-Satisfaction	0.117	[0.032, 0.211]	2.536	0.012	Supported**
H4	Website Functionality -> e-Satisfaction	0.323	[0.229, 0.427]	6.261	0.000	Supported***
H5	Website Security -> e-Satisfaction	0.1	[0.013, 0.235]	1.805	0.073	Not Supported
H6	Consumer Fulfillment -> e-Satisfaction	0.411	[0.331, 0.492]	9.924	0.000	Supported***
H7	Consumer Fulfillment -> e-Loyalty	0.205	[0.100, 0.311]	3.865	0.000	Supported***
H8	Consumer Fulfillment -> e-WOM	0.171	[0.012, 0.275]	2.7	0.007	Supported***

Note: Critical values are t < 1.96; *** $p < 0.01$; ** $p < 0.05$.

Table 4. The mediation analysis

	Causal Path	Direct Effect	Indirect Effect 1	*p*	Total Effect	Confidence Intervals Bias Corrected	t-value	*p*	Outcome
H7	Consumer Fulfillment -> e-Loyalty	0.205		0.000					
H7a	Consumer Fulfillment -> e-Satisfaction -> e-Loyalty		0.21	0.000	0.415	[0.159, 0.265]	7.706	0.000	**Complementary Partial Mediation***
H7	Consumer Fulfillment -> e-WOM	0.171		0.007					
H7a	Consumer Fulfillment -> e- Satisfaction -> e-WOM		0.2	0.000	0.371	[0.147,0.263]	6.693	0.000	**Complementary Partial Mediation***

Note: *** *p* < 0.001

SmartPLS 3.3 illustrates the results of the PLS algorithm as it features the direct, indirect and total effects among the constructs. Figure 3 depicts the explanatory power of this research model. It sheds light on the total effects, outer loadings and on the coefficients of determination (R squared) values of the constructs.
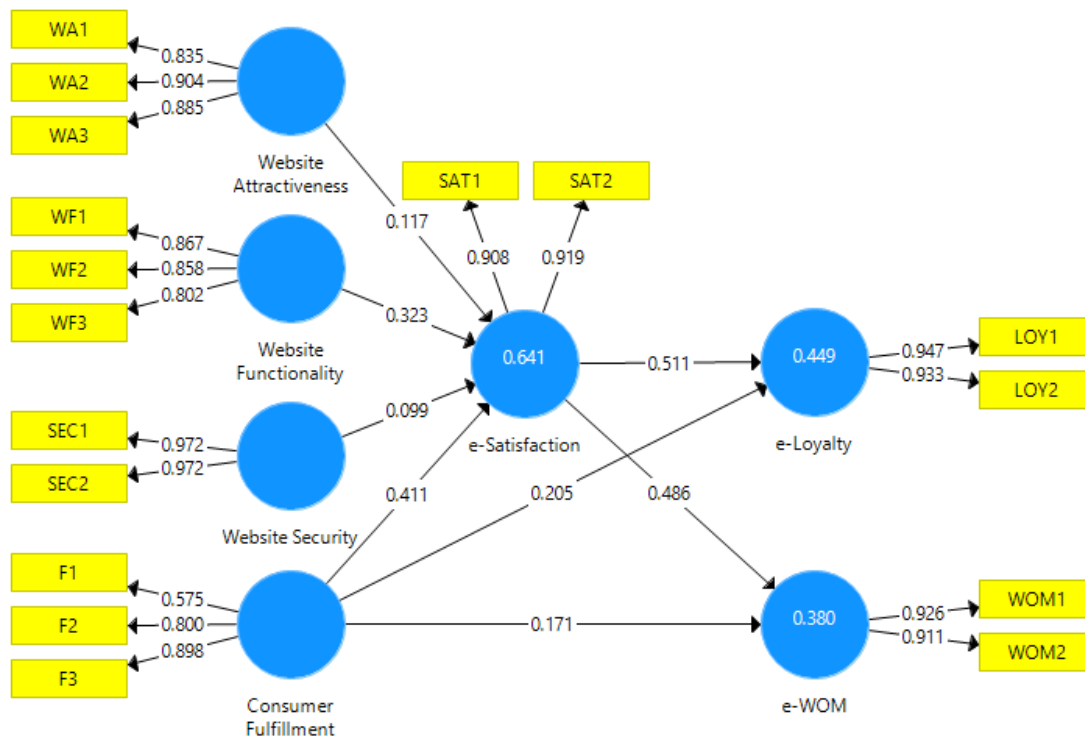

Figure 3. A graphical illustration of the results

4.3 Results

The findings from this research model revealed that the constructs that were used in this study predicted 64.1% of e-satisfaction, 44.9% of e-loyalty and 38% of e-WOM.

H1: This study reported that there was a positive and highly significant effect between e-consumer satisfaction and e-loyalty, where $\beta=0.511$, $t=10.22$, and $p<0.001$. H2 indicated that e-

satisfaction was also a very significant antecedent of e-WOM, where β=0.486, t=9.785, and *p*<0.001. H3 revealed that the websites' attractiveness was a significant antecedent of e-satisfaction, where β=0.117, t=2.536, and *p*<0.05.

H4: The websites' functionality was a very significant precursor of e-satisfaction, where β = 0.323, t=6.261 and p<0.001. H5 was not supported. Website security had a negligible effect on e-satisfaction, as β = 0.1, t=1.805 and p<0.1. H6: There was a very significant relationship between consumer fulfillment and e-satisfaction, where β = 0.441, t=9.924 and p<0.001. Similarly, the results from H7 have shown that consumer fulfillment was a very significant antecedent of e-loyalty, where β=0.205, t=3.865 and *p*<0.001. H8: The consumer fulfillment was also found to be a direct antecedent of e-WOM, where β = 0.171, t=2.7 and p<0.05. In addition, the mediation analysis revealed that e-satisfaction partially mediated the consumer fulfillment -> e-loyalty as well as consumer fulfillment -> e-WOM causal paths.

5. Discussion and conclusions

5.1 Theoretical implications

This research confirmed that the consumers' satisfaction with e-commerce websites has a significant effect on their loyalty as well as on their electronic word-of-mouth publicity. This is an important finding, considering that there are several shopping websites and online marketplaces where consumers can find identical or alternative products (Guo et al., 2017; Barrutia et al., 2016; Anderson and Srinivasan, 2003).

In this case, the respondents suggested that e-commerce websites delivered good value to them and that they triggered their loyal behaviors. The research participants indicated that they were satisfied with the quality of the shopping websites and with their electronic services. Other

research also reported similar results. Rodríguez et al. (2020) found that the service quality of online vendors as well as the consumers' satisfaction from their electronic shopping experiences may lead to repeat purchases from e-commerce websites. This study showed that the customers were intrigued to share their positive or negative experiences with products and/or services with other online users. Hence, they were willing to cocreate online content for the benefit of prospective consumers (Devereux and Gallarza, 2019; Kemény, 2016; Hennig-Thurau et al., 2004).

Many customers are increasingly voicing their opinions and recommendations through qualitative reviews and/or quantitative ratings to support other individuals in their purchase decisions (Guo et al., 2017; Wu et al., 2015; Huang et al., 2014; Park and Lee, 2009). They may either encourage or discourage others from shopping from a particular vendor and/or website. This research confirmed that the online users' satisfaction levels with the service quality of the e-commerce website relied on different factors, including website attractiveness, functionality and security as well as on consumer order fulfillment, during and after a purchase.

The websites' designs and layouts can capture their visitors' attention and may possibly improve the online consumers' experiences during their purchase transactions. The e-commerce websites' appearance and their functionality may entice online users to continue browsing through their content and to revisit them again, in the future (Tsang et al., 2010). Online users would be satisfied if the e-commerce websites are informative, useful and easy to use. They utilize shopping websites to access relevant content on the attributes and features of products, including consumer reviews (Mellinas and Reino, 2019). Therefore, the technical functionality of these websites' inventory systems should feature accurate and timely information on the availability of items as well as on their prices and costs of delivery. In this day and age, they should provide approximate shipping dates, estimated delivery times, et cetera. The online sellers should also establish clear

information on their returning policies. They may direct online users and past consumers to frequently answered questions, and/or to chatbots. Alternatively, they may offer webchat facilities to engage with their valued customers, in real time (Adam et al., 2020; Nordheim et al., 2019).

Although there are many studies that have explored the service quality of e-commerce websites during a purchase transaction, only a few of them have focused on consumer fulfillment (and on their after-sales services). The findings from this research reported that timely deliveries, and the provision of personalized services have a highly significant effect on consumer satisfaction and loyalty. Nguyen et al. (2018) contended that service providers ought to meet and exceed their customers' expectations in different stages of their order fulfilment in online retailing contexts. The authors contended that online sellers ought to deliver the ordered items as expeditiously as possible, to improve their service quality. Other authors, including Santos (2003) and Parasuraman et al. (2005), among others, argued that online retailers should respond to consumer enquiries, in a timely manner. This way, they can increase consumer satisfaction, minimize complaints and reduce the likelihood of negative criticism (and damaging e-WOM) in review websites and social media.

5.2 Implications to practitioners

The outbreak of COVID-19 and its preventative measures have led several businesses and consumers to change their shopping behaviors. Many individuals have inevitably reduced their human-to-human interactions in physical service environments and were increasingly relying on the adoption of digital media and mobile devices, including smart phones and tablets for their shopping requirements (Camilleri and Falzon, 2020). Consumers as well as businesses are benefiting of faster connections as the loading speeds of these devices is one of the critical determining factors as to whether visitors may (or may not) be willing to browse through e-commerce websites or apps, to proceed to check out, and to lay down their credit cards.

Advances in technological capabilities have improved the consumers' online shopping experiences. More businesses are benefiting from the expertise of online marketplaces to deliver personalized services to their customers. For instance, Amazon provides product recommendations to its visitors, that are based on their previous searches (Shopify, 2021). Ecommerce giants utilize machine learning technologies to segment consumers by geographical location, age and gender, buying habits, total expenditure, and more (Camilleri, 2018). They capture data from online users, including their browsing and purchase histories. They distinguish between profitable, loyal customers, price-sensitive customers, and identify those who are likely to abandon their shopping carts.

Prospective consumers will usually compare a wide variety of products and their corresponding prices, in different virtual marketplaces, before making their purchase decision. They will probably check out the consumer reviews to confirm the reputation and trustworthiness of online merchants. At times, they will not be in a position to confirm the legitimacy of certain websites and to determine if it is safe to disclose their payment details to anonymous vendors. A few websites may require consumers to join their mailing list. They may expect them to provide their email addresses, that they may share with third parties. As a result, consumers could receive unwanted ads and scams in their inboxes. Moreover, they may experience phishing and spoofing. Therefore, shopping web pages should use SSL certificates to prove that their transactions are safe and secure. Furthermore, e-commerce websites ought to feature accurate, timely and reliable content. They have to be as transparent as possible with online users. They should clarify their terms and conditions as well as their refund policies.

The smallest thing that's out of place in their e-commerce pages could rapidly erode the customers' trust in their products and services. Online users cannot inspect (or try) their chosen products until they receive them. They may experience delays in the delivery of their shopping

items, particularly, if they get lost, detoured or delivered in the wrong address. Once they receive the product they ordered, they may decide to return it, if for some reason they are not satisfied by its quality. In this case, they could (or could not) be reimbursed for incurring shipping and packaging costs. Shopping websites are increasingly offering synchronous communications facilities to enhance their personalized services through web chat facilities that enable instantaneous conversations with online users. This development has significantly improved the consumers' perceptions about the service quality of e-commerce websites and their satisfaction levels. They also increased the chances of their repeat purchases.

In sum, this contribution suggests that online businesses and marketplaces should identify the critical success factors that are differentiating e-commerce websites from one another. The most popular online marketplaces are capable of attracting repeat consumers through a consistent delivery of personalized customer service, thereby increasing their sales potential and growth prospects.

5.3 Limitations and future research

This research has used the constructs that were tried and tested in academia to identify significant antecedents of consumer satisfaction, loyalty and e-WOM. The findings reported that the websites' functionality as well as the consumers' fulfillment during and after the sales transactions, were the most significant antecedents of consumer satisfaction of e-commerce website during COVID-19. Therefore, this contribution puts forward research avenues to academia. In future, researchers can replicate this study to validate this contribution's conceptual model, in different contexts.

Other methodologies and sampling frames can be used to capture and analyze the data. Perhaps, inductive studies may investigate the online users' in-depth opinions and beliefs on their

shopping experiences. Interpretative studies can reveal important insights on what can be improved

in e-commerce websites' content and/or in the provision of their online services.

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