Are the functionality of website and logistics systems driving e-customer satisfaction in South Africa

Prof S. Perks*

Nelson Mandela University

Gqeberha, Eastern Cape, South Africa

https://orcid.org/0000-0002-1002-7173

Sandra.perks@mandela.ac.za

Tariro Shumba

Nelson Mandela University

Gqeberha, Eastern Cape, South Africa

s216830710@mandela.ac.za

* Corresponding author

ABSTRACT

Although online shopping has increased globally, South Africa (SA) still lags behind developed countries in the adoption of online shopping. This study aimed at determining which online shopping system functionalities drive e-customer satisfaction in SA. Specifically, the study examined if website and logistics system functionality can predict e-customer satisfaction. A positivistic quantitative approach was adopted to collect data using a structured self-administered questionnaire. A final usable sample of 237 South African online shoppers older than 18 years was obtained in the online survey. Convenience and snowball sampling was used to collect data and analysed using descriptive and inferential statistics. The study concludes that only website system functionality augments e-customer satisfaction, while logistics system functionality is an element of the shopping experience that falls outside the scope of this article. Online shops should thus carefully plan the design of their website to ensure it is functional and meets or exceeds customers' expectations. The website must perform in the manner for which it is designed and guide customers to product categories with relative ease and enable quick product image downloads. The website landing page should provide all product and delivery information, product availability status and stock-out conditions.

Keywords: Website system functionality, logistics system functionality, e-customer satisfaction, online shopping, South Africa

1. INTRODUCTION

South Africa (SA) is the most industrialised country in Africa (Hai, 2020). However, it was found that in 2022, SA was still lagging behind developed nations in online shopping adoption (Lemma, Parra & Naliaka *et al.* 2022:17). This was despite the fact that online shops in SA have attempted to make continuous efforts to understand customers' expectations and determine what will satisfy e-customers (Mathur 2019:1). Excellent online service is as important as selling desirable goods (Madinga & Lappeman 2023:347). The more satisfied the customers are with online services, the more chances are that they will develop behavioural intention to buy (González, Comesaña & Brea 2017:32).

The functionality of the online systems plays a role in buying intention. Rudansky-Kloppers (2014:1191) identified that website and logistics systems are important for online shopping. Website functionality relates to how functional the online shop's website is regarding security features, ease of use, being user-friendly and ensuring customer privacy protection (Rudansky-Kloppers, 2014:1191). Online shopping logistic functionality relates to delivery performance such as speed of delivery, tracking and tracing of orders, delivering the correct order as specified and communication with customers regarding possible delays (Vasić, Kilibarda, Andrejić & Jović (2019:73). The purpose of this study was to investigate whether website and logistics system functionality drive e-customer satisfaction.

Still today, customers still have concerns about buying online. Poor functionality of the website and lack of a smooth logistics process may deter customers from online shopping (Vasić *et al.* 2019:72). A strong positive relationship was found between website functionality and customer satisfaction of online shoppers (Tandon, Kiran & Sah 2017:274). However, Makhitha*,* Van Scheers and Mogashoa (2019:315) warn that e-customers are still cautious about trusting websites. Customers prefer websites that are designed in a manner where they can easily navigate through the content (Santoso, Bidayati & Hendar 2019:6). Khan, Liang and Shahzad (2015:296) reveals that logistics functionality relating to delivery risk influence e-customer satisfaction to re-purchase when shopping online. Because of the invisibility of the online service provider, customers may be sceptical about order execution (Makudza, Sandada & Madzikanda 2022:19). The capacity and ability of the courier to deliver products at the specified time and date may be problematic in SA due to poor logistical connectivity (Rajendran, Wahab, Lin & Yun 2018:462). Worrisome too, is customers' fear of being targeted by online scammers (Diphoko 2018:1). This fear is justified as fraudsters have attempted to take advantage of the increase in online buying especially during COVID-19 (African News Agency 2020:1).

The preceding points to the need for further research on website and logistics systems functionality as drivers of e-customer satisfaction. The study offers a unique contribution to online business as it probes which of these two online systems are perceived to be drivers of e-customer satisfaction. Based on the findings it was pointed out which elements of the online system must online shops pay attention to for e-customer satisfaction. The purpose of the study is thus to determine if website and logistics systems functionality are drivers for e-customer satisfaction in SA.

2. LITERATURE REVIEW

2.1 E-CUSTOMER SATISFACTION

Online shopping is sometimes referred to as e-commerce or Internet shopping and is conducted remotely over the Internet without face-to-face interaction between the seller and customer (Singh & Matsui 2017:7). E-customer satisfaction is related to the contentment with the customer's prior purchasing experience with an online business (Vijay, Prashar & Sahay 2019:4). The importance of e-customer satisfaction lies in that it can be a critical component in deciding whether to buy a product or service in an online shopping environment (Rita, Oliveira & Farisa 2019:269). When customers are not satisfied with a product or service provided by an online shop, they are unlikely to shop online, and may spread negative comments which other potential customers may read (Makudza 2021:194). The benefits of customer satisfaction are that it can assist in attracting and retaining customers (Deyalage & Kulathunga 2020:167). Satisfied online customers can lead to long-term business growth and a competitive business advantage (Khan *et al.* 2015:293).

To enable online shopping, functional website and logistics systems must be in place. The functionality of these systems is about the extent to which the online shop's website and logistics systems are operating in the way that they are supposed and expected to (Tandon *et al.* 2017:8). In the following sections, a brief discussion of the elements of functional websites and logistics systems follow.

2.2 WEBSITE SYSTEM FUNCTIONALITY

Website functionality is defined in some studies as the extent to which a website performs in the manner for which it is designed and how customers expect it to operate (Tandon *et al.* 2017:5). In online shopping, customers must make their purchase decision based on the website's appearance, and the quality of the information provided instead of having the physical shopping experience that is possible in brick-and-mortar shops (Hung-Joubert 2017:376). Researchers have identified many elements necessary for a functional website (Meskaran, Ismail & Shanmugam 2013:311).

Website functionality starts with a conspicuous web graphics design. Website graphics are visual representations used on the web pages to augment product and service representation (Ellis, Zucker & Randall 2018:13). These website graphics must create a positive experience for users through a parallax technique whereby the website directs customers to products and services online (Librat 2021:14). A good website has product images which can be compressed to be downloaded quickly (Markrali & Narlina 2020:14). However, the compression of website images should not distort the quality of the image but should merely reduce the size of the picture in megabytes for easy download (Dangaiso, Makudza, Jaravaza, Kusvabadika, Makiwa & Gwatinyanya 2023:2222). A compressed, yet quality image saves data and time in downloading, and allows customers to compare many products within a short space of time (Markrali & Narlina 2020:14). Through good web graphics, customers are more likely to be driven towards e-customer satisfaction as they get to buy and shop under desirable ambient and service scape environments (Lorenzo & Gomez 2017:121). Furthermore, the use of multimedia formats such as text, sound and video in addition to graphics is recommended (Librat 2021:14).

The landing page of a website significantly predicts the customers' level of engagement (Markrali & Narlina 2020:22). A poorly structured home page thus does not attract customers' attention and perceptually customers are more likely to shun it through selective blocking and selective distortion (Rawland & Carnis 2021:67). When customers log onto a website, the home page should offer an overview of all available product and service attributes (Hayder 2017:40). Product delivery information should also be provided (Rawland & Carnis 2021:67). A functional website has an excellent user interface (Meskaran *et al.* 2013:311). It should be easy for customers to perform product searches (Pearson, Tadisina & Griffin 2012:203). Out-of-stock products should be shown on the website (Colins 2019:15). Chiang and Chen (2014:438) notes that a website which allows customers to add out-of-stock products to an online cart is more likely to affect repeat purchases and promote customers' behavioural intention to switch brands.

Ease of navigation among product categories is one of the key website elements that will make a customer choose one online shop above another (Vijay *et al.* 2019:11). Ease of navigation refers to the degree to which a customer feels that a web system can be used effortlessly (Makhitha *et al.* 2019:315). Navigation systems which allow forward and backward browsing attract customers, thereby increasing traffic to the website and perceived customer satisfaction (Dawn & Kar 2011:104). Customers are more likely to return to a website that also allows for easy returns to previously displayed pages (Tandon & Kiran 2019:24).

Web security and online privacy is also an important consideration (Al-Shukri & Udayanan 2019:695). Security concerns are associated with a third party obtaining access to customer data, for example, a hacker or identity thief, and are defined as the degree to which a customer believes that making payments online is secure (Topaloğlu 2012:5). A three-domain (3D) secure structure is a security protocol that helps to prevent fraud in online credit and debit card transactions (Parmer, Dillard & Lin 2021:32). Through the use of a 3D security system, a website enhances the safety of credit or debit card payments (Parmer *et al.* 2021:32). Having a strong privacy policy can reduce customers' privacy concerns while increasing online shops' trustworthiness as it may limit the ability of others

to access and manage customers' personal information (Al-Shukri & Udayanan 2019:695). Personal data safety can be guaranteed by having an encrypted (SSL certificate) website (Landina 2015:8). When customers perceive fewer security threats for online shopping, they are more inclined to transact (Matic & Vojvodic 2014:63).

A website's system functionality is also related to response time (Cheung & Lee 2014:332). Instantaneous communication enhances customers' experience and builds rapport with customers, thereby ensuring customer satisfaction (Maliq 2021:92). It is thus important that the website allows for interactivity (Librat 2021:14). Using web-based synchronous media such as live chat facilities, mobile applications, an online help desk and social network websites can improve customer engagement (Dangaiso, Makudza, Tshuma, Hogo, Mpondwe, Masona & Tagwirei 2023:2234). However, customers prefer live chats over email and social media support because they are faster, more efficient and more convenient than other web communication tools (Blackstock 2020:1). Customers prefer social media plugins on websites as it gives customers credible and live updates even during a crisis (Masengu, Raouyashadi, Makudza & Muchenje 2022:86).

2.3 LOGISTICS SYSTEM FUNCTIONALITY

The functionality of the online logistics system refers to how products and services purchased online are delivered (Rudansky-Kloppers & Strydom 2020:220). Logistics service is considered a key element for enhancing online transactions and for the physical distribution of products (Vasić *et al.* 2019:816). Without logistics in online shopping, even though an expensive activity, online shopping will not be possible (Qin, Liu & Tian 2020:115). A good logistics system will lead to successful distribution of products and services on specified dates and time to the customers through effective delivery (Vasić *et al.* 2019:816).

Logistics is also linked to the order processing speed and, for the customer, it is the time that elapses between a request and delivery that matters (Vasić *et al.* 2019:816). Online shops must provide quick delivery and lower the average delivery waiting time (Rudansky-Kloppers & Strydom 2020:213). When an order meets the customer's expectations, it leads to e-customer satisfaction and a perception of an exceptional online shopping experience (Jahanshahi, Gashti, Mirdamadi, Nawaser & Khaksar 2011:255). Customers are dissatisfied when delivery dates and times exceed promises made, and online shops may lose one or more sales or even customer loyalty as a result thereof (Hu Huang, Hou, Chen & Bulysheva 2016:485).

A functional logistics system also means having an effective delivery courier service provider (Maia, Lunardi, Dolci & D'Avila 2019:18-19). Dependability of courier services is ultimately judged by customers by their timely service delivery (Makudza 2023:2). The capacity and aptitude of the courier to deliver products to a customer based on the specified lead time and specific date are essential in online shopping (Rajendran *et al.* 2018:462). Delivery time, delivery date and delivery speed are all interwoven as they relate to the efficiency of the customer service delivery (Motsi, Gumbe, Muzondo & Makudza 2023:24). The efficiency of service delivery is essential in influencing the decision to purchase online (Kannaiah & Shanth 2020:19).

Brand reputation of courier service providers is also important. Customers prefer services with high brand equity and a traceable record of good service (Tasara, Makudza, Ndlovu & Masengu 2021:46). The reliability of courier services can be assessed by their ability to make convenient deliveries at home, office location, preferred warehouse location, or any customer preferred site (Vasić *et al.* 2019:71). Rigid courier services with a centralised distribution system are more likely to be perceived as poor service providers. The robustness of online tracking systems to trace order status is considered a vital aspect in online logistics (Maia *et al.* 2019:18). Tracking is the extent to which customers may trace their package via many channels (Cao, Ajjan & Hong 2018:407). Tracking options include providing email or text notifications with a tracking number, possibilities for tracking one's shipment directly on the shop's website, options to check shipments using a mobile device, and instant email or text alerts (Ain & Siddiqui 2021:14). Customers favour online shops that include order tracking capabilities and offer notification for order delays to help them plan ahead of time (Menoe & Barnard 2020:64). Tracking services not only play an important part in online shopping and e-customer satisfaction but are essential in determining future online purchase decisions (Hu *et al.* 2016:485).

Another logistics consideration are related to the cost of delivery. Customers are value maximisers and they consider value as the trade-off between costs and benefits (Kotler & Keller 2016:102). Customers prefer free delivery of goods and services from online shops (Gök, Ersoy & Börühan 2019:475). Although the aspect of free delivery may not be sustainable for online shops, a minimum order threshold placement for customers to qualify for free delivery services can be set (Ain & Siddiqui 2021:5). To further enhance customer value and reduce costs, post office services can be used as they have a wider network and coverage which may minimise order accessing order cost (Landina 2015:5).

Based on the preceding literature review, the following two research hypotheses were formulated:

H$_1$:   **There is a positive relationship between website system functionality and e-customer satisfaction.**

H$_2$:   **There is a positive relationship between logistics system functionality and e-customer satisfaction.**

3. METHODOLOGY

It must be noted that this paper forms part of a larger study in which several factors influencing e-customer satisfaction were tested, amongst others systems functionality relating to websites and logistics. A positivistic quantitative research methodology was followed to test the two hypotheses empirically and determine whether relationships exist between the independent variables (website systems functionality and logistics systems functionality) and the dependent variable (e-customer satisfaction). The positivistic paradigm relates to research that is founded on scientific methods of investigation and is dependent on deductive logic, as well as creating and testing hypotheses (Kivunja & Kuyini 2017:30). To achieve the objectives of the study, a quantitative research approach was adopted, and primary data was collected using an online survey. The quantitative research approach focuses on new data collection from a large population and analyses the data by ignoring the emotions or feelings of the individuals (Rahi 2017:2).

Explanatory and descriptive research design typologies were used. This study used an explanatory design to identify and explain the causal relationships between website systems functionality and logistics system functionality (independent variables) with e-customer satisfaction (dependent variable). The elements of what online customers in SA regard as functional website and logistics systems were described and what is regarded as e-customer satisfaction.

The population of the sample was South African customers over the age of 18 years who had shopped online. The non-probability sampling technique was used in this study, specifically convenience and snowball sampling, since no sample frame exists. Convenience sampling was used as the sample was selected based on the availability of respondents (Saunders, Lewis & Thornhill 2016:713). Snowball sampling was also used to reach a larger sample and to complete the online survey in a short space of time (Etikan & Bala 2017:216). A final convenience sample of 237 customer respondents was obtained. According to Israel (1992:4), in survey research a minimum of 100 elements is required for each major group or subgroup, and if there are minor subgroups, a sample of 20 to 50 elements per subgroup is necessary. Only one group was surveyed in this study. A sample size of 237 thus exceeds the minimum of 100 respondents required.

Data was collected using an online survey with a newly developed structured questionnaire. Elements relating to website system functionality were sourced from several studies (Al-Shukri & Udayanan 2019:695; Ayambaa & Chang 2012:82; Cyr, Head, Larios & Pan 2009:545; Ellis *et al.* 2018:13; Librat 2021:14; Markrali & Narlina 2020:14; Meskaran *et al.* 2013:311; Pearson *et al.* 2012:203; Rawland & Carnis 2021:67; Tandon *et al.* 2017:5; Vijay *et al.* 2019:11) to be included in the questionnaire. Website system functionality can be operationalised as a smooth website operation that allows online customers easy online searches and navigation to and between product categories, downloading of images, searching for information about product availability and delivery, as well as reassurance about online personal information security. Many studies (Cao *et al.* 2018:407; Gök *et al.* 2019:475; Kannaiah & Shanth 2020:19; Kotler & Keller 2016:102; Landina 2015:5; Maia *et al.* 2019:18-19; Menoe & Barnard 2020:64; Qin, Liu & Tian 2020:115; Rudansky-Kloppers *et al.* 2020:220; Slindist 2020:2; Vasić, Kilibarda, Andrejić & Jović 2020:816) identify elements relating to logistics system functionality which were included as questionnaire items.

Logistics system functionality can be defined as the smooth distribution process of offering online customers many convenient delivery options, ensuring a quick delivery process by a reputable courier service that delivers on time, offers parcel tracking and reports delays to customers.

Elements relating to e-customer satisfaction were found in several studies (Iconaru 2012:66; Deyalage & Kulathunga 2020:167; Khan *et al.* 2015:293; Lin & Lekhawipat 2014:599; Makudza 2021:193; Rita *et al.* 2019:269; Taleizadeh, Rezvan-Beydokhti & Cardenas 2018:334; Vasić *et al.* 2020:3; Vijay *et al.* 2019:4; Wu, Xiong, Yan & Wang 2021:4) to include as questionnaire items. E-customer satisfaction can be defined as satisfying the needs of online customers by exceeding their expectations with up-to-date timely product information on promotion offerings via their preferred communication choice, good return and refund terms, as well as meeting product quality, delivery and safe money transfer requirements. As the elements relating to these system variables and e-customer satisfaction were based on extant literature, it ensured content validity. Experts in the field of Marketing were asked to scrutinise the questionnaire to confirm face validity of the measuring instrument.

For each of the three factors 10 variables were developed. A five-point Likert scale, varying from 5 for strongly agree to 1 strongly disagree, was used to test the variables. The questionnaire was also pre-tested using a pilot study of 30 respondents . Based on the results of the pilot study, adjustments were made to the questionnaire to ensure that all items in the questionnaire were interpreted correctly by the respondents. After obtaining ethics clearance from the Faculty Research Human Ethics Committee of the Nelson Mandela University, the link to the online questionnaire in Google Forms was sent to family and friends through various communication and social media channels and they were encouraged to forward the link to their social media network. Submission of the online questionnaire was regarded as consent to participation.

All data collected was pre-coded and automatically captured using the online survey tool Google Forms. STATISTICA Version 13 was used for statistical data analysis. Factor extraction was done by calculating the eigenvalues. The data was statistically tested for construct validity using Exploratory Factor Analysis (EFA). Factors with three or more items with factor loadings greater than 0.5 were regarded as valid (Hair, Black, Babin & Anderson 2014:115). Cronbach alpha correlation coefficients were calculated for valid items and factors and was capped at the minimum accepted threshold at 0.7 as advised by Christensen, Johnson, Turner and Christensen (2014:562).

Descriptive and inferential statistics were calculated. The variables were analysed by calculating the means of the factors and variations from the mean (Thompson 2009:58). Inferential statistics make generalisations from population samples to offer information and enable conclusions to be drawn about the population (Healey 2014:145). Inferential statistics were calculated using Pearson product moment correlation analysis and multiple regression analysis (MRA). Pearson product moment correlation coefficients tested the associations among the variables. MRA was conducted to determine cause and effect relationships between the independent and dependent variables (Davis 2010:61).

4. RESULTS

The results will be discussed by first describing the demographic profile of the respondents followed by confirmation of the validity and reliability of the measuring instrument. Thereafter the descriptive statistics and inferential statistics results will be presented.

4.1 DEMOGRAPHIC PROFILE OF RESPONDENTS

Females represented 65% of the respondents. In terms of age diversity, the majority (85%) of respondents were aged 35 years and below with those above 65 years being the least represented (1%). In terms of ethnicity, the majority (86%) were black respondents. Most (76%) respondents had one or no children, with few (3.6%) having five or more children. About half of the respondents (52%) were employed at the time of the survey. Most of the respondents have either postgraduate degrees (42%) or Bachelor degrees (37%). Most (71%) respondents were single with 25% married and 4% living with their partners.

4.2 VALIDITY AND RELIABILITY OF THE MEASURING INSTRUMENT

An EFA was conducted for the larger study. Based on the EFA matrix, six of the variables measuring website system functionality loaded onto other factors not covered in this article while one variable did not meet the 0.5 factor loading cut-off point for validity. Thus four of the ten variables were retained as website system functionality. The extracted factor, website system functionality, recorded an Eigen value of 1.46 which represents a total of 2.08% of the total variance of the larger study. Table 1 summarises the results of the EFA which extracted the variable *Website system functionality*, the items that loaded, the eigenvalue of the variable, as well as the Cronbach's alpha (α) of each item and the overall variable.

TABLE 1: VALIDITY AND RELIABILITY OF WEBSITE SYSTEM FUNCTIONALITY

Statements I shop at online at stores if they have …	Factor loading	Item correlation	Cronbach's alpha after deletion
Website graphics that direct me to product categories	0.608	0.698	0.817
A website landing page that provides all product and delivery information needed	0.573	0.742	0.799
Product images that can be downloaded quickly	0.647	0.670	0.829
A website that indicates out-of-stock products	0.535	0.688	0.821

As is evident in Table 1, the factor loadings ranged between 0.535 and 0.647. Therefore, sufficient evidence of construct validity for website system functionality is provided. Website functionality returned a Cronbach's alpha coefficient of 0.856 suggesting that the items measuring this variable were highly reliable. As a result of the EFA, the variable website system functionality for this study can be defined as website features relating to having all relevant product and delivery information on the home page, indicating out-of-stock product conditions, graphics that direct customers to product categories and can be easily downloaded.

All variables intended to measure logistics system functionality loaded together with other variables of the larger study onto a new factor which could be operationalised as shopping experience. Shopping experience was operationalised as beyond delivery logistics to also include a risk free shopping experience that allows for easy shopping. For this reason no further testing could be conducted for logistics system functionality as the items that loaded did not just relate to logistics systems functionality.

Table 2 summarises the results of the EFA which extracted the variable E-customer satisfaction (dependent variable), the items that loaded, the eigenvalue of the variable, as well as the Cronbach's alpha (α) of each item and the overall variable. E-customer satisfaction recorded an Eigen value of 8.15 which represents a total of 81.54% of the total variance of the larger study.

All 10 items intended to measure e-customer satisfaction loaded onto the factor. The lowest factor loading was 0.711 and the highest was 0.959. Therefore, sufficient evidence of construct validity for website functionality is provided. E-customer satisfaction had a Cronbach's alpha coefficient of 0.971 and therefore deemed a reliable measuring scale.

TABLE 2: VALIDITY AND RELIABILITY OF E-CUSTOMER SATISFACTION

Statements Online shops satisfy my needs if they ….	Factor loading	Item correlation	Cronbach's alpha after deletion
Allow both online or nearest in-store returns	0.884	0.854	0.971
Allow a refund for returns	0.933	0.912	0.969
Guarantee safe money transfers	0.959	0.943	0.968
Have packaging that protects products during delivery transit	0.940	0.922	0.969
Ensure there is no information overload	0.835	0.798	0.973
Meet my product quality expectations	0.938	0.917	0.969
Meet my delivery time period expectations	0.950	0.934	0.968
Update their website regularly to show timely information	0.937	0.919	0.969
Inform me about promotions on my preferred communication choice	0.711	0.664	0.978
Keep me informed of order changes	0.913	0.894	0.969

In this article, e-customer satisfaction refers to customers' needs that are satisfied as the online shop exceeds their expectations and provides up-to-date product information on promotion offerings via their preferred communication mode, fair return and refund terms, as well as meeting product quality, delivery and safe money transfer requirements.

4.3 DESCRIPTIVE STATISTICS

Website functionality had a mean score of 3.93 which tended to an agree rating. A standard deviation of 0.96 was recorded which points to much variation between scores. The empirical evidence reveals that South African online shopping customers favour a well-designed website that has graphics that direct customers to product categories, a website landing page that provides all necessary product and delivery information, and product images that can be downloaded quickly. Moreno, Valencia, Pérez and Arrue (2018:1) confirm that website navigation allows for easy web page browsing to enhance easy product search. When customers log onto a website, the home page should offer an overview of all available product and service attributes (Hayder 2017:40). Product delivery information should also be provided on the home page (Rawland & Carnis 2021:67). Customers are also more likely to be satisfied and return to a website that has a well-designed navigation system which makes it easy to return to previously displayed pages (Tandon & Kiran 2019:24). The empirical evidence also reveals that a well-designed website that indicates out-of-stock products is desired by South African online shopping customers. Out-of-stock products should be shown on the website (Colins 2019:15). Chiang and Chen (2014:438) note that a website which allows customers to add out-of-stock products to an online cart is more likely to attract repeat purchases.

E-customer satisfaction scored a mean of 4.25 which tended to an agree rating. This means that respondents agreed that they were satisfied with their online purchasing if meeting the elements tested for e-customer satisfaction. A standard deviation of 1.03 was recorded which points to much variation in responses. Overall, it seems that e-customer satisfaction requires meeting customer expectations prior to, during and after a purchase.

Prior to purchasing, respondents are satisfied when online communication expectations are met by not being bombarded with information overload. In as much as customers need to stay informed online, information overload does not predict customer satisfaction (Marandu, Makudza & Ngwenya 2019:113). Time can be lost as a result of information overload on the Internet while making an order and waiting for delivery, with consequent negative implications for e-customer satisfaction (Iconaru 2012:66). Respondents also expect timely updated website information, being informed about promotions on their prefer communication channel, as well as notification of order changes. Tandon and Kiran (2019:24) recommend that online shops should update their websites more often to keep only relevant information on a page. Information about promotions and discounts is much sought after by customers as they aspire to obtain low-priced products (Khan *et al.* 2015:295). Websites that display genuine promotion information have a higher propensity to satisfy their customers (Wu *et al.* 2021:4).

During purchasing respondents are satisfied if there is a guarantee for safe money transfers. Makudza, Masiyanise and Mtisi (2020:8) advocate for safe money transfer guarantees as it is essential for customer satisfaction. After the purchase respondents are satisfied if the online store meet product quality and delivery period expectations, as well as when the product reach the customer in an undamaged condition due to the use of protective product packaging. Makudza (2021:193) notes that customers' product quality expectations being outweighed by the actual performance of the product leads to customer satisfaction. Not only should the product exceed quality expectations, it should also exceed customers' expectations in terms of delivery time and packaging (Vasić *et al.* 2020:3). Packaging ensures form utility, whilst delivery time ensures time utility, both being key attributes of e-customer satisfaction (Popli & Mishra 2015:56). The option to return the product either online or at the nearest physical stores with the possibility of a refund is also contributing to e-customer satisfaction. Online customers are satisfied if the online shop has a return and replacement policy for when product quality is not up to standard with both an online or offline return option (Khan *et al.* 2015:295). A refund policy is also a key driver locking in customers and promoting future purchases (Taleizadeh *et al.* 2018:334).

4.4 INFERENTIAL RESULTS

E-customer satisfaction had positive strong associations with website functionality (r=0.770). Dawn and Kar (2011:104) justify the strong association between *website functionality* and *e-customer satisfaction*, and pointing out that websites which allow forward and backward browsing attract customers increase traffic to the website and lead to e-customer satisfaction. For regression analysis to be carried out, the multi-collinearity assumption must be first tested to establish whether the independent variables are not too much correlated. According to Saunders *et al.* (2016:463), if the VIF values are above 10 it violates the regression assumption. Furthermore, a very small tolerance value (0.10 or below) indicates multicollinearity among variables. The VIF value of website functionality was 2.59 which is well below 10 and the tolerance value was 0.39 which was above 0.10. For this reason, the MRA could be conducted.

Based on the MRA of the larger study, approximately 41.6% of the variance in e-customer satisfaction can be explained by the variance in website system functionality. The t-value for website system functionality and e-customer satisfaction was 6.529 (p=0.000) which proved that the relationship was statistically significant. Using the critical value of above 3.09 at a significance level of 0.001, H_1 is thus supported. The beta value of 0.416 reflects moderate strength which means every unit increase in website system functionality may result in an e-customer satisfaction improvement of 41.6%. Website system functionality can thus to some extent predict e-customer satisfaction.

4.5   DISCUSSION OF THE HYPOTHESIS TESTING RESULTS

In this study logistics system functionality was considered as part of online customer shopping experience. For this reason it could not be further tested as a standalone factor for logistics system functionality. This is not to say that it is not an important driver of e-customer satisfaction but merely that logistics in the online environment in this study was considered by customers as part of a much wider concept namely shopping experience. A study by Vakulenko,

Shams, Hellström and Hjort (2019:306) confirmed that shopping experience has a relationship with e-customer satisfaction through the mediation of delivery experience. Zaid and Patwayati (2021:989) pointed out that shopping experience is an indicator of e-customer satisfaction.

This study confirmed that in SA, website system functionality is a driver of e-customer satisfaction. Website system functionality encompasses elements such as an excellent user interface, enhanced privacy and high degree of security (Meskaran *et al.* 2013:311). E-customer satisfaction emanates from the degree to which a customer feels that a web navigation system used is free of effort (Makhitha *et al.* 2019:315). Effort free websites are designed to provide clean displays, enable quick presentations and allow for simple search pathways (Ayambaa & Chang 2012:82). Vijay *et al.* (2019:11) confirmed that if a website allows customers to navigate easily it will be chosen above other online sites. Khare and Rakesh (2011:229) observed that websites that are simple to utilise, improve customer delight during online buying which brings about e-customer satisfaction. Moreno *et al.* (2018:1) mentioned that easy web page browsing can enhance e-customer satisfaction.

A well-functioning website also includes having product images which can be compressed to be downloaded quickly (Markrali & Narlina 2020:14). If customers are thus visiting a website that is functioning well*,* it can bring about a positive experience linked to customer satisfaction (Librat 2021:14). Customers are also more likely to revisit a well-designed website system which makes it easy to return to previously displayed pages (Tandon & Kiran 2019:24). Order processing speed and order changes information such as out-of-stock conditions enhances e-customer satisfaction (Vasić *et al.* 2020:818). Informed waiting time is more tolerable than unexplained waiting for stock to become available (Makudza, Mugarisanwa & Siziba 2020:19).

5. RECOMMENDATIONS

To ensure effective e-customer satisfaction, online shops should recruit a reputable creative website designer who develops a website which is easy to navigate and can ensure website graphics that direct customers to product categories. Online customers will then find it less time consuming to shop online and find it easier to compare all the products within a category. It is further recommended that online shops ensure that on their website landing page there is detailed product information which can include plug-ins and pop ups to indicate exclusive offers, exceptional deals or promotions. Delivery conditions information must be stated on the website's landing page so that customers can make a wise choice as it can impact the final price paid.

Website functionality can be improved if product images can be compressed, whilst maintaining reasonable quality, so that customers can download the images easily and quickly. Although high quality images are ideal, the efficiency of image download matters more. However, easily downloadable images should not be influenced by poor network connectivity. Online stores can enhance e-customer satisfaction if showing out-of-stock conditions and continually checking stock levels of products to update their product availability status. It can also suggest alternative available products for stock-out conditions which will enable customers to make an immediate choice without being directed to a cart and when ready to pay find the product is unavailable.

6. LIMITATIONS OF THE STUDY AND FUTURE RESEARCH OPPORTUNITIES

The study only covered two online systems namely website and logistics functionality. Payment system functionality could also have been investigated as a measure of e-customer satisfaction. However when considering the larger study, payment security was also included as shopping experience, not as a standalone factor. Based on the findings and conclusions derived from this study, future research could be conducted in other developing countries and more variables could be added. In addition, a qualitative analysis of which system functionality elements can influence e-customer satisfaction can be undertaken to enable a broader understanding of the findings of this study.

7. CONCLUSIONS

The aim of this study was to establish whether website and logistics online system functionality drive e-customer satisfaction in SA. The study concludes that logistics functionality is not viewed as a standalone online system but regarded as part of shopping experience. However, the importance of website system functionality for e-customer satisfaction was confirmed. Thus, the study informs the need for online shops' marketers to meet and surpass e-customer satisfaction through the provision of well-designed websites with graphics that direct customers to product categories, a landing page that provides all delivery information needed by the customers, product images that can be downloaded quickly and a website system that can indicate out-of-stock products. The study also concludes that it is important for online shops to remain relevant and adapt continuously to the changing online shopping environment and changing customer expectations.

REFERENCES

African News Agency., 2020. *Warning: Online shopping fraud on the rise - FNB*. https://www.iol.co.za/business-report/economy/warning-onlineshopping-fraud-on-the-rise-fnb-49742435. Date of access 26 January 2024.

Ain, Q., & Siddiqui, D.A., 2021. 'Online experience in last-mile delivery and future purchase intentions in Pakistan', *The Role of Customer Satisfaction Electronic Journal*, pp. 1-29.

Al-Shukri, H.K.H., & Udayanan., 2019. 'Factors influencing online shopping intention: A study among online shoppers in Oman', *Humanities and Social Sciences Reviews*, 6(2): 64-73.

Ayambaa, B., & Chang, K.C., 2012. 'The influence factors of online purchase on customer satisfaction in Mongolian airlines', *International Proceedings of Economics Development and Research*, 57(15): 80-85.

Blackstock, G. 2020., *Organizational Culture and Knowledge Transfer in Enterprise Social Media*, Doctoral dissertation, Nova Southeastern University.

Cao, Y., Ajjan, H., & Hong, P., 2018. 'Post-purchase shipping and customer service experiences in online shopping and their impact on customer satisfaction: An empirical study with comparison', *Asia Pacific Journal of Marketing and Logistics*, 30(2): 400-416.

Cheung, C.M., & Lee, M.K., 2014. *Customer satisfaction with Internet shopping: A research framework and propositions for future research*. International Conference on Electronic Commerce (ICEC), Xi'an, China: 15-17 August.

Chiang, H.S., & Chen, C.C., 2014. 'Exploring switch intention of users' reading behaviour', *The Electronic Library,* 32(4): 434-457.

Christensen, J., Johnson, B., Turner, A., & Christensen, L.B., 2014. *Research methods, design and analysis,* London, United Kingdom: Pearson Education.

Çolins, D. ,2019. 'Using Horn's parallel analysis method in exploratory factor analysis for determining the number of factors', *Educational Sciences: Theory and Practice*, 16(2): 537-551.

Cyr, D., Head, M., Larios, H. & Pan, B., 2009. 'Exploring human images in a website design: A multi-method approach', *Management Information Systems Quarterly*, 33(3): 539-566.

Dangaiso, P., Makudza, F., Jaravaza, D. C., Kusvabadika, J., Makiwa, N., & Gwatinyanya, C., 2023. 'Evaluating the impact of quality antecedents on university students' e-learning continuance intentions: A post-COVID-19 perspective', *Cogent Education*, 10(1): 2218-2240.

Dangaiso, P., Makudza, F., Tshuma, S., Hogo, H., Mpondwe, N., Masona, C., & Tagwirei, D., 2023. 'Can social marketing undo the COVID-19 infodemic? Predicting customer preventive health behavior in the marginalized communities in Zimbabwe', *Cogent Public Health*, 10(1): 2230-2248.

Davis, M.J., 2010. 'Contrast coding in multiple regression analysis: Strengths, weaknesses, and utility of popular coding structures', *Journal of Data Science*, 8(1): 61-73.

Dawn, S.K., & Kar, U., 2011. 'E-tailing in India: Its issues, opportunities and effective strategies for growth and development', *ZENITH International Journal of Multidisciplinary Research*, 1(3): 101-115.

Deyalage, P.A., & Kulathunga, D., 2020. 'Exploring key factors for customer satisfaction in online shopping: A systematic literature review', *International Business Management*, 6(1): 163-190.

Diphoko, W., 2018. *Beware of fake digital platforms in online shopping*, https://www.iol.co.za/business-report/opinion/beware-of-fake-digital-platforms-in-online-shopping-18230615, Date of access 2 April 2024.

Ellis, C., Zucker, I.M., & Randall, D., 2018. 'The infernal business of contract cheating: Understanding the business processes and models of academic custom writing sites', *International Journal for Educational Integrity*, 14(1): 1-21.

Etikan, I., & Bala, K., 2017. 'Sampling and sampling methods', *Biometrics and Biostatistics International Journal*, 5(6): 215-217.

Gök, O., Ersoy, P., & Börühan, G. 2019. 'The effect of user manual quality on customer satisfaction: The mediating effect of perceived product quality', *Journal of Product and Brand Management*, 28(4): 475-488.

González, M., Comesaña, M., & Brea, B., 2017. 'Examining the relationship between service quality and user loyalty', *Journal of Park and Recreation Administration,* 13(1): 29-41.

Hai, H., 2020. Making industrialization in Africa sustainable. https://www.un.org/en/un-chronicle/making-industrialization-africa-sustainable, Date of access 22 April 2024.

Hair, J.F., Black, W.C., Babin, J.B., & Anderson, R.E., 2014. *Multivariate data analysis.* 7th ed. Essex, United Kingdom: Pearson.

Hayder, N.B., 2017. 'Analyzing website characteristics that influences customer buying behavior', *Global Journal of Management and Business Research*, 30-65.

Healey, J.F., 2014. *Statistics: A tool for social research*, Boston, United States of America: Cengage Learning.

Hu, M., Huang, F., Hou, H., Chen, Y., & Bulysheva, L., 2016. 'Customized logistics service and online shoppers' satisfaction: An empirical study', *Internet Research*, 26(2): 484-497.

Huang, H., & Ma, Y., 2014. *The security, privacy, and solutions of e-business*. Lancaster, Pennsylvania: DE Stech Publications.

Hung-Joubert, Y.T., 2017. 'Investigating the construct validity of quality measures influencing online shopping in a South African context', *Management & Marketing*, 12(3): 376-401.

Iconaru, C., 2012. 'Perceived risk when buying online: Evidence from a semi-structured interview', *Studia Universitatis Vasile Goldis Arad, Seria Stiinte Economice,* 22(2): 63-73.

Jahanshahi, A.A., Gashti, M.A.H., Mirdamadi, S.A., Nawaser, K., & Khaksar, S.M.S., 2011. 'Study of the effects of customer service and product quality on customer satisfaction and loyalty', *International Journal of Humanities and Social Science*, 1(7): 253-260.

Kannaiah, D., & Shanthi, R., 2020. 'Customer's perception on online shopping', *Journal of Marketing and Customer Research*, 13(2): 14-21.

Khan, S.A., Liang, Y., & Shahzad, S., 2015. 'An empirical study of perceived factors affecting customer satisfaction to re-purchase intention in online stores in China', *Journal of Service Science and Management*, 8(1): 291-305.

Khare, A., & Rakesh, S., 2011. 'Antecedents of online shopping behavior in India: An examination', *Journal of Internet Commerce*, 10(4): 227-244.

Kivunja, C., & Kuyini, A.B., 2017. 'Understanding and applying research paradigms in educational contexts', *International Journal of Higher Education,* 6(5): 26-41.

Kotler, P., & Keller, K.L., 2016. *Marketing Management* 15th ed. New York, United States of America: Pearson.

Landina, L.N., 2015. *Mobility versus stability in network distribution.* Alaska, New Jersey: Palmer Publishers.

Lemma, A., Parra, M. M., & Naliaka, L., 2022. 'The AfCFTA: unlocking the potential of the digital economy in Africa', 13(1): 15-26.

Librat, L., 2021. *Developing a captivating website using the 5C approach: A Theoretical Perspective.* Bucharest, Romania: Curtea Veche Publishing.

Lin, C., & Lekhawipat, W., 2014. 'Factors affecting online repurchase intention', *Industrial Management & Data Systems*, 114(4): 597-611.

Lorenzo, V., & Gomez, T., 2017. 'An evaluation of the online customer service quality dimensions, intention and purchase behaviour', *Journal of Business and Economic Prosperity,* 3(5): 118-132.

Madinga, N. W., & Lappeman, J., 2023. 'Social Media Sentiment Analysis: Online versus 'Brick and Mortar'Retailers in South Africa', *Journal of African Business*, 24(2): 345-362.

Maia, C.R., Lunardi, G.L., Dolci, D., & D'Avila, L.C., 2019. 'Competitive price and trust as determinants of purchase intention in social commerce', *BAR-Brazilian Administration Review*, 16(4): 1-24.

Makhitha, K., Van Scheers, L., & Mogashoa, C., 2019. 'Which customer attributes influence South African customers to shop online', *Journal of Business & Retail Management Research*, 13(4): 312-325.

Makudza, F., 2021. 'Augmenting customer loyalty through customer experience management in the banking industry', *Journal of Asian Business and Economic Studies* 28(3): 191-203.

Makudza, F., 2023. 'Service with a Smile: The differential effects of emotional labor on boundary spanners in the banking industry', *Services Marketing Quarterly*, 44(1): 1-15.

Makudza, F., Masiyanise, L., & Mtisi, E., 2020. 'The differential impact of bulk text message advertising on customer attention', *Journal of Industrial Distribution & Business,* 11(7): 7-17.

Makudza, F., Mugarisanwa, P., & Siziba, S. ,2020. 'The effect of social media on customer purchase behaviour in the mobile telephony industry in Zimbabwe', *Dutch Journal of Finance and Management,* 4(3): 17-28.

Makudza, F., Sandada, M., & Madzikanda, D.D., 2022. 'Modelling social commerce buying behaviour: An adaption of the sequential customer decision making model', *Management Research and Practice,* 14(1): 17-29.

Maliq, D., 2021. *Customer relationship management. A handbook of academic studies.* University of Hull, United Kingdom.

Marandu, E., Makudza, F., & Ngwenya, S., (2019). 'Predicting students intention and actual use of e-learning using the technology acceptance model: A Case from Zimbabwe'*, International Journal of Learning, Teaching and Educational Research,* 18(6): 10-127.

Markrali, N., & Narlina, M., 2020. 'Exploring visuals in website design on behavioural experience of customers in fast food industry', *International Journal of Multimedia Analysis,* 1(2): 12-23.

Masengu, R., Raouyashadi, W., Makudza, F., & Muchenje, C., 2022. 'Unpacking the effect of social media infodemic on customers' panic banking behaviour during the Covid-19 pandemic. Evidence from the banking sector in Oman', *European Journal of Business and Management,* 7(3), 84-90.

Mathur, P., 2019. South African shopping trends: Connected retail wins customers'. https://ivend.com/blog/south-african-shopping-trends-connected-retail-wins-customers/. Date of access 1 September 2024.

Matic, M., & Vojvodic, K., 2014. 'Customer-perceived insecurity of online shopping environment', *International Review of Management and Marketing*, 4(1): 59-65.

Menoe, D., & Barnard, B., 2020. 'Online shopping: Motivation, loyalty and process', *Expert Journal of Marketing*, 8(1): 48-72.

Meskaran, F., Ismail, Z., & Shanmugam, B., 2013. 'Online purchase intention: Effects of trust and security perception', *Australian Journal of Basic and Applied Sciences*, 7(6): 307-315.

Moreno, L., Valencia, X., Pérez, E.J., & Arrue, M., 2018. *Exploring the Web navigation strategies of people with low vision.* Proceedings of the XIX International Conference on Human Computer Interaction, Palma, Spain: 12-14 September.

Motsi, A., Gumbe, S., Muzondo, N., & Makudza, F., 2023. 'Service delivery in urban local authorities: A literature review paper', *Journal of Industrial Distribution & Business, 14*(10): 23-33.

Parmer, L.L., Dillard Jr, J.E., & Lin, Y.C., 2021. 'The 8Ps marketing mix and the buyer decision-making process', *Journal of Marketing Development and Competitiveness*, 15(4): 32-44.

Pearson, A., Tadisina, S., & Griffin, C., 2012. 'The role of e-service quality and information quality in creating perceived value: Antecedents to website loyalty', *Information Systems Management*, 29(3): 201-215.

Popli, A., & Mishra, S., 2015. 'Factors of perceived risk affecting customers' online purchase intention', *Pacific Business Review International*, 8(2): 49-58.

Qin, X., Liu, Z., & Tian, L., 2020. The strategic analysis of logistics service sharing in an e-commerce platform. *Omega*, 9(2): 102-153.

Rahi, S., 2017. 'Research design and methods: A systematic review of research paradigms, sampling issues and instruments development', *International Journal of Economics and Management Sciences*, 6(2): 1-5.

Rajendran, S.D., Wahab, S.N., Ling, Y.W., & Yun, L.S., 2018. 'The impact of logistics services on the e-shoppers' satisfaction', *International Journal of Supply Chain Management,* 7(5): 461-469.

Rawland, F., & Carnis, M., 2021. 'The differential effect of electronic marketing on customer satisfaction and purchase intention', *International Journal of Electronic Business and Management,* 2(1): 65-74.

Rita, P., Oliveira, T., & Farisa, A., 2019. 'The impact of e-service quality and customer satisfaction on customer behavior in online shopping', *Heliyon,* 5(10): 1-14.

Rudansky-Kloppers, S., 2014. 'Investigating factors influencing customer online buying satisfaction in Gauteng, South Africa', *International Business & Economics Research Journal (IBER)*, 13(5): 1187-1198.

Rudansky-Kloppers, S., & Strydom, J.W., 2020. 'Target market solutions in South African online businesses: The generational effect', *Journal of African Business*, 22(2): 209-234.

Santoso, A., Bidayati, U., & Hendar, H., 2019. 'Factors influencing online purchase intention: A customer behavioral study on Indonesia', *International Journal of Innovation, Creativity and Change,* 9(5): 1-21.

Saunders, M., Lewis, P., & Thornhill, A., 2016. *Research methods for business students.* Harlow, United Kingdom: Pearson Education.

Singh, M., & Matsui, Y., 2017. 'How long tail and trust affect online shopping behavior: An extension to UTAUT2 framework', *Pacific Asia Journal of the Association for Information Systems*, 9(4): 1-24.

Slindist, S., 2020. 'Competitiveness through courier services: The effect of delivery schedules and time utility', *International Journal of Supply Chain and Procurement,* 2(1):1-13.

Taleizadeh, A., Rezvan-Beydokhti, S., & Cárdenas-Barrón, L., 2018. Joint determination of the optimal selling price, refund policy and quality level for complementary products in online purchasing. *European Journal of Industrial Engineering,* 12(3): 332-363.

Tandon, U., & Kiran, R., 2019. 'Factors impacting customer satisfaction: An empirical investigation into online shopping in India', *Journal of Information Technology Case and Application Research*, 21(1): 13-34.

Tandon, U., Kiran, R., & Sah, A., 2017. 'Analyzing customer satisfaction: Users' perspective towards online shopping', *Nankai Business Review International,* 8(3): 266-288.

Tasara, G., Makudza, F., Ndlovu, G. N., & Masengu, R., 2021. 'Nation branding: Twenty-first century branding dynamics impacting emerging economies in the global marketplace', *Skyline Business Journal,* 17(2): 44-60.

Thompson, C.B., 2009. 'Descriptive data analysis', *Air Medical Journal*, 28(2): 56-59.

Topaloğlu, C. 2012., 'Customer motivation and concern factors for online shopping in Turkey', *Asian Academy of Management Journal*, 17(2): 1-19.

Vakulenko, Y., Shams, P., Hellström, D. & Hjort, K., 2019. 'Online retail experience and customer satisfaction: the mediating role of last mile delivery',. *The International Review of Retail, Distribution and Consumer Research*, 29(3): 306-320.

Vasić, N., Kilibarda, M. & Kaurin, T., 2019. 'The influence of online shopping determinants on customer satisfaction in the Serbian market', *Journal of Theoretical and Applied Electronic Commerce Research*, 14(2): 70-89.

Vasić, N., Kilibarda, M., Andrejić, M., & Jović, S., 2020. 'Satisfaction is a function of users of logistics services in e-commerce', *Technology Analysis and Strategic Management*, 33(7): 813-828.

Vijay, S., Prashar, S., & Sahay, V., 2019. 'The influence of online shopping values and web atmospheric cues on e-loyalty: Mediating role of e-satisfaction', *Journal of Theoretical and Applied Electronic Commerce Research*, 14(1): 1-15.

Wu, X., Xiong, J., Yan, J., & Wang, Y., 2021. 'Perceived quality of traceability information and its effect on purchase intention towards organic food', *Journal of Marketing Management*, 37(13):1-20.