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MARKETING | RESEARCH ARTICLE

Examining the effects of electronic service quality on online banking customer satisfaction: Evidence from Zambia

Bruce Mwiya^{1*}, Mathew Katai¹, Justice Bwalya¹, Maida Kayekesi¹, Sekela Kaonga¹, Edwin Kasanda¹, Christopher Munyonzwe¹, Bernadette Kaulungombe¹, Eledy Sakala¹, Alexinah Muyenga¹ and Donald Mwenya¹

Abstract: While several studies examine the influence of service quality on customer satisfaction in physical retail banking offices, there is a shortage of studies on service quality in the digital space of banking. Further, many developing country contexts such as Zambia are under-researched, limiting the generalisability of prior research conclusions. Hence, the purpose of this research is to examine electronic service quality in online retail banking and its influence on customer satisfaction during COVID-19 pandemic restrictions in the under-researched context of Zambia. Based on a quantitative correlational design, primary sample data were collected using a structured questionnaire from 314 bank customers from two of Zambia's largest cities, Lusaka and Kitwe. The data were analysed using correlation and multiple regression models. The findings indicate that the E-SERVQUAL model is applicable in the Zambian context and that security, website attribute, privacy, responsiveness, efficiency, fulfilment and reliability are indeed relevant to electronic service quality and they affect customer satisfaction; the multiple coefficients of determination (51.1%) and correlation (71.5%) indicate a large effect size. This extends the E-SERVQUAL model into the under-researched developing country context of online banking in Zambia during the COVID-19 restrictions. The

ABOUT THE AUTHOR

The authors belong to the Strategy, Enterprise and Marketing (SEM) Research and Consultancy Cluster in the Copperbelt University Business School, P.O. Box 21,692, Kitwe, Zambia. This article is one of the many outcomes of the service quality project the cluster has been working on since 2015.

PUBLIC INTEREST STATEMENT

Accessing financial services electronically has become more important in the context of COVID-19 restrictions since 2020. Online banking possibilities are further enhanced with an increase in the proportion of citizens with internet access, e.g., in Zambia, out of a population of 18.65 million, 5.48 million internet users signified an internet penetration rate of 29.4% in January 2021¹ compared to 20.4% in 2016 and 5% in 2012.² The advancements in internet usage and e-commerce have increased competition among banks as they encourage customers to go electronic. This study examines the effects of privacy, efficiency, responsiveness, fulfilment and reliability on online banking customer satisfaction. Suggestions are made to practitioners and policy-makers for improving service provision in the under-researched developing country context of Zambia.

implications to policy and practice are that improving security, website attributes, privacy, efficiency, responsiveness, fulfilment and reliability would result in higher customer satisfaction and usage of the online facilities. Since the study was limited to two, albeit the biggest, cities of Zambia, increasing the number of cities and countries sampled would improve generalisability.

Subjects: Services marketing; Quality; Retail banking

Keywords: e-service quality; online banking security; website attributes; privacy; efficiency; responsiveness; fulfilment; reliability; E-SERVQUAL; Zambia; Developing Country; Africa; COVID -19

JEL Classification: M31; L15; I21

1. Introduction and Background

Over the past months, the world has been experiencing a pandemic that has necessitated more contactless and innovative approaches to doing business in all sectors and the banking industry is no exception. Coronavirus disease popularly known as Covid-19 was originally diagnosed in Wuhan China (Zhu et al., 2020). The disease is transmitted between people directly, indirectly (through contaminated objects or surfaces), or through close contact with infected people via mouth and nose secretions (WHO, 2020). In the wake of the pandemic, various governments enforced travel restrictions, quarantines and in extreme cases border shutdowns (WHO, 2020, 2021). The banking industry was also required to put in place the necessary measures to stop the spread of the virus.

Technological advances have affected the way organisations interact with their customers to deliver their products and services (Nimako et al., 2013). Most companies have embraced the advances in technology and are adopting all the necessary platforms that can be used to efficiently interact with and serve their customers. One such technology that has been embraced by the service industry to interact and deliver to their customers is the internet (Rod et al., 2009). With social distancing being encouraged, the financial sector, particularly the banking sector has accelerated the use of financial digital services by encouraging customers to rely on online banking. Banks play an important role in the economic development of every country by offering services such as loans, advances, deposits and money transfers. In a nutshell, banks receive money from customers in the form of deposits at low-interest rates and lend this money to other customers who need it in the form of loans, overdrafts and advances (savings-deficit units) at higher interest rates (Mwiya, Bwalya et al., 2017).

Banks have embraced internet technology to deliver online banking which has become an important tool for electronic commerce i.e. e-commerce (Raza et al., 2020). Given the current crisis, people are relying on online banking more than ever before and banks are playing a vital role in slowing the spread of the coronavirus by providing customers with e-services that will help customers access bank transactions in the comfort of their homes. Online banking is a part of electronic banking which consists of several electronic distribution channels (Ghane et al., 2011). It is a process of delivery of banking services and products through electronic channels such as telephone, internet, cell phone etc (Sikdar et al., 2015). So electronic banking is a term used to describe the services offered to customers without physically visiting the bank offices. All of the following terms refer to different forms of electronic banking: personal computer (PC) banking, online banking, ATM, home banking, mobile banking and virtual banking (Rahi & Ghani, 2016). The rapid advancements in internet technology and e-commerce have resulted in high competition in the banking industry and banks have been compelled to encourage customers to adopt online banking (Anuar et al., 2012). Therefore, to remain competitive and acquire new customers, banks must provide online quality services that are reliable and able to satisfy customer needs, especially at such a time when the virus has caused a limitation on face-to-face interactions. In the context

of covid-19, superior customer experience means clarity and transparency, support for digital tools with which many customers are still unfamiliar, and new online products and services for customers (Bensley et al., 2020). It would thus be insightful for scholars, practitioners and policy-makers to establish whether pandemic-specific conditions have an impact on the applicability of the e-service quality model.

In the context of Zambia, there has been an increase in the number of individuals and households that own mobile phones and a computer with access to the internet (Kemp, 2021). In fact, out of a population of 18.65 million, 5.48 million internet users signified an internet penetration rate of 29.4% in January 2021 compared to 20.4% in 2016 and 5% in 2012. (Kemp, 2021). The advancements in internet usage and e-commerce have increased competition among banks as they encourage customers to go electronic. With the recent introduction of online banking in Zambia, it is important to examine the effects of e-service quality for online banking and contribute meaningfully to the ongoing discussion in the literature about the interplay between e-service quality and customer satisfaction in Sub-Saharan African countries. Studies have been conducted using the E-SERVQUAL model to examine the effect of e-service quality on online banking customer satisfaction. For example, in India, A. George and Kumar (2014) conducted a similar study and established that the e-SQ dimensions in internet banking have a significant and positive effect on customer satisfaction (A. George & Kumar, 2014). However, the model has not been tested in many developing countries, for example, in Zambia, no studies have been conducted to examine the effects of e-SQ for online banking on customer satisfaction. This study seeks to fill this contextual knowledge gap by applying the model (E-SERVQUAL).

Zambia is a lower-middle-income country with a per capita income of US\$,1646.14 equivalent to 13% of the world's average (World Bank, 2018). The country has a collectivist culture where people regard themselves as "we" rather than "I", thus individuals feel responsible for the well-being of others including the organisations they belong to or study in (Hofstede, 2022). In addition, culturally, Zambia has high power distance and low masculinity scores (Hofstede, 2022) and so individuals are expected not only to respect and not question authority but also to be seen to be supportive of others. This may influence how individuals evaluate service quality elements. Therefore, it would be insightful for scholars, practitioners and policy-makers to explore if prior research findings can hold in such a different context. It would also be insightful for scholars, practitioners and policy-makers to establish whether pandemic-specific conditions have an impact on the applicability of the e-service quality model

Based on the aforementioned, the study examines the effects of security, website attributes, privacy, efficiency, responsiveness, fulfilment, and reliability for online banking on customer satisfaction. Thus, the contributions of this research are twofold. Firstly, prior studies exploring e-service quality in internet banking in India, Iran and Egypt suggest that customer satisfaction can be explained by perceived service quality in each of the seven dimensions of e-service quality (A. George & Kumar, 2014). However, Sub Saharan African countries are under-researched and this limits the generalisability of prior research conclusions. Hitherto, literature with a Zambian context is non-existent. The consequences of shortages of research in the Zambian context entail that stakeholders have no basis for developing strategies and setting resource allocation priorities to improve service quality based on context-specific conclusions. Therefore, this study contributes to filling this contextual gap in knowledge, thus extending the generalisability of prior research conclusions and improving external validity (Eden, 2002; Evanschitzky et al., 2007; Miller & Bamberger, 2016). Indeed, the study confirms the applicability of the ESQUAL model in a collectivist, high power distance, feminine and lower-middle-income country like Zambia.

Secondly, the current study is among the pioneers to examine the ESQUAL model during the COVID-19 pandemic when the migration of service provision to digital platforms is no longer an option but a necessity for the survival of business operations, especially in the banking sector. The study shows that to get more customers to use internet banking services, emphasis should be

placed on the reliability, fulfilment, efficiency and responsiveness of the digital platforms to deliver on the promises made to customers. This however does not mean neglecting enhanced security, privacy and website attributes for ease of access and navigation.

The rest of the paper is structured as follows: the next section reviews the literature and develops hypotheses before the research methods are highlighted. Thereafter, results are reported and discussed concerning both the conceptual model and prior empirical studies. Lastly, conclusions, limitations and directions for future research are presented.

2. Literature Review and Hypotheses

This section reviews the literature about e-service quality dimensions, customer satisfaction and loyalty in the context of online or internet banking.

3. Significance of Online Banking

Many innovations have recently modified the way banking activities are carried out because of novel forms of distribution of financial services (Nimako et al., 2013). Among such innovations is the use of online services in banking, usually referred to as internet or online banking. It is the provision of information or service by a bank to its customers via the internet (Lin et al., 2015). It is viewed as a supplemental channel used in conjunction with other channels to provide the convenience of banking anytime from one's home or workplace, without having to incur some of the costs associated with a physical visit to the branch or waiting in queues at ATMs and within banking halls. Online banking eliminates physical and geographic boundaries and time limitations of banking services (Asad et al., 2016). As compared to traditional banking, online banking replaces labour with machines (computer networks) which are significantly low in cost and available 24/7 (Wu et al., 2014).

4. Service Quality and Customer Satisfaction Formation

Service Quality is defined as consistency with fixed specifications (Paul et al., 2016) in line with the characteristics of a product to meet a client's needs. In addition, the product quality may differ from that of services as the former is tangible, whereas the latter is intangible. The American Society for Marketing (AMA), for example, defines services as activities or benefits that are offered for sale or that are offered for being related to a particular product. A service can also be defined as any behaviour or act based on a contract between two parties: the provider and the receiver, and the essence of this reciprocal process is intangible (Marković & Janković, 2013). That is to say, it is a set of characteristics and overall properties of the service which aim to satisfy the clients and meet their needs. In this vein, banks must care about the quality of their services since this quality is considered the essence or core of strategic competition.

The disconfirmation theory emerges as the primary foundation for satisfaction models. This theory posits that customer satisfaction is determined by the discrepancy between perceived performance and cognitive standards such as expectations and desires. Customer expectation can be defined as a customer's pre-trial beliefs about a product. Expectations are viewed as predictions made by consumers about what is likely to happen during an impending transaction or exchange (Akaka & Vargo, 2014; Lusch & Vargo, 2014). Perceived performance is defined as a customer's perception of how product performance fulfils their needs, wants and desires. Perceived quality is the consumer's judgment about an entity or product or service's overall excellence or superiority (Samudro et al., 2020). Disconfirmation is defined as a consumer's subjective judgments resulting from comparing their expectations and their perceptions of performance received.

5. Service Quality Framework, Antecedents and Consequences

Numerous studies have been carried out to conceptualise service quality. In defining it, practitioners highlight key dimensions that customers use while evaluating the services (Ariff et al., 2012). The conceptualisation of service quality should include both the service delivery process (Parasuraman et al., 1985) as well as the service outcomes (Hamadi, 2010). In the early 1980s, the Nordic model was proposed by Grönroos (1984) defining the dimensions of service quality to

include technical quality (what consumers get), functional quality (how the consumer gets the services) and corporate image (how the consumer perceives the firm and its services). Similarly, Lehtinen and Lehtinen (1991) offered another model with three dimensions of service quality viz. physical, interactive and corporate dimensions. Physical quality entails the quality of physical products involved in service delivery and the consumption-interactive dimension refers to the interaction between the customers and the service organisation's employees.

SERVQUAL, a measurement tool developed by Parasuraman, Zeithaml and Berry in 1985 to measure service quality included ten dimensions which are tangibility, reliability, responsiveness, communication, access, competence, courtesy, credibility, security and understanding. Later in 1988, the authors reduced the antecedents to five dimensions namely: tangibles, reliability, responsiveness, assurance and empathy to measure service quality.

The digital revolution has undoubtedly changed almost every aspect of mankind's daily life in the twenty-first century. The power of the World Wide Web and global eCommerce is becoming more significant with the increasing number of people around the world getting connected to the internet (Shanka, 2012; Siu & Mou, 2005). There are several competitive advantages associated with the adoption of technology in service organisations which include the creation of entry barriers, enhancement of productivity and increase in revenue generation from new services (Hua et al., 2015). Additionally, developments in information and communication technology have provided a platform by which banks can design, develop and deliver services that can be perceived by customers as superior while accessing online channels for banking transactions (McKechnie, 2011).

Service quality is one of the main factors that determine the success or failure of electronic commerce (Kassim & Abdullah, 2010). Lately, it is a very important component in any banking business. Service quality is the difference between customer expectations for the service encounter and the perceptions of the services received (Chi & Qu, 2008). Service quality can also be defined as the consumer's overall impression of the relative inferiority/superiority of the organisation and its services (Götz et al., 2010). Accordingly, service quality is defined as how well a delivered service level matches customer expectations. Customers perceive the quality of services of online banking based on the performance of online delivery systems and not on the processes in which the delivered service is developed and produced.

E-SERVQUAL measures website e-SQ as perceived by customers (Li & Suomi, 2009; V.A. Zeithaml et al., 2000). It is a method for measuring website e-SQ that is based on the same principle as the original SERVQUAL method and includes some dimensions similar to those of the SERVQUAL model. The E-SERVQUAL scale contains a core and recovery scale, represented by four and three dimensions respectively. The core scale is used to measure the customer's perceptions of service quality delivered by online retailers. The recovery scale refers to specific situations when a customer has a question or runs into a problem (V. A. Zeithaml et al., 2002). In simpler terms, the core scale refers to the quality of the website itself, while the recovery scale is more concerned with the actual performance of the company, rather than with website performance.

V.A. Zeithaml et al. (2000) provided a comprehensive concept of online service quality based on pre and post-service aspects. According to them, e-service is the extent to which a website facilitates efficient and effective shopping, purchasing and delivery of products and services to users and consumers and includes dimensions such as access, ease of navigation, security/privacy, responsiveness, trust/assurance, site aesthetics and price knowledge, which are significant indicators of online service quality. Furthermore, Loiacono et al. (2002) established a scale called WEBQUAL with twelve dimensions viz. information fit to need, interaction, trust, response time, design, intuitiveness, visual appeal, innovativeness, flow, integrated communication, business process and substitutability. Later Yang et al. (2001) expressed online service quality to be the function of six elements namely ease of use, content, the accuracy of content, timeliness of response, aesthetics and privacy.

Ariff et al. (2012) identify the need for businesses to focus on e-services in their e-business, and to understand the importance of e-service quality as a differentiation strategy. Businesses also need to recognize that the web experience presents the brand positioning to online consumers, and may be an important element in the establishment of trust and relationships with customers (Rahi et al., 2017). According to A. George and Kumar (2014), the service quality dimensions that apply to online banking are website attributes, reliability, responsiveness, fulfilment, efficiency, privacy and security. These seven dimensions were adopted for this study and they are reflected in the development of each hypothesis in the next paragraphs.

6. Hypotheses Development

The section covers the development of hypotheses in the following order: security, website attributes, privacy, efficiency, fulfilment, responsiveness and reliability. The seven dimensions of electronic service quality were adopted from A. George and Kumar (2014).

6.1. Security and Customer Satisfaction

Online security is believed to be the extent to which customers believe that the website is safe from intrusion by hackers and third parties or has less chance for monetary loss due to transaction error or server error (Parasuraman et al., 2002; Suhartanto et al., 2019). It is the degree of freedom from risk and doubts for customers and it involves a system that ensures the feeling of safety in their transactions and personal information (Parasuraman et al., 2005). This is to say that customers are more likely to transact online if they feel a sense of security on the bank's website. Empirical research in Chile (Moraga et al., 2010), India (A. George & Kumar, 2014) and Saudi Arabia (Sohail & Shaikh, 2008), established that security has an impact on customer satisfaction. That is to say that customers that perceive a bank to have tight or high security are more likely to be satisfied than those that do not. Hence the study posits as follows:

H₁: Online security has a positive effect on customer satisfaction

6.2. Website Attributes and Customer Satisfaction

Website attributes are characteristics of a website that serve the purpose of helping grow a customer base, maintain existing customers as well as attract new ones (Ahmad & Al-Zu'bi, 2011). Given that customers prefer websites which are easier to use, Scholars maintain that website usability is considered to be an aspect of quality and at the same time an important antecedent of customer satisfaction during and after use (Ariff et al., 2012). Thus, website usability remains an important web attribute that facilitates customer satisfaction. Empirical studies in Ghana (Nimako et al., 2013), Spain (Casaló et al., 2008) and Malaysia (Ling et al., 2015) conclude that website attributes influence customer satisfaction. Therefore, this study postulates as follows:

H₂: Website attributes have a positive relationship with customer satisfaction

6.3. Privacy and Customer Satisfaction

Privacy means that personal information is not shared and that credit or debit card information is secured (Sakhaei et al., 2014). This dimension deals with how a website proves to be trustworthy for its customers. Trust is a commonality within the security/privacy dimension and is based primarily on industries using e-commerce platforms that incorporate online transactions (Van Riel et al., 2003). The issue of privacy has been a critical issue in online retailing and consumers are very wary in this regard due to the dangers and risks of releasing personal information to unknown sources (Sharma & Sheth, 2004; Van Riel et al., 2003). Empirically, prior research in Malaysia (Ariff et al., 2012) and Lebanon (Hammoud et al., 2018) have shown that privacy positively influences customer satisfaction. Hence the study forwards the following hypothesis:

H₃: Privacy is positively associated with customer satisfaction

6.4. Responsiveness and Customer Satisfaction

Responsiveness refers to flexibility, prompt delivery, consistency and accuracy of service delivered. Other researchers refer to responsiveness as interactivity or personalization, which relates to how the website responds to its customers in an online environment (V. A. Zeithaml et al., 2002). From a service organisation providing e-services, responsiveness implies how quickly and efficiently customer queries, questions or complaints are addressed or responded to. Indeed, responsiveness is the effective handling of problems and returns through the site as well as the willingness to help online customers (Parasuraman et al., 2005). Concerning complaint handling and inquiries, the service quality will be greatly affected by the bank staff's willingness to assist clients. Scholars in China (Yoon, 2010), Malaysia (Kadir et al., 2011) and Bangladesh (Huda, 2020) concluded that responsiveness affects customer satisfaction. This leads to the sixth research hypothesis:

H₄: Responsiveness is positively associated with customer satisfaction

6.5. Efficiency and Customer Satisfaction

Efficiency refers to the ease and speed of accessing and using the site (Parasuraman et al., 2005). It entails firms responding efficiently to consumers' inquiries by facilitating the searching, retrieving, and integration of information (Li & Suomi, 2009; Yang et al., 2003). Examples of efficiency include the speed and ease of responses to customer queries, order acknowledgement, and delivery and payment information via automated responses (Singh, 2002), download speed (Poon, 2008), and well-structured sites (Santos, 2003). Empirical research in Iran (Salarzahi et al., 2014), Jordan (Alawneh et al., 2013) and Malaysia (Kadir et al., 2011) conclude that efficiency has an impact on customer satisfaction. Therefore, this leads to the next research hypothesis of the study:

H₅ Efficiency has a positive effect on customer satisfaction

6.6. Fulfilment and Customer Satisfaction

Fulfilment means the accuracy of service promises and delivery of the product in the promised time (Sakhaei et al., 2014). It is important to note here that some studies do not treat fulfilment as a distinct dimension but instead recognise it under the efficiency dimension. This is backed by Parasuraman et al. (2005) defining fulfilment as the extent to which a website's promises about order delivery and item availability are fulfilled. This definition is intrinsically embedded in the efficiency dimension. In the context of online banking, fulfilment means the extent to which the website meets customer requirements in terms of promptness of web page loading and confirmation of requested services (A. George & Kumar, 2014). However, this has more to do with the internet service provider because the log-in and log-out speed mainly depend on the provider.

Banks have a service level agreement which is simply the acceptable time within which service has to be performed. Customers also have a specific time frame in which they expect a service to be executed. Therefore, meeting or exceeding customer expectations will result in a good or better customer experience which will, in turn, lead to customer satisfaction. Empirical research in Egypt (Hussien & Aziz, 2013), India (Khan et al., 2009) and Iran (Sakhaei et al., 2014) have shown that fulfilment greatly impacts customer satisfaction. Therefore, this leads to the next research hypothesis:

H₆: Fulfilment has a positive relationship with customer satisfaction

6.7. Reliability and Customer Satisfaction

Reliability refers to the ability to perform the promised service accurately and consistently, including the frequency of updating the website, prompt replies to customer enquiries, the accuracy of online purchasing and billing, prompt deliveries and keeping personal information secure (Omar et al., 2015). Reliability is factored as a leading dimension of e-service quality and refers to the consistency of delivery and dependability concerning website design (Omar et al., 2015). An online provider is considered reliable if it performs the service as promised, the website is available 24/7 and is in working condition (Suhartanto et al., 2019). In simple terms, it is the trust the user has in the bank's online service to deliver as promised and to update the website. Therefore, reliability affects the satisfaction of a website user. Based on empirical literature in Iran (Sakhaei et al., 2014), Egypt (El Saghier & Nathan, 2013April) and India (A. George & Kumar, 2014) establishing that reliability influences customer satisfaction, this study posits as follows:

H₇: Reliability has a positive effect on customer satisfaction

7. Customer Satisfaction and Loyalty

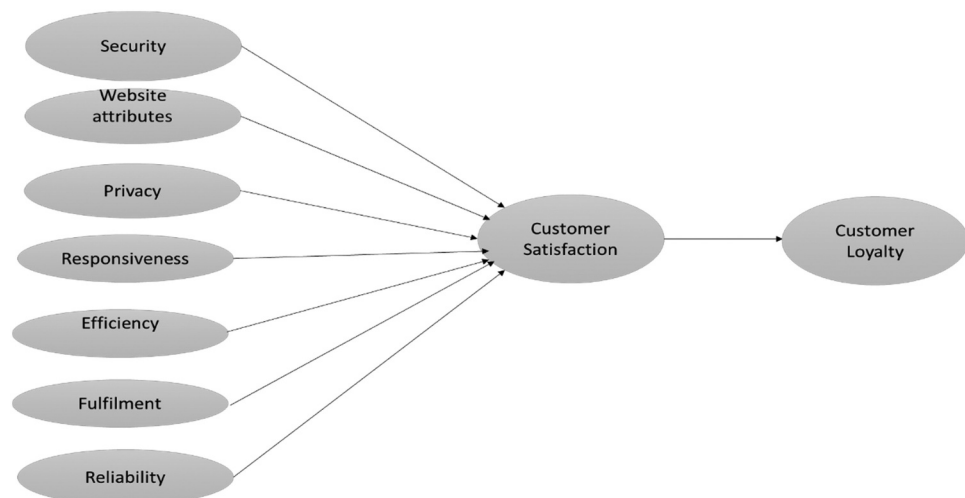
Customer satisfaction is the extent to which a user thinks that the custody or utilization of the facility meets or even exceeds expectations by meeting the customer's needs (Raza et al., 2020). It is the feeling associated with the outcome that is equal to or beyond what was expected. Satisfaction is thus based on the ability of a service provider to meet or surpass the expectations of a customer (Mwiya et al., 2017).

Scholars such that high customer satisfaction has an indirect impact on customer retention (Walsh et al., 2009). This is because consistent customer satisfaction reduces the customer's transaction costs as the customer no longer has to search for another service provider. Thus customer satisfaction reduces perceived risk and encourages greater customer loyalty, functioning as a formidable barrier to market entry. This resonates with extant empirical evidence in Pakistan (Raza et al., 2020), Zambia (Mwiya et al., 2017) and Malaysia (Amin, 2016) that customer satisfaction is associated with customer loyalty. As a consequence, this study hypothesises as follows:

H₈: Customer Satisfaction has a positive association with Customer Loyalty

Based on the foregoing hypotheses, the conceptual model in Figure 1 reflects the direction of influence in the relationships being explored.

Figure 1. Antecedents of customer Satisfaction and Consequences.



8. Methods and Measurement

8.1. Population, Sample and Data Collection

The purpose of this study was to examine the effects of security, website attributes, privacy, efficiency, responsiveness, fulfilment, and reliability on online banking customer satisfaction in the under-researched developing country context of Zambia. As such the study employed a quantitative correlational design and a systematic random sampling method where every tenth retail bank customer was asked to complete the questionnaire while taking into account ethical considerations. A few customers answered the questionnaire via email.

Copperbelt Zambia has a population of 2.74 million representing 15% of the national population (Zamstats, 2021; World Bank, 2021). The target population for this research was all 12 commercial banks' customers in Copperbelt Zambia. The sample size as calculated by the Raosoft sample size calculator at a confidence level of 95% with a 5% margin error was 377. Questionnaires were distributed to this sample from which only 350 were answered and collected. It was found that 36 of the collected questionnaires were inconsistent and not fully answered, therefore only 314 were considered for analyses in this research.

The resulting sample profile is given in Table 1 below showing gender, age and the name of the institution with which they bank. The respondents that took part in the survey were 214 males and 100 females representing 68.2% and 31.8% respectively. For age, most respondents were over 30 years. The study found that 85 of the respondents were between 20 and 29 years representing 27.1% of the respondents. Secondly, 193 respondents were 30 to 39 years old representing 61.5% of the total number of respondents. 24 of the respondents were 40 to 49 years, representing 7.6%. Lastly, 12 respondents were 50 years or older representing 3.8% of the total respondents.

8.2. Measurement Model Validity

To assure internal validity, the questionnaire comprised 24 items adapted from prior similar studies. Concerning the construct of security (Featherman & Pavlou, 2003) the questionnaire items included: "I do not feel safe to use Internet banking"; "I am worried that others may access my Internet account"; "Internet servers may process payments incorrectly"; and, "The banks give no compensation when errors occur". Website attributes (A. George & Kumar, 2014) had two items: "The web site contains useful help"; and, "the Website design is attractive". Privacy (Rod et al., 2009) was measured using two items: "My personal information is secured and protected on my bank's site"; and, "The bank will not misuse my personal information". Regarding efficiency (Sohail & Shaikh, 2008) the items included: "finding what I need is easy and simple"; "Easy options for cancelling transactions are provided"; and " Internet banking website of my bank always satisfies all my service needs".

Fulfilment (Khan et al., 2009) had 4 items namely: "Web pages load promptly"; "Log in to Internet banking website is fast"; "The site confirms the service requested quickly"; "Log out speed of my account is fast". Concerning Responsiveness (Culiberg & Rojšek, 2010), the items included: "The Bank takes care of Internet banking complaints quickly"; and, "There is a quick response from my bank to customer queries". When it comes to reliability (Huda, 2020) the items included: "I trust in Internet banking services presented on the bank's website"; "The bank delivers Internet banking services as promised"; "The website is updated continuously". Lastly, customer satisfaction and behavioural intentions (Mwiya et al., 2017; Rod et al., 2009) were measured using such items as: "Overall, I am satisfied with my experience of the bank's service"; " Overall, I am satisfied with the bank's internet-based transactions"; "Overall, I am satisfied with the products/ services offered by the bank"; "Overall, I am satisfied with the bank"; "I can recommend the bank's internet banking services to my friends and family"; and, "I will continue to use the bank's internet banking services when the need arises".

Table 1. Respondents Profile

Characteristic	Responses	Frequency	Valid Percent
Gender	Male	214	68.2
	Female	100	31.8
Age Group	20 to 29 years	85	27.1
	30 to 39 years	193	61.5
	40 to 49 years	24	7.6
	50 and above	12	3.8
Education Level	Form 5/Grade 12 and below	15	4.8
	Certificate	5	1.6
	Diploma	48	15.3
	Undergraduate degree	150	47.8
Length of Online Banking use	Postgraduate degree	96	30.6
	Less than 3 months	30	9.6
	3 to 12 months	51	16.2
Online Transactions Frequency	Greater than 12 months	233	74.2
	1 to 9 times	216	68.8
	10 to 19 times	60	19.1
Which bank?	20 and above	38	12.1
	FNB	53	16.9
	ABSA	36	11.5
	STANDARD CHARTERED	38	12.1
	STANBIC	33	10.5
	ZANACO	51	16.2
	ATLAS MARA	33	10.5
	INVESTRUST	21	6.7
	INDO ZAMBIA	22	7
	ECO	14	4.5
	CAVMONT	4	1.3
	UBA	5	1.6
	ACCESS	4	1.3
	Total	314	100

All the items were gauged on a five-point Likert scale ranging from 1 = "Strongly disagree" to 5 = "Strongly Agree". The questionnaire was pilot tested before mass distribution to ensure that the questions were clear and where necessary correctly rephrased. Factor analysis was performed (since the sample was >150) to establish the unidimensionality of constructs and the validity of the independent variables (Cohen, 1988; Pallant, 2016). Specifically, exploratory factor analysis with principal components extraction and Varimax rotation was conducted. The assumptions for factorability of the data (with correlation coefficients above 0.30) were fulfilled since the Kaiser-Meyer-Olkin measure of sampling adequacy was 0.945 (minimum value required 0.60), and Bartlett's Test of Sphericity was significant (Approx. Chi-square = 7130.496, df = 23, p = 0.000). The cumulative percentage variance explained was 64.7%. To check for consistency and stability of items, the factor loadings resulted in clear seven dimensions of e-service quality with Eigenvalues above 1. All Cronbach's Alpha values were above the minimum threshold of 0.70 (Pallant, 2016) as indicated in Table 2.

Table 2. Reliability Statistics

Variable	Items	Cronbach's Alpha
Factor 1: Website Attributes	2	0.759
Factor 2: Reliability	2	0.864
Factor 3: Responsiveness	2	0.842
Factor 4: Fulfilment	4	0.918
Factor 5: Efficiency	3	0.809
Factor 6: Privacy	2	0.895
Factor 7: Security	3	0.736
Factor 8: Customer Satisfaction	4	0.930
Factor 9: Customer Loyalty	2	0.925

Before further bivariate and multivariate analyses, checks for missing data, outliers and normality were conducted on the scale data. Descriptive statistics revealed that missing data for the variables and respondents ranged between 1.2% and 3.3%. Missing data under 10% for each respondent or variable can generally be ignored because it does not have a significant adverse effect on any analyses (Hair et al., 2006). Concerning outliers, an inspection of box plots and comparison of actual means with the 5% trimmed means for the variables revealed no extreme scores with a strong influence on the means (Pallant, 2016). Regarding normality for all variables, kurtosis and skewness were within the acceptable ± 1 range for psychometric tests (D. George & Mallery, 2003).

9. Results

9.1. Correlation Analyses

Pearson correlation analysis was performed to assess the direction and strength of relationships among all variables. Table 3 presents the correlations, means and standard deviations of the dependent variables (customer satisfaction), independent variables (security, website attributes, privacy, efficiency, fulfilment, responsiveness, reliability) and control variables (actual age and gender). The results in Table 3 show relatively low correlations among variables (all of them below 0.8). This entails that multicollinearity is not a problem (Tabachnick & Fidell, 2012). The table shows that age does not significantly affect the levels of customer satisfaction with internet banking. However, it is different for gender (code Male 0, Female 1) which shows that there is a significant correlation ($r = 0.149$, $p < 0.01$) with customer satisfaction. This entails that female respondents are more satisfied with online banking ($r = 0.149$, $p < 0.01$), and privacy guarantees ($r = 0.200$, $P < 0.01$) but have a lower perception of security i.e. females have higher concern for the likelihood of fraud ($r = -0.139$, $p < 0.05$) in online banking.

Table 3 confirms the proposed conceptual model. Six dimensions of e-service quality namely website attributes, privacy, efficiency, fulfilment, responsiveness and reliability were positively and significantly related to customer satisfaction ($p < 0.01$). The correlations were as follows: reliability ($r = 0.636$), fulfilment ($r = 0.614$), efficiency ($r = 0.595$), responsiveness ($r = 0.552$), privacy ($r = 0.547$), and website attributes ($r = 0.489$). The effect sizes are generally large based on Cohen's criteria i.e. small = 0.10 to 0.29, medium 0.30 to 0.49 and large = 0.50 to 1.00. Security on the other hand was significant at ($p < 0.05$) but had a small effect size correlation of $r = -0.126$. This could indicate that customers are sceptical when considering the risk of negative outcomes associated with security while using online banking. Lastly, customer satisfaction was positively associated with customer loyalty with a large effect size ($r = 0.871$).

Table 3. Correlation Matrix

#	Variable	Mean	Std. Dev	N	1	2	3	4	5	6	7	8	9	10	11
1	Customer Loyalty	3.954	1.008	314	—										
2	Customer Satisfaction	3.772	0.898	314	.871**	—									
3	Gender	0.320	0.467	314	.120*	.149**	—								
4	Age Group	1.880	0.698	314	0.051	0.045	-.257**	—							
5	Education Level	4.140	0.881	314	0.034	-0.007	-0.068	.135*	—						
6	Security	2.437	0.856	314	-.151**	-.126*	-.139*	-0.001	-0.019	—					
7	Website Attributes	3.705	0.865	314	.500**	.489**	0.091	-0.029	0.053	-0.114*	—				
8	Privacy	3.696	0.955	314	.552**	.547**	.200**	-0.08	-0.007	-0.146**	.595**	—			
9	Responsiveness	3.205	0.905	314	.538**	.552**	0.072	0.069	0.019	-0.071	.405**	.481**	—		
10	Efficiency	3.488	0.863	314	.558**	.595**	0.091	0.009	-0.007	-0.129*	.546**	.630**	.579**	—	
11	Fulfilment	3.682	0.892	314	.612**	.614**	0.073	0.092	0.102	-0.100	.557**	.636**	.581**	.642**	—
12	Reliability	3.737	0.891	314	.643**	.636**	0.087	0.012	0.054	-0.136*	.622**	.675**	.613**	.647**	.716**

**Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

This section presents and discusses regression analysis results testing both control variables and independent variables' effects on customer satisfaction. To test hypotheses H 1 to H 7, a multiple hierarchical regression analysis was executed. Table 4 summarises the results of the regression analysis.

Firstly, model 1 shows the base model with only control variables being introduced. From Table 4, it can be seen that the combined effect of education level, gender and age is statistically significant with an adjusted R^2 of 2.0% and R of 0.172. This study shows that males participate more in online banking than females. Secondly, in model 2, besides the control variables, security is introduced and a statistically significant combined effect occurs (R^2 change of 1% from 3% to 4%) with R of 0.201, representing a combined small effect size. The negative Beta value of 0.104 denotes that customers are sceptical when considering the risk of negative outcomes associated with security while using online banking.

In model 3, besides the control variables and security, website attributes are introduced and a significant combined effect occurs (R^2 change of 22.1% from 4.0% to 26.2%) with R of 0.512, representing a combined large effect size. Customers are more likely to be satisfied if they find the website helpful and easy to use. In model 4, besides the control variables, security and website attributes, privacy is introduced and a significant combined effect occurs (R^2 change of 9.2% from 26.2% to 35.4%) with R of 0.595, representing a combined large effect size. Customers who experience privacy for online banking are more likely to be satisfied than those that do not.

In model 5, besides security, website attributes, privacy and the control variables, responsiveness is introduced and a combined effect occurs (R^2 change of 8.4% from 35.4% to 43.8%) with R of 0.662, representing a large effect size. Therefore, customers that perceive online banking services to be more responsive are more likely to be satisfied. In model 6, besides security, website attributes, privacy, responsiveness and the control variables, efficiency is introduced and a combined effect occurs (R^2 change of 3.1% from 43.8% to 46.9%) with R of 0.685, representing a large effect size. The more responsive the bank's online support is, the more the customers are likely to be satisfied.

In model 7, besides security, website attributes, privacy, responsiveness, efficiency and the control variables, fulfilment is introduced and a combined effect occurs (R^2 change of 2.5% from 46.9% to 49.5%) with R of 0.703, representing a large effect size. This denotes that customers that have their online banking needs met will be satisfied. In model 8, the last service quality dimension to be introduced is reliability and this brings about a significant combined effect (R^2 change of 1.6% from 49.5% to 51.1%) with R of 0.715, representing a large effect size. This reflects that customers with confidence in the quality and reliability of the bank's online services are more likely to be satisfied with the services offered by the bank. However, it should be noted that when all the independent variables are included in model 8, only reliability, fulfilment, responsiveness and efficiency have a statistically significant effect on customer satisfaction with reliability being the first in ranking and efficiency being the fourth and last.

Based on the correlation matrix (Table 3) and regression results (Table 4), Table 5 below summarises the results of hypothesis testing.

10. Discussion

With the support of correlation and multiple regression analyses, the results of this study indicate that the seven e-SQ dimensions namely security, website attributes, privacy, responsiveness, efficiency, fulfilment and reliability combine to statistically significantly and positively explain customer satisfaction. The findings in this research resonate with the results of prior studies carried out in different cultural contexts, specifically in Iran, Egypt and India.

Arising from the findings, the implications are that security concerns result in negative effects on customer satisfaction. This entails that customers that perceive a low risk of negative outcomes are more likely to be satisfied with the online banking service unlike those that perceive a high risk.

Website attributes, as well as privacy, responsiveness, efficiency, fulfilment and reliability, are found to possess positive and significant effects on customer satisfaction in online banking. This implies that customers that experience a high degree of quality in the mentioned dimensions of e-SQ while using the banks' services on the website are more likely to be satisfied than those that experience a low degree in service quality.

In addition, it has been found that reliability has the greatest positive effect on customer satisfaction in online banking followed by fulfilment, efficiency, responsiveness, web attributes, privacy and the last is security in order of reducing contribution. The results complement the existing literature (Kaura et al., 2012; Naidoo, 2014; Jayasundara et al., 2009; Sakhaei et al., 2014) suggesting that reliability has the greatest influence on customer satisfaction in online banking followed by fulfilment, efficiency, privacy/security, responsiveness and lastly web design. A. George and Kumar (2014) found that privacy had the most significant and the greatest effect on customer satisfaction with efficiency and website attributes having the least influence. The findings of the current research support those of Sakhaei et al. (2014) although they are different from A. George and Kumar (2014) in terms of ranking of the e-SQ dimensions.

The current study was meant to assist in verifying whether or not e-SQ for online banking has an effect on customer satisfaction in the under-researched context of Zambia. The results validate the pertinence of the E-SERVQUAL model during this distinctive study in the Zambian context. This study helps bank management and stakeholders understand the importance of the varied antecedents of customer satisfaction in online banking.

10.1. Limitations and Future Study

Being a cross-sectional study, this research could only offer a snapshot of the phenomenon. Thus, only correlation rather than causality can be inferred. In future, longitudinal studies conducted annually as an all-encompassing, holistic and recognised internet banking service quality evaluation system would help institutions to assess and monitor their service quality performance. Additionally, the study was limited to examining responses from Copperbelt Zambia the cities thereof may be characterised by specific environmental moderators (such as social and cultural influences) which might not exist in other cities. This, by extension, implies limitations in generalisability. Another limitation was that most banks were sceptical and not ready to allow the survey to be conducted on their customers for fear that the customers would share some confidential information. This study has provided evidence that reliability, fulfilment, efficiency, responsiveness, attributes, privacy and security influence service quality perceptions of internet banking not only in the developing country of Zambia but also in the context of a pandemic. It would be insightful to have the model and study replicated in other countries in pandemic-specific contexts to enable the comparison of conclusions and prioritisations. This would improve the generalisability of conclusions.

10.2. Managerial Implications

The findings have implications for scholars, bank managers and policymakers. The e-service quality model is a valid and useful framework for assessing and monitoring how the primary stakeholders form their service quality perceptions of internet banking not in a developing country like Zambia but also in the context of a pandemic like covid-19. This study has shown that customer satisfaction is a function of perceptions of performance in the service quality dimensions of security, website attributes, privacy, responsiveness, efficiency, fulfilment and reliability. In turn, satisfied customers are more likely to provide repeat business to banks and spread positive word of mouth to potential and existing customers of the bank about internet banking.

Recommendations concerning what managers and policymakers should do are made based on the four most influential dimensions of electronic service quality in the Zambian context. Thus, the managerial and policy recommendations are prioritised in the following order: reliability, fulfilment, efficiency, responsiveness, attributes, privacy and security. Firstly, reliability is a dimension which comprises users' trust in online banking services, delivery of services as promised and updating of bank websites. Rotter

Table 4. Regression Analyses with Customer Satisfaction as Outcome

Variables	Model 1		Model 2		Model 3		Model 4	
	Beta	SE(1)	Beta	SE(2)	Beta	SE(3)	Beta	SE(4)
Variables	Model 5		Model 6		Model 7		Model 8	
Beta	SE(5)	Beta	SE(6)	Beta	SE(7)	Beta	SE(8)	VIF
Control Variables								
Gender	0.172**	0.111	0.156**	0.112	0.121*	0.099	0.070	0.094
Age Group	0.089	0.075	0.085	0.075	0.093	0.066	0.103*	0.062
Education Level ⁵	-0.001	0.052	0.000	0.052	-0.027	0.046	-0.014	0.043
Independent Variables								
Security			-0.104	0.059	-0.055	0.052	-0.031	0.049
Website Attributes					0.476***	0.051	0.253***	0.059
Privacy							0.386***	0.055
Responsiveness								
Efficiency								
Fulfillment								
Reliability								
F	3.151*		3.238*		21.837**		28.046***	
F Change	3.151*		3.425		92.406***		43.886***	
R	0.172		0.201		0.512		0.595	

(Continued)

Table 4. (Continued)

Variables	Model 1		Model 2		Model 3		Model 4	
	Beta	SE(1)	Beta	SE(2)	Beta	SE(3)	Beta	SE(4)
R squared	0.030		0.040		0.262		0.354	
Adjusted R square	0.020		0.028		0.250		0.341	
R squared change	0.030		0.011		0.221		0.092	
Control Variables								
Gender	0.068	0.088	0.073	0.085	0.076	0.083	0.082	0.082
Age Group	0.067	0.058	0.062	0.056	0.040	0.056	0.042	0.055
Education Level5	-0.011	0.040	-0.002	0.039	-0.018	0.038	-0.014	0.038
Independent Variables								
Security	-0.033	0.046	-0.025	0.045	-0.026	0.044	-0.019	0.043
Website Attributes	0.191***	0.056	0.139*	0.056	0.100	0.056	0.056	0.057
Privacy	0.257***	0.054	0.168**	0.056	0.097	0.058	0.050	0.059
Responsiveness	0.339***	0.05	0.256***	0.052	0.200***	0.053	0.154**	0.054
Efficiency			0.254***	0.063	0.195**	0.064	0.173**	0.063
Fulfillment					0.245***	0.063	0.180**	0.065
Reliability							0.221**	0.070
F	34.129***		33.685***		33.047***		31.650***	
F Change	45.974***		17.611***		15.303***		10.135**	
R	0.662		0.685		0.703		0.715	

(Continued)

Table 4. (Continued)

Variables	Model 1		Model 2		Model 3		Model 4	
	Beta	SE(1)	Beta	SE(2)	Beta	SE(3)	Beta	SE(4)
R squared	0.438		0.469		0.495		0.511	
Adjusted R square	0.426		0.455		0.480		0.495	
R squared change	0.084		0.031		0.025		0.016	

***Sig. at the 0.1% level

** Sig. at the 1% level

* Sig. at the 5% level

Table 5. Hypotheses Testing Summary of Results

#	Hypothesis	Statistic	Test	Results
H ₁	Security has a negative influence on customer satisfaction	Beta = -0.019	Regression	Not supported
H ₂	Website attributes have a positive effect on customer satisfaction	Beta = 0.056	Regression	Not supported
H ₃	Privacy has a positive relationship with customer satisfaction	Beta = 0.050	Regression	Not supported
H ₄	Responsiveness has a positive effect on customer satisfaction	Beta = 0.154*	Regression	supported
H ₅	Efficiency has a positive effect on customer satisfaction	Beta = 0.173**	Regression	supported
H ₆	Fulfilment is positively related to customer satisfaction	Beta = 0.180**	Regression	supported
H ₇	Reliability has a positive influence on customer satisfaction	Beta = 0.221**	Regression	supported
H ₈	Customer Satisfaction has a positive association with Customer Loyalty	R = 0.871**	Correlation	supported

**sig at 0.01 (1 percent)

*sig at 0.05 (5 percent)

(1967) defines trust as “the belief that a party’s word or promise is reliable and a party will fulfil his/her obligations in an exchange relationship. For banks to be considered trustworthy or reliable by their customers, they should ensure that all other significant dimensions of electronic service quality satisfy the customer. To do this, a good customer experience which meets or exceeds customer expectations must exist in every interaction the customer has with online banking services. Only then can trust develop.

Secondly, fulfilment measures the extent to which the website meets the requirements of users in terms of promptness of web page loading, speed of log-in, log-out, and the confirmation of the requested service. All these depend on the download speed of the internet service providers and banks may not have much to contribute to improving the perceptions of users. However, banks should advise their customers to utilise internet service providers whose download speed is comparatively high.

Thirdly, responsiveness is a dimension which measures how easy it is to access bank personnel who can respond quickly and professionally to customer requests and queries. Customers with failed online transactions seem to find it expensive to contact customer service personnel via non-toll-free phone numbers, hence affecting the ease of access to the banks’ customer service personnel. Therefore, banks are advised to remain competitive by offering cheaper phone call rates or other effective and cheaper options to contact their customer service personnel. Lastly, efficiency is a dimension that refers to the

ease of using the site and the ability of banks to satisfy the service needs of customers. Banks are therefore advised to make their websites easily navigable to their customers with easy instructions to follow. Regarding gender, while females are more satisfied with online banking and privacy guarantees than males, there is a need for managers to address females' higher concerns about the risk of fraud.

11. Conclusions

The purpose of this research was twofold. Firstly, it sought to apply the e-service quality model in a Zambian context in the pandemic-specific conditions and determine the influence of each service quality dimension on overall service satisfaction. Secondly, the study sought to explore the influence of customer satisfaction on customer loyalty. The study was based on a quantitative survey design where primary sample data were collected from 314 retail bank customers in Copperbelt Zambia. The main findings in the pandemic-specific conditions indicate that each of the seven dimensions of the electronic service quality model (security, website attributes, privacy, responsiveness, efficiency, fulfilment and reliability) is positively related to overall customer satisfaction, which in turn is related to loyalty and positive word of mouth.

The contributions of this research are twofold. Firstly, prior studies exploring e-service quality in internet banking in India, Iran and Egypt suggest that customer satisfaction can be explained by perceived service quality in each of the seven dimensions of e-service quality (A. George & Kumar, 2014). However, Sub-Saharan African countries are under-researched and this limits the generalisability of research conclusions. Hitherto, literature with a Zambian context is non-existent. The consequences of shortages of research in the Zambian context entail that stakeholders have no basis for developing strategies and setting resource allocation priorities to improve service quality based on context-specific conclusions. Therefore, this study has contributed to filling this contextual gap in knowledge, thus extending the generalisability of prior research conclusions and improving external validity (Eden, 2002; Evanschitzky et al., 2007; Miller & Bamberger, 2016). Indeed, the study has confirmed the applicability of the ESQUAL model in a collectivist, high power distance, a feminine and lower-middle-income country like Zambia.

Secondly, the current study is among the pioneers to examine the ESQUAL model during the COVID-19 pandemic when the migration of service provision to digital platforms is no longer an option but a necessity for the survival of business operations, especially in the banking sector. The study has shown that to get more customers to use internet banking services emphasis must be placed on the reliability, fulfilment, efficiency and responsiveness of the digital platforms to deliver on the promises made to customers. This however does not mean neglecting enhanced security, privacy and website attributes for ease of access and navigation. Particularly with gender, while females are more satisfied with online banking and privacy guarantees than males, there is a need for managers to address females' higher concerns about the risk of fraud.

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Notes

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