

The Impact of Website Quality on Purchase Intention in the Sri Lankan E-Commerce Context: The Moderating Effect of Perceived Risk and Perceived Value

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ABSTRACT

Driven by supportive technologies and global circumstances, the e-commerce market is uninterruptedly growing and revolutionizing the way modern consumers shop. Website Quality stands out as a crucial subject in e-commerce since the website is the place from which the customers get their first impression. This impression about the Website Quality is said to eventually influence customers' Purchase Intention. Especially in today's hyper-competitive e-commerce environment, the performance of e-commerce businesses deteriorates when they fail to provide adequate importance to Website Quality as a means of determining the Purchase Intention of customers. Hence, understanding the impact of Website Quality on Purchase Intention becomes critical. Although Website Quality in different contexts was examined, the impact of Website Quality on Purchase Intention was not studied with Perceived Risk and Perceived Values as moderators. Hence, the purpose of this study was to develop a conceptual model to examine the impact of Website Quality on Purchase Intention and to investigate the moderating effect of Perceived Risk and Perceived Value on this relationship, in the Sri Lankan e-commerce context. A deductive quantitative approach was used in this study. The conceptual model was tested using partial least squares-structural equation modeling with data collected through an online questionnaire from 198 'Daraz' website users, employing the convenience sampling method. According to the findings, Information Quality, System Quality and Service Quality had a significant positive effect on Purchase Intention. Notably, Service Quality had the highest effect on Purchase Intention. However, the moderating effect of Perceived Risk and Perceived Value were not supported. This study contributed to strengthening the existing knowledge on the impact of Website Quality on Purchase Intention in the Sri Lankan e-commerce context, and the findings could be more important to developing countries. Further, the findings suggested online retailing managers to provide excellent customer service and to pay greater attention to the technical aspects of the website.

Keywords: Website Quality, Purchase Intention, E-commerce, Perceived Risk, Perceived Value

INTRODUCTION

The introduction of the Internet paved the way for a revolutionary change in the buying and selling of goods and services, popularly known as e-commerce. With the expeditious growth of e-commerce, both businesses and academics are interested in finding the factors that drive the Purchase Intention of customers in the e-commerce context. Website Quality, which consists of Information Quality, System Quality and Service Quality, is a major antecedent that has a direct positive impact on Purchase Intention, in developed as well as developing countries (Khalil, Umapathy, Goel & Reddivari, 2019; Kwaku & Antwi, 2021). The success of e-commerce websites is highly dependent on Website Quality (Chen & Cheng, 2009). Hence, e-commerce businesses must necessarily focus more on improving Website Quality features to boost customer retention and differentiate themselves from competitors (Khalil et al., 2019).

Consumers go through certain risks when they purchase online (financial risk, product risk, security risk, time risk, social risk and psychological risk). Some customers may fear the payment system, some may fear about product failure and some may fear about non-delivery (Khan, Baig, Umair, Ashraf & Noman, 2021). Such fears and risks have a greater potential to negatively affect purchases via e-commerce sites (Ariffin, Mohan & Goh, 2018).

Perceived value is a reliable predictor of consumer purchase behavioral intentions (Pham et al., 2018). Perceived Value of customers differs according to their heterogenous backgrounds in terms of age, gender, prior knowledge, cognitive styles and shopping motives (Fang, Wen, George & Prybutok, 2016). A combination of various aspects of websites including the design of the page, the graphics, the color palette, ease of use, navigation, updated information and security/privacy develops an emotional impact on the customers, contributing to increased Perceived Value that eventually gets mirrored in customer decision making (Alhider, 2018). Customers relate the nature and condition of the e-commerce website, with the products and services that the site offers. Although Perceived Value associates with Website Quality and Purchase Intention, the moderating effect of Perceived Value is underexplored.

The evolution of e-commerce in Sri Lanka dates back to early 2000 with the launch of pure play platforms such as eChannelling.com and kapruka.lk. Since then, brick-and-mortar stores too started to have online presence (Daily FT, 2013). Jayasingha and Sumanasiri (2022) revealed that e-commerce adoption has become a big trend among Sri Lankan consumers, especially the young generation. Since Sri Lankan consumers are more concerned about the

features of the seller's website, e-commerce businesses operating in Sri Lanka are paying more attention to the website's ease of use, attractiveness, layout, simple transactions, and overall Website Quality (Deyalage & Kulathunga, 2019).

Since the inception of e-commerce, scholars have studied the role of Website Quality on e-commerce success. Most of the studies adopted the Updated D&M IS Success Model (DeLone & McLean, 2003) including the three dimensions namely, Information Quality, System Quality and Service Quality (Hsieh & Tsao, 2014; Ihsan, Li & Alexis, 2020). Most of the studies have examined the effect of Website Quality on Purchase Intention (Bebber, Milan, De Toni, Eberle & Slongo, 2017; Oni, Sentanu, Valentinus & Manaf, 2020).

However, a comprehensive review of existing literature revealed that there is a critical need to study the effect of moderators on the relationship between Website Quality and Purchase Intention of customers, as it remains an under-researched area. Only a few studies have explored the moderating effect of Perceived Risk on the relationship between Website Quality and Purchase Intention (Ali & Aziz, 2022; Khalil et al., 2019) and the moderating effect of Perceived Value remains uninvestigated, despite the importance of Perceived Value in positively influencing online Purchase Intention (Mantik, Gaberamos & Pasaribu, 2022; Pham, Tran, Misra, Maskeli & Damaševičius, 2018). Further, in the Sri Lankan e-commerce context, still there is a lack of comprehensive research on Website Quality and Purchase Intention.

Therefore, the purpose of this study was to fill the gap in the existing literature, specially in the Sri Lankan context to a certain extent by addressing the following research questions:

- What is the impact of Website Quality on Purchase Intention in e-commerce?
- What is the moderating effect of Perceived Risk and Perceived Value on the relationship of Website Quality and Purchase Intention in e-commerce?

The current study added new knowledge to fill the gap in e-commerce literature to a certain extent through proposing an unprecedented theoretical model, by means of introducing Perceived Value as a moderator on the relationship of Website Quality and Purchase Intention in the e-commerce context. This study could mark the beginning of an interesting discussion in the Sri Lankan e-commerce context, on whether the Website Quality dimensions have a relationship with Purchase Intention.

LITERATURE REVIEW

Theories Applied in Studying Website Quality in the E-commerce Context

Updated D&M IS Success Model: In a period before the giant evolution of e-commerce systems, quality was considered as two-fold comprised of only Information Quality and System Quality in the D&M IS Success Model developed by W.H. DeLone and E.R. McLean (DeLone & McLean, 1992). However, over the years, especially with the augmented use of e-commerce, researchers questioned the validity of the above model at the present context, and several articles were published to challenge, critique or extend the D&M IS Success Model. Hence, understanding the need for model refinement, DeLone and McLean introduced the “Updated D&M IS Success Model” in which they recommended Service Quality as the third quality dimension in measuring e-commerce success (DeLone & McLean, 2003).

A good quality website has the power to induce Purchase Intention by motivating the customers to buy extra goods in addition to what they wanted and helps them to remember the website in future occasions, or recommend it to others (Ihsan et al., 2020). Kwaku and Antwi (2021) also affirmed that Information Quality, System Quality and Service Quality positively influence Purchase Intention. The findings of Khalil et al. (2019) indicated that Information Quality and Service Quality positively influence Initial Purchase Intention and Continued Purchase Intention, but unexpectedly System Quality did not have any direct influence on Initial or Continued Purchase Intention. However, according to the findings of Ghazali, Shahril, Norzeri and Rosle (2021), customers place a higher value on the System Quality of the website than the Information Quality it offers. Kuan, Bock and Vathanophas (2008) further affirmed that System Quality triggers Purchase Intention.

These inconsistencies in research findings about e-commerce Website Quality show the need for further empirical research, especially concerning developing countries (Kwaku & Antwi, 2021). On the other hand, as most of the previous research frameworks for e-commerce were derived from the Western or developed countries, the findings may not be appropriate to be generalized in developing countries. Developing countries are entirely different from developed countries in terms of their needs and culture (Kumar & Lata, 2021). Therefore, the assumptions need to be tested and verified in the context of emerging economies.

Stimulus-Organism-Response Model (S-O-R model): S-O-R model was established by Mehrabian and Russell (1974) and comprises three components: a stimulus, an organism and a response. Aggarwal and Rahul (2017) proposed Perceived Information Quality as one of the major constructs of Website Quality in a shopping website that leads to Purchase Intention. Perceived Information Quality acted as a stimulus (S) resulting in customers' Trust and Satisfaction (O), which in turn led to Purchase Intention (R) of Indian e-commerce customers. The findings showed a close association of Perceived Information Quality, Trust, Satisfaction and Purchase Intention. Further, Kim, Yang and Kim (2013) investigated Reputation and Website Quality as internal and external stimuli respectively; Emotion and Perceived Risk as emotional and cognitive reactions; and Purchase Intention as the behavioral response to the stimuli under two different cultures. The findings showed that while the overall mechanism underpinning decision-making is comparable between the two cultures, there are differences in the relative weighting of the variables influencing customers' cognitive and emotional responses as well as their intention to make an online purchase. Further, the findings of Kühn and Petzer (2018) also proved the importance of Website Design in terms of Visual Appeal and Perceived Usability in affecting Purchase Intention via website Trust and Flow.

Although the S-O-R framework helps to better understand how Website Quality persuades Purchase Intention, it constantly studies the relationship of Website Quality and Purchase Intention with the presence of mediators. Given that increasing intention to make a purchase is the primary objective of Website Quality improvement (Kuan et al., 2008), and the topmost challenge of every online retailer (Hsu, Chang & Chen, 2011), it is important to investigate the direct impact of Website Quality characteristics on Purchase Intention.

Hence, the current study adopted the Updated D&M IS Success Model to evaluate the direct impact of the overall quality of the e-commerce website on Purchase Intention, with the help of three quality dimensions.

Empirical Findings

Website Quality has been recognized as a critical factor to drive e-commerce success. Numerous studies have been devoted to studying the impact of Website Quality dimensions and Purchase Intention, which is the eventual goal of improving Website Quality. Further, research was conducted to examine the relationship between Website Quality and Purchase Intention with the presence of a mediator such as Customer Satisfaction (Bai, Law & Wen,

2008), Perceived Risk (Oni et al., 2020) and Trust (Qalati, Vela, Li, Dakhan, Thuy, & Merani, 2021). Some studies have explored the direct relationship between Website Quality dimensions and Purchase Intention (Bebber et al., 2017; Oni et al., 2020), whereas some have explored the same after categorizing Purchase Intention as Initial Purchase Intention and Continued Purchase Intention (Khalil et al., 2019; Kuan et al., 2008).

Website Quality: Assessment of Website Quality is subjective, however, Website Quality can be broadly identified as the evaluation of the website user on the general performance of the website against his/her needs (Kwaku & Antwi, 2021). From the e-commerce customer's point of view, Website Quality can be addressed in terms of the above three fundamental dimensions, namely Information Quality, System Quality and Service Quality (Hsu, Chang & Chen, 2011). A well-organized information content enhances the Purchase Intention of customers since the customers make judgments based on the given information (Athapaththu & Kulathunga, 2018). E-commerce service providers must ensure to provide clear information, so that their customers who are browsing the website, are free from doubts regarding product features, delivery information, goods return policy etc. (Bebber et al., 2017). Sellers should also update their websites constantly with accurate and useful information to increase Customer Satisfaction and Purchase Intention (Ihsan et al., 2020). When the customers find good information on the website such as a variety of products, offers etc., their feeling of Purchase Intention and level of interest increase (Jauhari, Kusumawati & Nuralam, 2019). Interestingly, the quality of information aids in creating uniqueness between the own e-commerce website and other competitive websites, even if the latter deliver similar products (Ghazali et al., 2021).

In comparison to traditional Information Systems, System Quality is extremely important to e-commerce systems, since the system users are now customers rather than employees. Thus, an unsatisfactory level of System Quality deters customers from using a particular e-commerce site (DeLone & McLean, 2004). The findings of Ghazali et al. (2021) showed that customers give more prominence to the operational characteristics of the website than the quality of information provided by the website. Kuan et al. (2008) suggested that online retailers should increase System Quality to increase customer conversion, as the System Quality triggers the visitor to make a purchase. In terms of System Quality, Hsieh and Tsao (2014) had a different viewpoint where they argued that although System Quality plays an important role in the e-commerce industry, the gradual maturity of e-commerce has made System Quality as a basic, industry-standard attribute of most e-commerce websites. Therefore, they believed that System

Quality no longer serves as a point of differentiation to get a competitive advantage, but rather just the point of parity between websites.

In the e-commerce environment, Service Quality is a significant factor as there is no face-to-face interaction between the seller and the buyer (Kwaku & Antwi, 2021). Website owners are suggested to enhance Service Quality to satisfy customers and naturally earn loyal customers, to build long-term customer relationships (Chang, Wang & Yang, 2009). Hsu et al. (2011) argued that Service Quality is more powerful in influencing customers' decisions than Information Quality and System Quality, because customers who experience excellent Service Quality seem to be more satisfied and are more likely to make a purchase.

Purchase Intention: Online Purchase Intention measures how strongly a customer intends to engage in a particular online purchase (Hsu et al., 2011). According to Hsu et al. (2011), the topmost challenge encountered by every online retailer is to convert the website visitor into a buyer, by persuading their willingness to purchase. Individuals who have higher Purchase Intention are more likely to purchase from the vendor in the future, because the greater the Purchase Intention, the greater the actual purchase level (Milan, Bebbber, Toni & Eberle, 2015). Purchase intention is identified as a dimension of behavioral intention that can directly influence both revenue and profitability of the organization (Hsu et al., 2011). Hence, the literature supports the significance of Purchase Intention as a dependent variable.

Customer Satisfaction: According to Jauhari et al. (2019), when a product meets or exceeds a customer's expectations, it is said that the customer is satisfied. However, satisfaction is not only for products but also for services. For instance, an online store that offers a satisfactory level of information and service on their website will produce a feeling of Purchase Intention. A good quality website that is rich in Information, System and Service Quality gives pleasure for website visitors in accessing it (Jauhari et al., 2019). Researchers have widely explored Customer Satisfaction as a mediator in the relationship between Website Quality and Purchase Intention in the e-commerce setting. Website quality has a direct and positive impact on Customer Satisfaction, and Customer Satisfaction has a direct and positive impact on Purchase Intention. Although there is a relationship between Website Quality and Purchase Intention, Customer Satisfaction plays a key mediating role (Bai et al., 2008). In the Indonesian e-commerce context, Jauhari et al. concluded that the direct effect of Website Quality on Purchase Intention is a little less than the indirect effect of Website Quality on Purchase Intention through Customer Satisfaction.

Perceived Risk: With the growth of online transactions, Perceived Risk is not just limited to fraud and product quality risk as in over-the-counter transactions. Instead, it is multi-faceted with several types of risks such as financial risk, product risk, security risk, time risk, and psychological risk where all of which have proven significant relationships with online Purchase Intention (Ariffin et al., 2018). According to Khan et al. (2021), customers see varying types of risks in the online purchase journey. Some may worry that they would lose their money in the e-commerce website. Some may have product-related fears such as the product's appearance, quality, durability etc. as they cannot see, touch, or smell the products. Since transactions happen through online platforms, shoppers may also doubt the safety of the payment system, while some others may anticipate non-delivery risk too. Information Quality has the potential to directly influence Perceived Risk, thus online sellers can reduce Perceived Risk by increasing Information Quality (Milan et al., 2015). Further, the findings of Hsieh and Tsao (2014), showed that System Quality and Information Quality do not have significant negative effects on Perceived Risk, whereas Service Quality is the only element of Website Quality that is capable of reducing Perceived Risk. Although Perceived Risk is associated with both Website Quality and Purchase Intention in the e-commerce environment, only few researchers have studied the moderating effect of Perceived Risk on the relationship between Website Quality dimensions and Purchase Intention (Ali & Aziz, 2022; Khalil et al., 2019).

Perceived Value: Perceived Value is defined as ‘a consumer’s perception of the net benefits based on the perception of what is received and what is given (Chang et al., 2009, p.428). Chang et al. (2009) recommended that the customers’ Perceived Value can be improved by higher product quality or lower price. With regards to Website Quality, Perceived Value is found to be highly affected by Service Quality (Fang et al., 2016). Further, Chang et al. brought an interesting finding regarding the moderating effect of Perceived Value between Customer Satisfaction and Customer Loyalty. They discovered that when websites provide acceptable Service Quality and higher Perceived Value, they will gain higher Customer Loyalty than when providing higher Service Quality while having low Perceived Value. As per the findings, they suggested that the website owners can reduce the costs spent on Service Quality and reflect that cost reduction on the product price, to raise Perceived Value.

Research Gap

Based on the literature reviewed, it is evident that various aspects of Website Quality have been studied in the e-commerce context. However, the review of existing literature provided that

very little is known about the effect of moderators on the relationship between Website Quality and Purchase Intention of customers (Ali & Aziz, 2022; Khalil et al., 2019). Despite the importance of Perceived Value in online Purchase Intention, there is still a lack of research that examines Perceived Value as a moderator between Website Quality and Purchase Intention relationship. Previous studies further urge to investigate the moderating effect of Perceived Risk and other related variables, in different contexts (Khalil et al., 2019), since customer attributes may differ between countries due to varying cultural and technological conditions (Kumar & Lata, 2021; Kwaku & Antwi, 2021).

Furthermore, in the Sri Lankan e-commerce context, only a handful of research was conducted in relation to Website Quality factors and the purchasing behaviour of customers (Athapaththu & Kulathunga, 2018; Deyalage & Kulathunga, 2019; Gamage & Jayatilake, 2019). The direct relationship between quality dimensions and Purchase Intention, and the moderating effects of Perceived Risk and Perceived Value on the relationship are not yet studied in the Sri Lankan e-commerce context.

Therefore, considering the current gaps in the literature, this study aimed to identify the impact of Website Quality on Purchase Intention with the moderating effect of Perceived Risk and Perceived Value, in the Sri Lankan e-commerce context.

METHODOLOGY

Conceptual Framework

The conceptual model of the study was developed to investigate the direct effect of Website Quality on Purchase Intention, and the moderating effect of Perceived Risk and Perceived Value on the relationship between Website Quality and Purchase Intention in the e-commerce context (See Figure 1). The three dimensions of Website Quality, namely, Information Quality, System Quality, and Service Quality were adopted from the Updated D&M IS Success Model of DeLone and McLean (2003). These three dimensions from the Updated D&M IS Success Model were selected for this study as they help to evaluate the overall quality of the e-commerce website, focusing on multiple aspects. About online shopping, Perceived Risk is identified as a common barrier that negatively affects Purchase Intention (Mcknight, Choudhury & Kacmar, 2002; Singh & Srivastava, 2018). However, concerning the role of Perceived Risk in e-commerce, only a few studies have investigated the moderating effect of Perceived Risk on the relationship of Website Quality and Purchase Intention (Ali & Aziz,

2022; Khalil et al., 2019). Similarly, Perceived Value also has a dominant role in affecting Purchase Intention in the e-commerce setting. Scholars have acknowledged that the better the customer's Perceived Value, the higher the Purchase Intention (Gaberamos & Pasaribu, 2022; Pham et al., 2018). Thus, the conceptual model was developed to study the direct relationship of the Website Quality dimensions and Purchase Intention, with the moderating effect of Perceived Risk and Perceived Value.

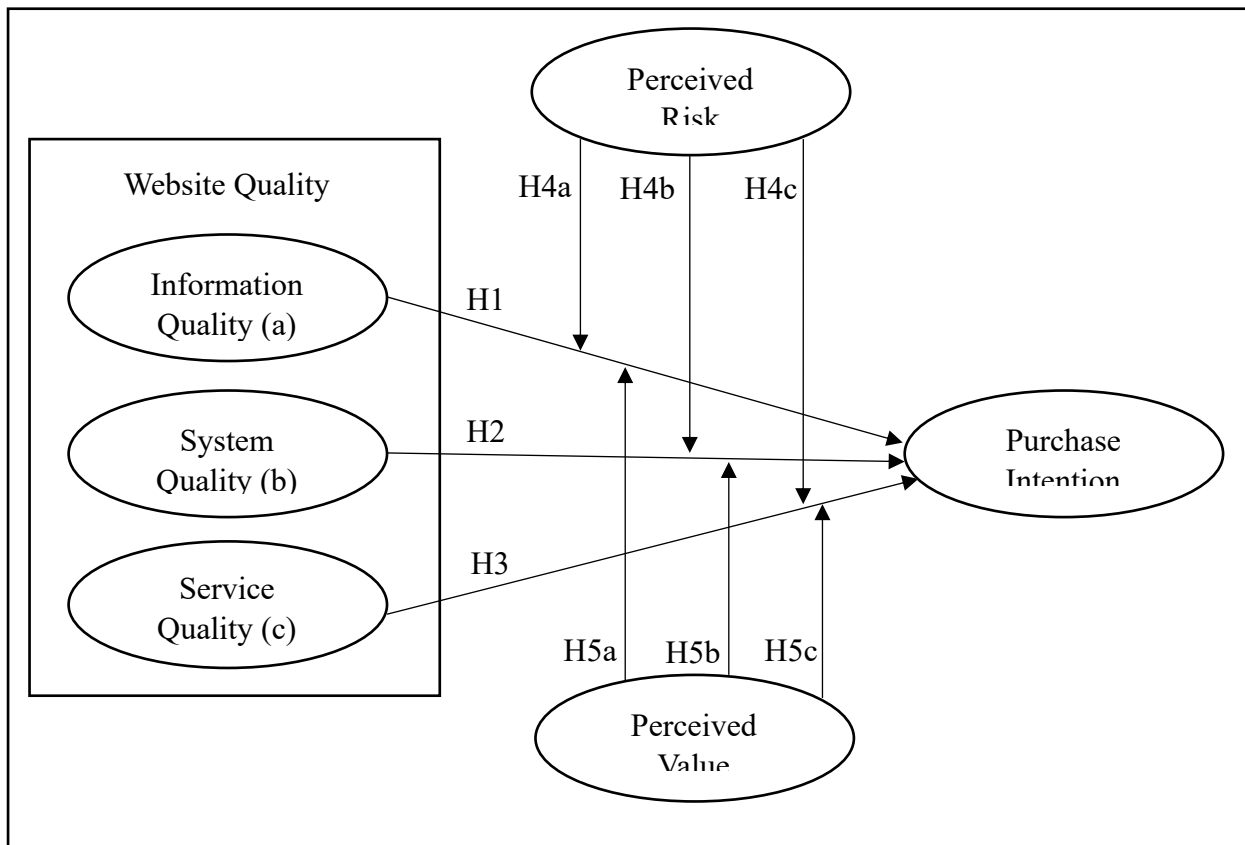


Figure 2: Conceptual Model

Hypotheses of the Study

This section provides justification for the nine hypotheses formulated for this study (see Figure 1).

Information Quality and Purchase Intention:

Information Quality refers to the quality of the content displayed on the website regarding its products and services (Kwaku & Antwi, 2021). New and dynamic personalization measures are important in measuring Information Quality, along with traditional measures such as relevance, accuracy, completeness, and understandability (DeLone & McLean, 2004). Purchase Intention is induced by an e-commerce website's interface, if there is a good display of content (Khalil et al., 2019). According to Bai et al. (2008), website content, including pictures enhances Information Quality and appears to be a strong predictor of online Purchase Intention. Information Quality must be continuously improved to attract and retain customers as well as to get a competitive advantage. More importantly, Information Quality influences Purchase Intention because customers tend to evaluate the quality of the products offered based on the information presented on the website (Milan et al., 2015). The findings of Ghazali et al. (2021) also supported the positive effect of Information Quality on Purchase Intention. Based on the above justification, Hypothesis 1 is proposed:

Hypothesis 1: Information Quality has a positive influence on Purchase Intention

System Quality and Purchase Intention:

System Quality is linked to the technical aspect of the website (Kuan et al., 2008) and it measures technical success (DeLone & McLean, 2003). According to DeLone and McLean (2004), System Quality comprises of important features such as availability, system usefulness, suitability, reliability, and response time. System Quality supports in attracting both new and experienced online customers, by making the website easy to use (Kumar & Lata, 2021). Confidence and trust of the customers on the e-commerce site is built upon the System Quality of the website. Customers would probably move to rival e-commerce sites if they were dissatisfied with the quality of the system (Kuan et al., 2008). Therefore, System Quality is an important aspect of the intention to purchase online. Based on the above justification, Hypothesis 2 is proposed:

Hypothesis 2: System Quality has a positive influence on Purchase Intention

Service Quality and Purchase Intention:

Service Quality measures the quality of the overall service provided by the online retailer in both pre and post-purchase (Chang et al., 2009). It mainly comprises of features such as quick responsiveness, assurance, empathy, following-up service and online support capabilities (DeLone & McLean, 2004). Particularly, as there is no face-to-face interaction in the e-commerce environment, customers give more importance to the level of customer service offered by the online seller, and thereby Service Quality has a promising effect on customers' purchasing decisions (Kwaku & Antwi, 2021). A satisfactory level of Service Quality drives customers towards a high degree of Purchase Intention (Gaberamos & Pasaribu, 2022). Further, the findings of some other previous studies also supported the direct positive effect of Service Quality on Purchase Intention (Khalil et al., 2019; Qalati et al., 2021). Based on the above justification, Hypothesis 3 is proposed:

Hypothesis 3: Service Quality has a positive influence on Purchase Intention

Moderating effect of Perceived Risk on Relationships between Website Quality and Purchase Intention:

Perceived risk refers to possible losses, both monetary and non-monetary, that the customers may perceive in online purchasing in comparison to offline purchasing (Singh & Srivastava, 2018). Kim and Lennon (2013) explained that a well-designed e-commerce website contribute in reducing Perceived Risk by providing a pleasant online experience. Further, they argue that a responsive and helpful customer service, sufficient product and security information, and assured privacy policy makes Perceived Risk less considerable for the customers. Also, Perceived Risk had a negative and direct impact on Purchase Intention, and it is identified as a common obstacle in online shopping (Mcknight et al., 2002; Singh & Srivastava, 2018). Although Website Quality induces Purchase Intention, the existence of risk may discourage the customers from making an online purchase (Kim & Lennon, 2013; Mcknight et al., 2002). As the customers are unaware of the product or Service Quality of the website, they would look for informational cues such as website reviews, before making the purchase decision. While looking for informational cues, if they notice any risk, they will quickly leave the website (Khalil et al., 2019). Based on the above justification, hypotheses 4a, 4b and 4c are proposed:

Hypothesis 4a, Hypothesis 4b, Hypothesis 4c: The relationship between Information Quality (a), System Quality (b), Service Quality (c) and Purchase Intention are weaker when Perceived Risk is high

Moderating effect of Perceived Value on Relationships between Website Quality and Purchase Intention:

Perceived Value is referred as the consumer's evaluation of the rewards he/she has received and the costs he/she has incurred (Chang et al., 2009). Customers tend to have a high degree of Purchase Intention when they enjoy a high degree of Perceived Value (Gaberamos & Pasaribu, 2022; Pham et al., 2018). Also, good quality information and a satisfactory level of service augment the value of a product/service in the minds of customers (Gaberamos & Pasaribu, 2022). According to Putri and Pujani (2019), Website Quality boosts the value perceived by customers in online purchases. Further, they detail that customers who derive higher Perceived Value through Information Quality, System Quality and Service Quality are more likely to continue using the website to buy products and also recommend to others. Based on the above justification, hypotheses 5a, 5b and 5c are proposed:

Hypothesis 5a, Hypothesis 5b, Hypothesis 5c: The relationship between Information Quality (a), System Quality (b), Service Quality (c) and Purchase Intention are stronger when Perceived Value is high

Research Method

Participants: This study focuses on the e-commerce customer population of Sri Lanka. The 'Daraz' website was selected for the study as it has been recognized as the most popular local online shopping site in Sri Lanka. 'Daraz' was ranked 1st among the most popular local online shopping sites in the year 2023, according to an all-island survey (Asia Pacific Institute of Digital Marketing (Pvt) Ltd & Department of Marketing Management, University of Kelaniya, 2023). While 'Daraz' is the most popular e-commerce website in Sri Lanka, 'Daraz' customers would be a true reflection of the e-commerce customers in Sri Lanka. Thus, the individuals who have used the 'Daraz' website for online shopping are taken as the sample of this study. A single website was considered to avoid the contradictory effects of various website sizes, brands and user familiarity rather than conducting a multi-website survey (Zhou, Lu & Wang, 2009). Zhou et al. (2009) and Jauhari et al. (2019) have followed a similar sample selection

approach when investigating Website Quality in e-commerce environment to avoid such consequences.

Data Collection: The survey questionnaire method was used in the study. Questionnaire was administered online to collect data. Questionnaire consisted of measurement items already validated in previous studies, to measure the constructs in the conceptual model. These measurement items were measured using a seven-point Likert scale ranging from 1 = “Strongly Disagree” to 7 = “Strongly Agree”. Appendix 1 presents the measurement items used in the study. The questionnaire was distributed among participants after completing a pilot study.

The questionnaire was circulated in the following means: First, invitations to fill out the questionnaire were sent via WhatsApp to the undergraduate students of the University of Sri Jayewardenepura. E-commerce customers are considered to be younger and more highly educated than traditional customers, therefore students fit more to the e-commerce customer population (Mcknight et al., 2002). Second, an online questionnaire was circulated within a Colombo-based Business Process Outsourcing (BPO) company that has a large number of organizational members comprised of permanent employees and independent contractors who work online from different parts of the country. Respondents in both these categories were frequent users of the Internet in day-to-day life. Therefore, these two categories were selected with the intention to access many participants who probably have online shopping experience, given that the use of Internet increases the possibility of e-commerce adoption (Anooja, 2015). Also, Mark and Ganzach (2014) proposed that the findings drawn from a combination of diverse set of respondents can be better generalized to a broader population.

At the end of the data collection period, 227 total responses were collected. A screening question was used at the beginning of the questionnaire, i.e. “Have you used the ‘Daraz’ website for online shopping?”, to identify the relevant participants for the study. 29 responses out of 227 total responses were removed as the respondents answered “No” to the screening question. Thus, 198 responses were qualified for the final data analysis, which is 87% of the total responses.

DATA ANALYSIS AND DISCUSSION

Descriptive Data Analysis: Data analysis for demographic data and descriptive statistics of the constructs were carried out using Statistical Package for Social Sciences (SPSS 29.0.1.0) software. The majority of the respondents were female representing 65.2% of the total valid responses. Nearly 75% of the respondents were residing in the districts of Western province. 70.2% of the respondents were in the age range of 20-24 years. 56.1% of the respondents belonged to the student category.

Descriptive data analysis for model constructs was performed to calculate the mean, standard deviation and skewness values of the constructs (See Table 1).

Table 9: Descriptive data analysis for model constructs

Construct	Mean	Standard Deviation	Skewness
Information Quality	4.893	1.045	-0.371
System Quality	5.338	1.067	-0.728
Service Quality	4.899	1.051	-0.583
Perceived Risk	3.738	1.241	0.318
Perceived Value	4.374	1.085	-0.695
Purchase Intention	4.732	1.278	-0.605

Path Model Analysis: This study used Partial Least Squares Structural Equation Modeling (PLS-SEM) to test the model. A PLS path model consists of two elements: Measurement model and Structural model. SmartPLS (v. 4.0.9.2) software was used for model testing in the current study.

Measurement Model Analysis: Measurement model analysis in PLS-SEM assessment was used to evaluate the reliability and validity of the measures of the construct (Hair, Hult, Ringle & Sarstedt, 2016). The measurement model was assessed in terms of indicator reliability, internal consistency reliability, convergent validity and discriminant validity. Indicator reliability was examined by observing the indicators' outer loadings. Item loadings that are above the threshold value of 0.7, suggest sufficient levels of indicator reliability (Hair et al., 2016). The initial results indicated the existence of indicators with outer loadings below 0.7. Therefore, two items (PR6, SYQ1) were removed from the model and the PLS algorithm was

again executed. The second execution resulted in outer loading values above 0.7 for all items, confirming the indicator reliability of the measurement model (See Table 2). Further, internal consistency reliability of the measurement model was evaluated using Cronbach's alpha and composite reliability (See Table 2). The rule of thumb for evaluating Cronbach's alpha and composite reliability values of reflective measurement models is, that the values should be higher than 0.7 (Hair et al., 2016). As shown in Table 2, all constructs showed Cronbach's alpha and composite reliability values above 0.7, confirming the internal consistency reliability of the measurement model. Furthermore, the convergent validity of the measurement model was measured using the Average Variance Extracted (AVE). A threshold AVE value of 0.5 or higher indicates that the construct explains more than half of the variance of its indicators (Hair et al., 2016). All constructs showed AVE values greater than 0.5. Thus, the convergent validity of all constructs was established (See Table 2).

Table 10: Item loadings, Cronbach's alpha, Composite Reliability and AVE

Construct	Items	Loadings	Cronbach's alpha (> 0.7)	Composite reliability (> 0.7)	AVE (> 0.5)
Information Quality	IQ1	0.737	0.903	0.925	0.674
	IQ2	0.839			
	IQ3	0.814			
	IQ4	0.806			
	IQ5	0.865			
	IQ6	0.858			
System Quality	SYQ2	0.851	0.900	0.923	0.668
	SYQ3	0.878			
	SYQ4	0.744			
	SYQ5	0.780			
	SYQ6	0.794			
	SYQ7	0.850			
Service Quality	SEQ1	0.787	0.876	0.906	0.618
	SEQ2	0.832			
	SEQ3	0.728			
	SEQ4	0.765			
	SEQ5	0.805			

	SEQ6	0.795			
Perceived Risk	PR1	0.806	0.898	0.922	0.702
	PR2	0.776			
	PR3	0.845			
	PR4	0.846			
	PR5	0.910			
Perceived Value	PV1	0.876	0.891	0.925	0.755
	PV2	0.896			
	PV3	0.893			
	PV4	0.807			
Purchase Intention	PI1	0.836	0.902	0.932	0.774
	PI2	0.915			
	PI3	0.896			
	PI4	0.871			

The discriminant validity of the measurement model was examined using cross-loadings and Fornell-Larcker criterion (Hair et al., 2016). As shown in Table 3, the loadings of all indicators exceeded the cross-loading values. Further, the square roots of the AVE values were compared to the correlations of latent variables using the Fornell-Larcker criterion (See Table 4). Hence, discriminant validity of the measurement model was established since loadings of all indicators have exceeded the cross-loading values, and Fornell-Larcker criterion is satisfied.

Table 11: Cross-loadings

	IQ	SYQ	SEQ	PR	PV	PI
IQ1	0.737	0.520	0.513	-0.015	0.436	0.390
IQ2	0.839	0.503	0.568	0.020	0.498	0.436
IQ3	0.814	0.441	0.537	-0.021	0.467	0.408
IQ4	0.806	0.524	0.612	-0.040	0.571	0.459
IQ5	0.865	0.587	0.663	-0.068	0.558	0.461
IQ6	0.858	0.612	0.626	-0.130	0.513	0.474
SYQ2	0.460	0.851	0.548	-0.080	0.359	0.403
SYQ3	0.515	0.878	0.585	-0.098	0.386	0.426
SYQ4	0.533	0.744	0.526	-0.057	0.430	0.472
SYQ5	0.602	0.780	0.642	-0.095	0.509	0.475
SYQ6	0.476	0.794	0.492	-0.104	0.334	0.418

SYQ7	0.570	0.850	0.636	-0.141	0.408	0.482
SEQ1	0.565	0.536	0.787	-0.133	0.533	0.478
SEQ2	0.600	0.605	0.832	-0.097	0.519	0.481
SEQ3	0.523	0.457	0.728	-0.088	0.496	0.376
SEQ4	0.535	0.532	0.765	-0.186	0.458	0.424
SEQ5	0.569	0.543	0.805	-0.055	0.510	0.474
SEQ6	0.586	0.630	0.795	-0.252	0.450	0.502
PR1	-0.002	-0.074	-0.120	0.806	0.003	-0.107
PR2	0.032	-0.045	-0.030	0.776	0.076	-0.073
PR3	-0.075	-0.159	-0.144	0.845	0.016	-0.167
PR4	-0.014	-0.039	-0.100	0.846	-0.004	-0.173
PR5	-0.097	-0.137	-0.242	0.910	-0.048	-0.219
PV1	0.560	0.540	0.582	0.006	0.876	0.531
PV2	0.533	0.427	0.547	0.013	0.896	0.499
PV3	0.594	0.477	0.570	-0.050	0.893	0.582
PV4	0.456	0.275	0.475	0.024	0.807	0.477
PI1	0.453	0.459	0.484	-0.176	0.462	0.836
PI2	0.474	0.507	0.523	-0.203	0.542	0.915
PI3	0.440	0.438	0.524	-0.131	0.550	0.896
PI4	0.513	0.528	0.521	-0.174	0.565	0.871

Table 12: Discriminant validity result using Fornell-Larcker criterion

	IQ	PR	PV	PI	SEQ	SYQ
IQ	0.821					
PR	-0.054	0.838				
PV	0.620	-0.004	0.869			
PI	0.535	-0.195	0.604	0.880		
SEQ	0.717	-0.174	0.628	0.584	0.786	
SYQ	0.649	-0.118	0.500	0.551	0.704	0.817

Structural Model Analysis: Hair et al. (2016) recommended to examine the structural model for collinearity, before performing other analyses. According to Hair et al., each predictor construct's VIF value should be lower than the threshold level of 5. As all the VIF values of the constructs were lower than 5, there were no collinearity issues found in the model. The structural model was assessed using coefficient of determination (R^2 value), path coefficients (β) and their corresponding t-values and p-values. Based on the R^2 value of Purchase Intention, 39.3% of its variance was explained by a change in its independent variables namely Information Quality, System Quality and Service Quality. To examine the hypothesized relationships between the constructs, PLS bootstrapping procedure was used to produce the path coefficients (See Table 5 and Table 6).

Table 13: Structural model results (direct effects)

	Hypothesis	Path coefficient (β)	t-value	p-value	Decision
1	Information Quality -> Purchase Intention	0.173	2.039	0.042*	Supported
2	System Quality -> Purchase Intention	0.228	2.280	0.023*	Supported
3	Service Quality -> Purchase Intention	0.229	2.690	0.007*	Supported

*Significance at $p < 0.05$

Table 14: Structural model results (moderating effects)

	Hypothesis	Path coefficient (β)	t-value	p-value	Decision
4a	Information Quality -> Purchase Intention <i>moderated by Perceived Risk</i>	-0.048	0.628	0.530	Not Supported
4b	System Quality -> Purchase Intention <i>moderated by Perceived Risk</i>	-0.036	0.308	0.758	Not Supported

4c	Service Quality -> Purchase Intention <i>moderated by Perceived Risk</i>	0.124	1.270	0.204	Not Supported
5a	Information Quality -> Purchase Intention <i>moderated by Perceived Value</i>	0.038	0.503	0.615	Not Supported
5b	System Quality -> Purchase Intention <i>moderated by Perceived Value</i>	0.071	0.706	0.480	Not Supported
5c	Service Quality -> Purchase Intention <i>moderated by Perceived Value</i>	-0.156	2.004	0.045	Not Supported

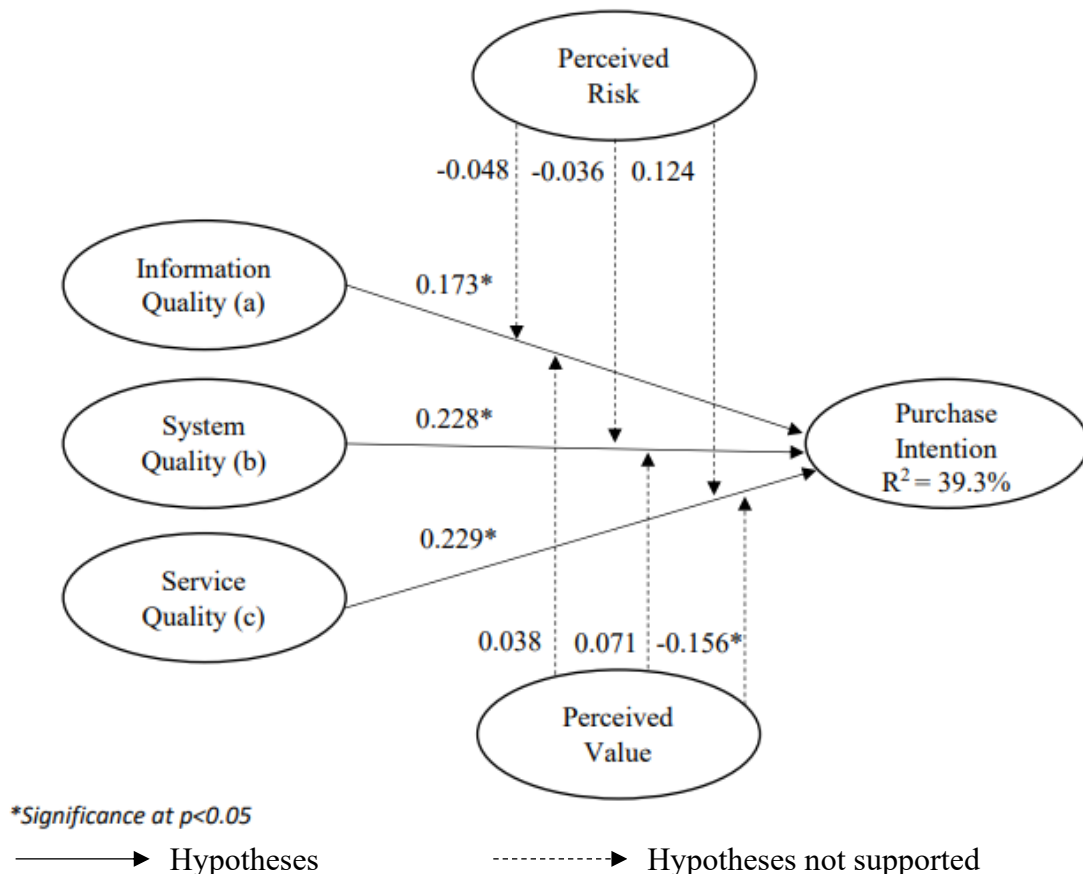
DISCUSSION OF FINDINGS

The purpose of this study was to explore the effect of Information Quality, System Quality and Service Quality on Purchase Intention as well as to assess the moderating effect of Perceived Risk and Perceived Value between Information Quality, System Quality and Service Quality and Purchase Intention in the Sri Lankan e-commerce context. Information Quality ($\beta = 0.173$, $p = 0.042$), System Quality ($\beta = 0.228$, $p = 0.023$) and Service Quality ($\beta = 0.229$, $p = 0.007$) had statistically significant positive effects on Purchase Intention (See Figure 2). Thus, Hypotheses 1, 2 and 3 were supported. Among the three quality dimensions, Service Quality was found to have the highest significant positive effect on Sri Lankan customers' Purchase Intention. This finding of positive effect was consistent with Bebbler et al. (2017), Khalil et al. (2019), Oni et al. (2020) and Qalati et al. (2021). It also aligned with the argument of Hsu et al. (2011) where they argued that Service Quality is more powerful in influencing customers' decisions than Information Quality and System Quality. It implied that customers give more importance to the level of customer service offered by the online seller, as there is no face-to-face interaction in the e-commerce environment. Findings indicated that System Quality has a similar power as Service Quality with a significant positive effect on Purchase intention. This finding was confirmed by Kuan et al. (2008). System Quality is essential in converting the website's visitors to website's customers by enforcing confidence in the website. Further, the findings confirmed a significant positive effect of Information Quality on Purchase Intention in consistent with the findings of Ali and Aziz (2022), Khalil et al., Kuan et al. and Oni et al. The findings proved the influence of website content on e-commerce customers' Purchase

Intention. Overall, the study affirmed a significant positive effect of Information Quality, System Quality and Service Quality on Purchase Intention in the Sri Lankan e-commerce context.

Exploring the moderating role of Perceived Risk, Hypotheses 4a, 4b and 4c postulated that the relationship between Information Quality (a), System Quality (b), Service Quality (c) and Purchase Intention are weaker when Perceived Risk is high. However, due to the non-significance of the moderating effect between Information Quality, System Quality, Service Quality and Purchase Intention, Hypotheses 4a, 4b and 4c were not supported. The analysis did not reveal a statistically significant result for the negative moderating effect of Perceived Risk on Information Quality and Purchase Intention. This insignificant result aligned with the studies of Ali and Aziz (2022) and Khalil et al. (2019) where those studies also could not confirm the moderating effect. Contrast to Khalil et al. (2019), the negative moderating effect of Perceived Risk on System Quality and Purchase Intention was not supported in the current study. Further, contrary to Hypothesis 4c, the findings indicated a positive moderating effect of Perceived Risk on the relationship between Service Quality and Purchase Intention. This finding was similar to that of Khalil et al. (2019), although the two studies were conducted in

Figure 3: Path coefficients of the research model



two different contexts, that is in a developed country and a developing country. Nonetheless, this positive moderating effect of Perceived Risk was not significant in the current study. This could be due to the fact that all study participants had experience in online purchasing, which may have caused a reduction in the perception of Perceived Risk (Bebber et al., 2017).

Hypotheses 5a, 5b and 5c postulated that the relationship between Information Quality (a), System Quality (b), Service Quality (c) and Purchase Intention are stronger when Perceived Value is high. However, due to the non-significance of the moderating effect between Information Quality, System Quality and Purchase Intention, 5a and 5b were not supported. Although 5c had significant result, it was not supported since the path coefficient is negative ($\beta = -0.156$, $p = 0.045$) i.e. the finding indicated that Perceived Value exerts a negative moderation effect on the relationship of Service quality and Purchase Intention. Although Perceived Value had a significant effect on the relationships of Information Quality and Purchase Intention, and System Quality and Purchase Intention similar to prior research (Fang et al., 2016; Gaberamos & Pasaribu, 2022), it did not reveal a significant moderating effect in the current study. However, unpredictably the findings showed that Perceived Value negatively moderated the effect of Service Quality on Purchase Intention. To be specific, the relationship between Service Quality and Purchase Intention was weaker when Perceived Value was high. Non-confirmation of these hypotheses could be possibly due to some bias in the responses of 'Daraz' customers who previously had positive purchasing experiences in the website and those who had negative purchasing experiences in the website. Since the customers incurred varied costs and received varied benefits on this single website, the perception of Perceived Value might have had variations.

IMPLICATIONS

Theoretical Implications: This study contributed to the theory by proposing a theoretical model which explored the impact of Website Quality on Purchase Intention in e-commerce with the effect of moderators. The current study extended the research on Website Quality by studying Perceived Value as a moderator, which has not been studied as a moderator in the e-commerce literature. Hence, the model can be considered as an unprecedented model as it has not been tested before by other studies. Further, the study contributed to the limited studies that have been conducted in the Sri Lankan e-commerce context. Although a few research were conducted in relation to Website Quality factors and consumers' purchasing behaviour in Sri Lanka (Athapaththu & Kulathunga, 2018; Deyalage & Kulathunga, 2019; Gamage &

Jayatilake, 2019), the direct relationship between quality dimensions and Purchase Intention, and also the effect of moderators on this relationship were not studied. Besides, the findings of the study strengthen the existing knowledge and the findings could be more important to developing countries, as there is lack of studies conducted in the selected context in developing countries.

Practical Implications: The current study provided directions for online retailing managers in identifying the role of e-commerce Website Quality dimensions in inducing customers' Purchase Intention. According to the findings, Customer service should be an ongoing-process from pre-purchase to post-purchase stages, since Service Quality exerts a greater influence on Purchase Intention. In order to improve sales, the online retailers need to maintain frequent interactions with customers through multiple mechanisms such as instant chats, helpdesks, timely response to queries, brilliant on-site search feature, product recommendations, display of frequently asked questions etc. Further, the study findings suggested that online retailers should give equal importance to System Quality. The professionals who design and administrate the e-commerce sites need to pay greater attention to the technical aspects of the website. Further, Information Quality needs to be carefully addressed by online retailers. The focus should be on ensuring that the customer is free from doubts when browsing the website, by means of providing relevant, sufficient, accurate and up-to-date information that meets customer needs and is personalized to each customer. Therefore, due to the proliferation of B2C websites, it is vital for online retailers to maintain high quality websites that satisfy all three quality dimensions in order to attract, encourage and retain online customers.

Limitations and Suggestions for Future Research

Similar to other research efforts, this study was also subject to some limitations. First, this study conducted a single-website survey to collect data. The possibility of some bias in the responses of those who had positive experiences compared to those who had negative experiences in the selected website can be considered as a limitation. This could be a possible reason for obtaining statistically non-significant results for most of the hypothesized moderating effects. Future research can consider conducting multi-website surveys and also can explore the role of Website Quality on other types of e-commerce websites such as travel websites, hotel websites etc. Next, this study was limited to operationalizing the moderators, Perceived Risk and Perceived Value in a uni-dimensional way. Future research is suggested to analyze these constructs in a multidimensional way (for example financial risk, product risk, security risk,

time risk, psychological risk) that could result in different findings. Finally, this study opted for a cross-sectional study due to the time constraint. Future research is recommended to follow a longitudinal study to extend the understanding of the causal relationships between Website Quality dimensions and Purchase Intention, with Perceived Risk and Perceived Value as moderators.

REFERENCES

- Aggarwal, A., & Rahul, M. (2017). Impact of perceived usability and perceived information quality on Indian consumer purchase intentions in online shopping: implication of TAM and S-O-R theory. *International Journal of Technology Transfer and Commercialisation*, 15(2), 160–183. <https://doi.org/10.1504/ijttc.2017.087683>
- Alhider, A. H. A. I. H. (2018). The Impact of Customer Satisfaction and Loyalty on E-Marketing: Moderating Effect of Perceived Value. *Journal of Marketing and Consumer Research*, 46.
- Ali, U. A., & Aziz, A. (2022). The Moderating Impact of Perceived Risk on the Relationship of Website Experience and Online Purchase Intention. *Pakistan Journal of Humanities and Social Sciences*, 10(2), 514–526–514–526. <https://doi.org/10.52131/PJHSS.2022.1002.0216>
- Anooja, A. (2015). Digital India with E-Commerce Revolution in Rural India: Transform India Digitally and Economically. *Engineering International*, 3(2), 57–64.
- Ariffin, S. K., Mohan, T., & Goh, Y.-N. (2018). Influence of consumers' perceived risk on consumers' online purchase intention. *Journal of Research in Interactive Marketing*, 12(3), 309–327. <https://doi.org/10.1108/JRIM-11-2017-0100>
- Asia Pacific Institute of Digital Marketing (Pvt) Ltd. (2021). *Digital Outlook Sri Lanka 2021 - Annual Market Insight Report*. <https://apidm.lk/apidm/Digital%20Outlook%202021.pdf>
- Athapaththu, J. C. D., & Kulathunga. (2018). Factors Affecting Online Purchase Intention: A Study Of Sri Lankan Online Customers. *International journal of scientific & technology research*, 7(9). www.ijstr.org

- Bai, B., Law, R., & Wen, I. (2008). The impact of website quality on customer satisfaction and purchase intentions: Evidence from Chinese online visitors. *International Journal of Hospitality Management*, 27(3), 391–402. <https://doi.org/10.1016/j.ijhm.2007.10.008>
- Bebber, S., Milan, G. S., De Toni, D., Eberle, L., & Slongo, L. A. (2017). Antecedents of Purchase Intention in the Online Context. *Journal of Relationship Marketing*, 16(1), 82–98. <https://doi.org/10.1080/15332667.2016.1242396>
- Chang, H. H., Wang, Y. H., & Yang, W. Y. (2009). The impact of e-service quality, customer satisfaction and loyalty on e-marketing: Moderating effect of perceived value. *Total Quality Management*, 20(4), 423–443. <https://doi.org/10.1080/14783360902781923>
- Chauhan, S., Banerjee, R., & Banerjee, S. (2019). The Impact of Website Quality and Reputation on Purchasing Intention Towards Online Shopping. *Journal of Content, Community & Communication*, 10(5), 151–158. <https://doi.org/10.31620/JCCC.12.19/15>
- Chen, C.-W. D., & Cheng, C.-Y. J. (2009). Understanding consumer intention in online shopping: a respecification and validation of the DeLone and McLean model. *Behaviour & Information Technology*, 28(4), 335–345. <https://doi.org/10.1080/01449290701850111>
- DeLone, W. H., & McLean, E. R. (1992). Information Systems Success: The Quest for the Dependent Variable. *Information Systems Research*, 3(1), 60–95.
- DeLone, W. H., & McLean, E. R. (2003). The DeLone and McLean Model of Information Systems Success: A Ten-Year Update. *Information Systems Research, Journal of Management Information Systems*, 19(4), 9–30.
- DeLone, W. H., & McLean, E. R. (2004). Measuring e-Commerce Success: Applying the DeLone & McLean Information Systems Success Model. *International Journal of Electronic Commerce*, 9(1), 31–47. <https://doi.org/10.1080/10864415.2004.11044317>
- Deyalage, P. A., & Kulathunga, D. (2019). Factors Affecting Online Customer Satisfaction: The Sri Lankan Perspective. *International Journal of Business and Management*, 14(2). <https://doi.org/10.5539/ijbm.v14n2p99>

- Fang, J., Wen, C., George, B., & Prybutok, V. R. (2016). Consumer heterogeneity, perceived value, and repurchase decision-making in online shopping: The role of gender, age, and shopping motives. *Journal of Electronic Commerce Research*, 17(2), 116.
- Gaberamos, O., & Pasaribu, L. H. (2022). The Effect Of Information Quality, Customer Experience, Price, And Service Quality On Purchase Intention By Using Customer Perceived Value As Mediation Variables (Study On Gofood Applications On The Millennial Generation). *Jurnal Mantik*, 5(4), 2470–2480. <https://iocscience.org/ejournal/index.php/mantik/article/view/2022>
- Gamage, D. S. K., & Jayatilake, L. (2019). Factors Influencing on Consumer Attitude towards Online Shopping: An Assessment of Research. *Saudi Journal of Business and Management Studies*, 4(1).
- Ghazali, M. S., Shahril, A. M., Norzeri, N. A. S., & Rosle, N. A. S. (2021). Hotel Website Quality and its Influence on Customer Purchase Intention in Selangor. *Hospitality & Culinary Arts (JTHCA) 2021*, 13(1), 110–122.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2016). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)* (2nd ed.). SAGE Publications, Inc.
- Hsieh, M. T., & Tsao, W. C. (2014). Reducing perceived online shopping risk to enhance loyalty: A website quality perspective. *Journal of Risk Research*, 17(2), 241–261. <https://doi.org/10.1080/13669877.2013.794152>
- Hsu, C.-L., Chang, K.-C., & Chen, M.-C. (2011). The impact of website quality on customer satisfaction and purchase intention: perceived playfulness and perceived flow as mediators. *Information Systems and E-Business Management*, 10, 549–570. <https://doi.org/10.1007/s10257-011-0181-5>
- Ihsan, A., Li, S., & Alexis, N. (2020). The Importance of Information, System and Service Quality of E-commerce Website on Customer Satisfaction and Loyalty in Bangladesh. *European Journal of Business and Management*, 12(14), 14. <https://doi.org/10.7176/EJBM/12-14-11>
- India's e-commerce evolution: An ideal case study for Sri Lanka | Daily FT.* (2013). <https://www.ft.lk/Columnists/indias-e-commerce-evolution-an-ideal-case-study-for-sri-lanka/4-207220>

- Jauhari, M. T., Kusumawati, A., & Nuralam, I. P. (2019). The impact of website quality on consumer satisfaction and purchase intention (Study Case of E-Commerce Lazada Indonesia in Malang City). *Jurnal Administrasi Bisnis (JAB)/Vol, 67(1)*.
www.digitalnewsasia.com
- Jayasingha, D., & Sumanasiri, A. (2022). *Factors Affecting Online Purchasing Behavior of Young Generation; Special Reference to Undergraduates of State Universities in Colombo District*.
- Khalil, H., Umopathy, K., Goel, L. C., & Reddivari, S. (2019). Exploring Relationships Between e-Tailing Website Quality and Purchase Intention. In *HCI in Business, Government and Organizations. ECommerce and Consumer Behavior*
- Khan, S. N., Baig, F. J., Umair, M., Ashraf, M. A., & Noman, M. (2021). The factors influencing online shopping: testing mediating role of purchase intention in Pakistan. *Journal of ISOSS, 7(1)*, 163–180.
- Kim, J., & Lennon, S. J. (2013). Effects of reputation and website quality on online consumers' emotion, perceived risk and purchase intention. *Journal of Research in Interactive Marketing, 7(1)*, 33–56. <https://doi.org/10.1108/17505931311316734>
- Kim, J., Yang, K., & Yong Kim, B. (2013). Online retailer reputation and consumer response: examining cross cultural differences. *International Journal of Retail & Distribution Management, 41(9)*, 688–705. <https://doi.org/10.1108/IJRDM-02-2012-0009>
- Kuan, H.-H., Bock, G.-W., & Vathanophas, V. (2008). Comparing the effects of website quality on customer initial purchase and continued purchase at e-commerce websites. *Behaviour & Information Technology, 27(1)*, 3–16.
<https://doi.org/10.1080/01449290600801959>
- Kühn, S. W., & Petzer, D. J. (2018). Fostering Purchase Intentions Toward Online Retailer Websites in an Emerging Market: An S-O-R Perspective. *Journal of Internet Commerce, 17(3)*, 255–282. <https://doi.org/10.1080/15332861.2018.1463799>
- Kumar, A., & Lata, S. (2021). The System Quality and Customer Satisfaction with Website Quality as Mediator in Online Purchasing: A Developing Country Perspectives. *Journal of Operations and Strategic Planning, 4(1)*, 7–26.
<https://doi.org/10.1177/2516600X21991945>

- Kwaku, A. R., & Antwi, S. (2021). Consumers Attraction to Purchase Online: Website Quality as a Major Influencing Factor. *Open Journal of Business and Management*, 09(03), 1133–1150. <https://doi.org/10.4236/ojbm.2021.93061>
- Liu, F., Xiao, B., Lim, E. T. K., & Tan, C.-W. (2017). The art of appeal in electronic commerce. *Internet Research*, 27(4), 752–771. <https://doi.org/10.1108/IntR-09-2016-0280>
- Mark, G., & Ganzach, Y. (2014). Personality and Internet usage: A large-scale representative study of young adults. *Computers in Human Behavior*, 36, 274–281. <https://doi.org/10.1016/J.CHB.2014.03.060>
- Mcknight, D. H., Choudhury, V., & Kacmar, C. (2002a). The impact of initial consumer trust on intentions to transact with a web site: a trust building model. *The Journal of Strategic Information Systems*, 11(3–4), 297–323. www.elsevier.com/locate/jsis
- Mehrabian, A., & Russell, J. A. (1974). An approach to environmental psychology. In *An approach to environmental psychology*. The MIT Press.
- Milan, G. S., Bebbler, S., Toni, D. De, & Eberle, L. (2015). Information Quality, Distrust and Perceived Risk as Antecedents of Purchase Intention in the Online Purchase Context. *Journal of Management Information System & E-Commerce*, 2(2), 111–129. <https://doi.org/10.15640/jmise.v2n2a2>
- Oni, R. U., Sentanu, W., Valentinus, N., & Manaf, P. A. (2020). Factors That Influence Online Purchase Intention Through E-Commerce in Indonesia. *International Journal of Management (IJM)*, 11(11), 158–171. <https://doi.org/10.34218/IJM.11.11.2020.016>
- Pham, Q. T., Tran, X. P., Misra, S., Maskeliūnas, R., & Damaševičius, R. (2018). Relationship between Convenience, Perceived Value, and Repurchase Intention in Online Shopping in Vietnam. *Sustainability*, 10(2), 156. <https://doi.org/10.3390/su10010156>
- Putri, W. K., & Pujani, V. (2019). The influence of system quality, information quality, e-service quality and perceived value on Shopee consumer loyalty in Padang City. *The International Technology Management Review*, 8(1), 10–15. <https://doi.org/10.2991/ITMR.B.190417.002>
- Qalati, S. A., Vela, E. G., Li, W., Dakhan, S. A., Thuy, T. T. H., & Merani, S. H. (2021). Effects of perceived service quality, website quality, and reputation on purchase intention: The mediating and moderating roles of trust and perceived risk in online shopping. *Cogent*

Business and Management, 8(1), 1869363.
<https://doi.org/10.1080/23311975.2020.1869363>

Sarkar, S., & Khare, A. (2017). Moderating effect of price perception on factors affecting attitude towards online shopping. *Journal of Marketing Analytics*, 5(2), 68–80.
<https://doi.org/10.1057/s41270-017-0018-2>

Singh, S., & Srivastava, S. (2018). Moderating effect of product type on online shopping behaviour and purchase intention: An Indian perspective. *Cogent Arts and Humanities*, 5(1). <https://doi.org/10.1080/23311983.2018.1495043>

Utama, D. A. R., Fikri, M. A., & Rini, P. L. (2022). The Effect Perceived of Service Quality, Perceived of Website Quality, and Perceived of Website Reputation on Purchase Intention: The Mediation Role of Trust in Online Shopping. *International Journal of Economics, Business and Accounting Research (IJEBAR)*, 6(2), 1185–1191.

Zhou, T. (2013). An empirical examination of continuance intention of mobile payment services. *Decision Support Systems*, 54(2), 1085–1091.
<https://doi.org/10.1016/j.dss.2012.10.034>

Zhou, T., Lu, Y., & Wang, B. (2009). The Relative Importance of Website Design Quality and Service Quality in Determining Consumers' Online Repurchase Behavior. *Information Systems Management*, 26(4), 327–337. <https://doi.org/10.1080/10580530903245663>

Usage of Internet Banking in Urban Poor during Covid 19 Pandemic

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ABSTRACT

The banks are trying to popularize the concept of Internet banking among their customers to meet the ever-increasing traffic in physical bank premises. Compared to some developed and developing countries, Internet usage to engage in banking activities is at a primary stage in Sri Lanka, mainly restricted to checking bank balances. However, Internet banking has entered a new path with the COVID-19 pandemic that Sri Lanka faced from the year 2020. In particular, urban Poor people are usually left out of the formal financial system and adoption of technology. These people are constrained by both the demand and supply sides to reach the door of technology. Among the challenges they faced were a lack of financial illiteracy, a Negative perception of technology, Irregular Income, a Lack of trust. Even though there are information technology companies and financial companies in the urban area, a large segment of the population is excluded from using the technology. This paper aimed to identify factors that affect internet banking usage in the urban poor during the COVID-19 pandemic. The article discusses research on factors affecting Internet banking usage, the advantages of Internet banking and the status of Internet banking during the covid 19 pandemic.

Primary data was collected through a semi-structured questionnaire from 200 urban low-income customers in the Colombo divisional secretariat. Data were analyzed using a binary logistic regression model. The study results have shown that income, education, and benefits of Internet banking positively impact Internet banking usage of urban poor. According to that, there is a need to study the financial inclusion of the urban poor to formulate appropriate strategies for increasing the inclusion of the urban poor. Therefore, urban poor people should be fully and effectively educated about Internet banking, and it helps to identify which policies and programs should be designed for the urban poor.

Keywords: Internet Banking, Urban poor, Usage, Technology, Covid 19

INTRODUCTION

Internet banking, also known as online banking, e-banking, or virtual banking, is an electronic payment system that enables customers of a bank or other financial institution to conduct a range of financial transactions through the financial institution's website. Otherwise, E-banking, virtual banking, online banking, and electronic banking relate to the same concept of 'Internet Banking'. Since the introduction of the facility in the early 1980s in The United States of America, the world soon grabbed onto the concept due to the significant benefits it brought to the banking industry. Banks and financial institutions, too, were eager to adopt this new

technology to cut costs while maintaining reliable customer service. (Jayasiri, and kariyawasam, 2016). We all know Internet Banking is becoming popular in every part of the world, and Mauritius is one country where many people are adopting Internet Banking. Also, online banking doesn't require consumers to visit a bank branch to complete most of their basic banking transactions. They can do all of this at their convenience, wherever they want—at home, at work, or on the go.

However, when we consider the history of Internet banking, Online banking was initially used in 1981 in New York, where major financial institutions including Citibank, Chase, and others offered home banking services using a technique known as videotext. In October 1994, Stanford Federal Credit Union was the first to provide Internet banking services. In some European countries, online banking has been adopted differently. It was seen that most banks, which were of medium size, used Internet banking at the very start. However, when comparing the response rates of North Europe with those of the South, it could be deduced that the Northern Europeans adopted online banking at a quicker pace. In early times, e-banking depended on the level of education, and in some parts of Europe, there were more highly educated people than in other regions. Also, when we are focusing on the Internet banking history of Asian countries, in January 2015, the online bank created by Tencent started a 4-month-long online banking trial operation, and in India, in 1998, ICICI Bank introduced Internet banking to its customers, and there are both public and private banks in Sri Lanka. Sri Lanka was the first South Asian country to introduce unrestricted, commercial internet connectivity in April 1995. Since it was first made available to Sri Lankans in March 1999, Internet banking services are now available via the Internet.

Contrary to expectations, clients are still in the beginning. For a nation whose internet usage is 8.3 percent, Only Internet banks and completely committed Internet users will not reach penetration for several more years. The banking sector in Sri Lanka has undergone a rapid transformation with the adoption of ICT (Information Communication Technology)-based banking solutions. The widespread usage of ICT in Sri Lanka's banking sector began only in the late 1980s with the introduction of the first ATM by HSBC Bank in 1986. The most recent delivery channel introduced for financial services is the Internet or Online banking.

On the other hand, it is the latest, most innovative, and most profitable banking service the banks offer. The Internet was first used as a platform for providing banking services in the

USA in 1995. In just a few years, this new channel has rapidly gained popularity in almost all developed countries and many developing countries.

In this way, the beginning and evolution of Internet banking can be pointed out. However, when focusing on Internet banking usage in Sri Lanka, Internet banking, which allows bank customers to access banking services conveniently and efficiently through the Internet, was introduced in Sri Lanka in 1999. Financial institutions offer facilities through Internet banking for customers mainly to obtain account information, apply or subscribe for financial products/services, perform their account/third-party fund transfers and pay utility bills. Reflecting the growing popularity of Internet banking, the volume of financial transactions affected by Internet banking continued to increase during the first quarter of 2019. It may be mainly due to customer convenience, time-saving benefits, and various promotional measures and awareness programs carried out by banks to enhance Internet banking usage (Arun, 2019). There were 11.34 million internet users in Sri Lanka in January 2022. Sri Lanka's internet penetration rate stood at 52.6 percent of the population at the start of 2022. "Bank enlarged the Internet customer base up to 23,000 and 300% increase in the number of transactions and 55% increase in the number of users".

Furthermore, it was implied that banks devote significant resources to creating online banking options due to their advantages. Internet usage in Sri Lanka has expanded significantly over the past five years (Amarasingha, 2014). In Sri Lanka, the use of the Internet and related technologies has steadily increased. The design and delivery of personal financial services are being rapidly altered via digitalization. In an effort to streamline operations and cut expenses, private and public banks in Sri Lanka are currently attempting to implement fresh concepts into the online banking system. Banks invest considerable money in enhancing and modernizing their online banking platforms. Instead of focusing on making a profit, banks established Internet banking primarily to satisfy their consumers, who can now conduct financial activities from any location without having to stand in line. Jegatheesparan, (2020) examined that research on online banking usage can all be used to gain a greater understanding of the advantages of online banking, the variables that influence its use, and the actions being taken to enhance online banking services in the future. By being aware of these aspects, banks can create rules and improve services that will assist them in eventually drawing in clients.

Despite the numerous benefits of online banking, Sri Lankan bank customers remain hesitant to embrace it. The banking and financial sector was one of Sri Lanka's first industries to adopt information and communication technology. It now ranks among the technology users who

utilize it the most. A bank may use the Internet to conduct financial transactions or provide customer services. Internet banking may be unfair in a global competition where Sri Lanka's number of operations is hardly significant compared to the overall situation. The first domestic, commercial bank only began providing transactional-level Internet Banking services in 1999. Hence, Sri Lanka has little time to establish its Internet banking industry. Sri Lankans are much less likely than those in other countries to use internet banking. (Aruna, 2019) Although the clients are aware of the Internet banking option, many are hesitant to use it for their banking operations. Local domestic banks must completely utilize the Internet to increase their productivity and profitability to compete with the competition from globalization. Growing online banking in Sri Lanka is crucial because it is a developing nation. There have been few studies about how customers in Sri Lanka perceive online banking. Additionally, policymakers pay less attention to the Internet banking service.

However, The COVID-19 outbreak, an unprecedented global health crisis that emerged in late 2019, has led to many adverse social and economic implications, necessitating countries to introduce new strategies and financial measures to overcome the ensuing negative situation. The lockdown measures implemented due to the COVID-19 outbreak have restricted cross-border movement of people and goods, disrupting economic and trade activities worldwide. Along with this global epidemic situation, there were drastic changes in the financial system of Sri Lanka, which had a significant impact on the banking system of Sri Lanka (Buddhika & Gunawardana, 2021). Internet banking has always been important for account holders nowadays, and the customer's experience with banking is significant. Accordingly, the recent covid 19 epidemic has managed to pose a great threat to the banking system, customers, and employees. Here, the banking system observed that customers are referring to Internet banking. However, with the COVID-19 pandemic, rumors of the virus spreading through currency notes have led people to turn to internet banking increasingly. Due to the lockdown situation in Sri Lanka and the virus's rapid spread, more people are accessing internet banking. Also, due to the COVID-19 epidemic, people turned to Internet banking, and thus, there was an increase in technical knowledge.

This paper aims to identify factors that affect Internet banking usage in the urban poor. The rest of the paper is structured as follows. The next section of the paper presents a broad review of the theoretical and empirical base on Internet Banking and its adoption. Section 3 discusses the results and discussion of the findings. Section 4 of the paper presents the conclusion drawn from the research.

LITERATURE REVIEW

The literature review aims to identify existing literature on the usage of Internet Banking in low-income customers.

Theoretical Background

The twenty-first century was characterized by information and communication technology, which has revolutionized our working and living patterns. A new era of banking, e-banking or Internet banking has emerged, where customers can perform their financial transactions electronically. After that, In 1986, Fred Davis developed the Technology Acceptance Model (TAM) for his doctoral dissertation. The Technology Acceptance Model, created by Davis (1989), is one of the most critical research models in studies of the factors influencing the acceptance of information systems and information technology. It is used to forecast people's intentions to use and attitudes toward information systems and information technology (Pallant, 2017).

Customer satisfaction is a general principle of customer service. It measures a customer's perception of the quality and utility of a product or service. Customer satisfaction can be measured by offering a service or product or having a relationship with a company, brand, or individual. Fred Reich introduced customer satisfaction theory in his book *The Ultimate Question: Driving Good Profits and True Growth*, published in 2003. Also, an asset of satisfied customers is the natural diamond for any organization and creates a competitive advantage over other companies.

Factors Affecting the Usage of Internet Banking

When we are considering factors affecting the usage of Internet banking, five factors were taken into consideration. There is perceived usefulness, perceived ease of use, perceived risk, subjective or social norms and behavioral intention, out of which social norms had a significant impact, showing that reference groups play an important role in Internet banking. Behavioral intention proves to be one of the maximum influencing factors, as most respondents had a positive response (Musiime & Malinga, 2011). It shows that with Internet banking, people in a very short time can visit several online banks to compare what they are offering, savings and checking account deals as well as their interest rates. Also, it provides a great deal more convenience than a conventional bank. The factor Perceived Risk came lower, which showed that respondents believe that their online information is not secure. People are sure that there

is no privacy when using this service and a possibility of facing problems while making transactions, and there is high uncertainty and risk about banks' actions with errors occurring during online transactions. It has already been discussed in detail in the studies of Chung and Paynter (2002), Siu and Mou, (2005), and (Limsombunchai and Weng, (2006) cited in (Agrawal & Vohra, 2012). It can see that similar results came out of their studies.

The usage of Internet Banking is not much affected by the global recession. The number of users is continuously growing as Internet Banking provides an easy and one-stop solution to all banking facilities and is safe and secure if accessed through the proper banking channel. The banking environment is more different and competitive due to the continuous and rapidly changing business environment in information technology. Moreover, modern banking services have brought in a paradigm shift in banking operations. Many banks have developed internet-based service models to increase customer transactions. As a result, banks have to adjust their strategies to achieve the current economic conditions. Nowadays, people are so busy in their work lives that they need more time to go to the bank to conduct their banking transactions. All banks provide online banking facilities to their customers as an added advantage. Online banking involves consumers using the Internet to access their bank accounts to undertake banking transactions. Internet banking involves the provision of facilities such as accessing accounts, fund transfers, utility bill payments, Deposits, and credit card payments. Online banking constitutes a fusion of conventional banking and web technology. Internet banking has improved service quality and superior service in the banking sector and also helps banks reduce costs (Jegatheesparan, 2020).

Also, according to the study conducted by, Kolinsky millions of Americans are currently using a variety of e-banking technologies and millions more are expected to be “online.” their paper explored factors affecting the adoption or intention to adopt three e-banking technologies and changes of the factors that affecting over time. This study found that relative advantages, complexity/simplicity, compatibility, risk tolerance, and product involvement are associated with adoption. Income, assets, education, gender and marital status, and age though adoption changed, the impacts of other factors on adoption have not changed overtime. (Kolodinsky & Hogert, 2004).

Benefits of usage of Internet banking

All people can access many banking services online. These services include paying bills, transferring funds, and viewing account statements. Banks also deliver their latest products and services online (Kumar et al., 2016). Internet banking is performed through a computer system that can connect to the banking site. We can also use internet banking on our mobile phones, Wi-Fi, or any connection. Online banking has become quite popular with the easy availability of cybercafes and mobile phones in India and China. When considering the advantages of Internet banking, it is simple to open and very easy to operate, quickly pay bills and transfer funds between accounts. People do not have to stand in a queue to pay off their bills. Also, people do not have to keep receipts of all of their bills, as they can now easily view transactions, perform tasks from anywhere and at any time, even at night or on holidays when the bank is closed, and manage several accounts easily through the Internet banking, people can keep an eye on their transactions and account balance all the time (Agarwal, 2022). Technology has been a driving force in changing business processes and the quality of services. Internet banking has become an essential and necessary factor in business strategy. They further add that the new electronic system, especially the development of Internet business in the last century, has significantly impacted how business is conducted.

Banks and the online service providers need to come together to bring a revolution in the field of online banking. There is also a need to generate awareness about online banking. Because that more and more people use it for their benefit. There have been a number of advantages of online banking and these advantages led to the increase in the number of online banking customers today. Customers are highly satisfied with online banking systems due to several reasons. Customers can avail of various types of facilities through the online banking system. They can check the account Customers is also highly satisfied because of the ease of transfer of payments. The Customers used to stand a long queues in banks to deposit money to their accounts. The customer's feelings, complaints and feedback cannot be accessed to directly facing the services. It has been a positive impact on the behavioral intentions of customers' acceptance of online banking. (Mahalakshmi & Kalaiyarasi, 2016)

The financial industry has witnessed a faster change in technology, greater competition among enterprises, and increased customer needs. Technology-based transactions influence the thinking and the operational response of the banks. Barnes and Howlett say that E-business has changed the traditional relationship between banks and its customers and has reduced the

personal contact between them (Hoehle et al., 2012). This changing scenario has an impact on the operating practices in the banking industry. The advantages include customer convenience, more beneficial rates to customers, additional free services, mobility i).erations, unlimited transfers at no cost, ease of use, and environmentally friendly. Furthermore, customer convenience: Customers can access and do transactions 24 hours a day, 365 days a year. It also observed that convenience is essential in supporting Internet banking.

However, if the internet service is unavailable, customers can still do their work via mobile telephones. Banking through the Internet is faster, easier, and more efficient. More beneficial rates: Banks offering Internet banking services, especially direct banks that do business only through the Internet, save money due to less or very little infrastructure and overhead costs. They can pass on these savings to their customers in the form of higher interest rates, lower rates on loans, and lower mortgage charges. In addition, the benefits are also offered in other forms, like no minimum deposits and carry no minimum balance or service fees. Additional free services: Additional free services offered to the customers include payment of bills online, such as electricity, water, and telephone bills. Banks also provide management tools to customers to carry out budgeting, forecasting, financial planning, loan calculations, investment analysis, etc. Mobility in transactions: Internet banking can be done from anywhere at a convenient time. The banking facility through mobiles and smartphones is an additional advantage. Unlimited transfers at no cost: Internet banking can automatically transfer funds from one account to another. They also do payroll payments and automatic bill payments per the customer's direction. Ease of use: Online banking enables similar transactions to that of traditional banking. In case of a problem, the customer can get assistance online or by email (Obeidat, 2016). Internet banking is perceived to be converted in every way and is one of the main critical factors affecting Internet banking usage. However, client banking requirements will always have to start on the next business day. Also, Transactions, transaction processing, and data transfer happen almost instantly in Internet banking. Georgia Institute of Technology Atlanta Report (2004), Internet banking security is a significant factor affecting its usage. Furthermore, Internet banking can provide banking activity at the lowest cost possible (Kariyawasam, 2016).

Internet banking and the COVID-19 pandemic

When considering Internet banking services during the COVID-19 epidemic, COVID-19 has changed people's lives and made purchase decisions. The fear of COVID-19 is life-threatening

for people around the world. However, students are restricted from taking a class online, teachers and officials need to have online meetings, and Markets are focusing on electronic means, too. It is identical in the banking sector that digital means are getting popular as account holders are already leaning toward online banking. COVID-19 has shut down business worldwide and put a considerable number of people below the poverty line. Also, many opportunities are created, e.g., for information technology businesses, health care, and security firms. Traditional banking has declined during COVID-19, and consequently, an increase in e-banking platforms is observed. Thus, the empirical potential to evaluate the banking services is needed to understand the behavioral changes (Haq & Awan, 2020). Internet banking allows a user to conduct financial transactions via the Internet. Also, online banking is also known as Internet banking or web banking. Internet banking offers customers almost every service traditionally available through a local branch, including deposits, transfers, and online bill payments. During the Covid19 situation, the Government has implemented a lockdown from March 2020 to August 2020. Due to this, most of the industries and organizations are closed. Furthermore, most of the people lost their jobs. However, banks were allowed to function with limited staff and in certain areas.

So, people cannot come out for their regular banking needs, and they find it difficult, and the banks ask their customers to use Internet banking services. Hence, the need for Internet banking has increased during the covid19 situation. The Reserve Bank of India (RBI) said that 57 percent of customers use Internet banking. Then Internet banking is most important for the customers. According to health recommendations, avoiding personal contact is one of the most effective ways to contain the current COVID-19 epidemic. It means reducing the movement of people and increasing the time they spend at home as much as possible. Most banks in the affected countries have reduced the opening hours of their branches, and they recommend that their customers use Internet banking. To encourage the use of this channel, many banks have taken the opportunity to send out positive messages and remind their customers of the benefits of Internet banking. Many banks have also tried to promote Internet banking by sharing tutorials and expanding the types of transactions customers can carry out remotely. The role of banking in the COVID-19 situation: However, people still require banking services, and even minimal in-branch services, because not all users will immediately transition to online channels (Dauda & Aliu, 2022).

For example, elderly customers, who are among the most vulnerable to COVID-19, are the least likely to increase their use of internet banking. Use of Internet banking services by age range in Europe shows that among users between 55 and 64 years of age, 48% use Internet banking, less than half, and among those aged between 65 and 74, the figure is even lower at 33%. In any event, however, the increase in the adoption of Internet banking services is being driven by the pandemic and the health restrictions in place; as a result, it could bring about positive change in the medium and long term (Cherukur & Sivakumar, 2020). The current world is unified with expanding on the web admittance to administrations. One piece of this which is growing is E-banking. E-banking is otherwise called electronic banking or Internet banking. Web-based banking permits a client to manage monetary exchanges utilizing the Internet.

Internet banking offers clients almost every help customarily accessible through a nearby office, including stores, moves, and online bill installments. During the COVID-19 pandemic, the Government announced a lockdown from March 2020 to August 2020. Because of this, the greater part of the organizations and associations were shut down, and many lost their positions. Also, banks were permitted to work with restricted staff and in specific regions. Along these lines, individuals cannot come out for their customary requirements for banking, and they think that it is troublesome. The banks request that their clients utilize Internet banking administrations. Hence, the need for E-banking increased during COVID-19, and the Reserve Bank of India (RBI) said that 57 % of customers are using online banking. The banks concentrated more on online banking for the better experience and satisfaction of the customers. As per wellbeing proposals, avoiding individual contact is one of the best approaches to contain the current COVID-19 pandemic. It implies decreasing the development of individuals and expanding the time they spend at home however much as could reasonably be expected. Following these signs, most banks in the influenced nations have decreased the opening times of their branches, and they suggest their customers utilize web-based banking. To energize the utilization of this channel, many banks have made a move to convey positive messages and help their customers remember the advantages of Internet banking. These advantages incorporate the simplicity of completing any exchange all day. A few banks have additionally attempted to advance Internet banking by sharing instructional exercises and growing the kinds of exchanges customers can do distantly. The banking industry has declined during COVID-19, and thus, expansion in e-banking stages is noticed. Electronic banking

constructed a productive progression of administrations furnished with diminished functional and fixed expenses with more security highlights joined (Chavda, 2021).

In Sri Lanka, financial services are marked as essential services. All these new trends place customer convenience at the heart of future banking. Banks are now presented with more opportunities than ever due to COVID-19 impacts and are facing an exciting future. In this COVID-19 pandemic, Internet banking applications have made a sudden gigantic push in terms of number of users. COVID-19 social distancing spotlighted digital delivery and digital transformation in banking services. The COVID-19 pandemic created a shift in behavior, as people are forced to use Internet banking from their mobile devices. During this unique time, banks leverage their client experience with digital product advantages more than ever. More importantly, as consumers get more comfortable and find that managing their money digitally is more accessible and safer, they will stop visiting their bank branches in the future (Sureshkumar, 2020). Internet banking and E-payment usage have improved customer's life by providing ease of payment for online transactions. The effect of intention, attitude, perceived usefulness, and ease of use have long been recognized in Internet banking. However, very few studies have examined these concepts from the viewpoint of the COVID-19 pandemic. The findings suggested that intention to use online banking significantly influences online banking and e-payment usage. Similarly, attitudes toward online banking significantly impact the intention to use online banking and e-payment during the COVID-19 pandemic (Agarwal, 2022).

METHODOLOGY

Study Population: The field of study is the Colombo district. Colombo district was chosen because Colombo is the commercial hub and the fastest-growing city in Sri Lanka, and it has the leading information technology companies and financial institutions. At the same time, Colombo has the largest slum area in the country and consists of a low-income population. Colombo remains diverse in terms of its ethnic mix, economic activities, and income disparities of the city population. Therefore, The population of the study was urban low-income customers in the Colombo district.

Sample of the study: A sample size of 200 low-income customers transacting with BOC and People's Bank branches was taken.

Sampling Method: Purposive sampling was utilized for sample selection. The purposive sampling method was used to select the sample of low-income customers from selected BOC branches and People Bank branches in the Colombo divisional.

Data Collection Method: Primary and secondary data were collected for the research. Primary data was collected through a sample survey utilizing a semi-structured questionnaire evenly distributed to respondents. The questionnaire is designed to collect the required information from the customer. The questionnaire consisted of 20 questions in both closed-ended and open-ended forms. For the secondary data, the Annual reports of the central bank of Sri Lanka, the reports issued by the Department of Census and Statistics, the reports of the Samurdhi Authority of Sri Lanka, and reports of the Colombo and Kolonnawa divisional secretariat have been used. In addition, research reports, books, and journals related to research topics and other publications are utilized.

Data Analysis Method: Data were analyzed using a statistical software package for SPSS version 26.0. The binary logistic regression model was used to assess and identify Internet banking usage. Binary logistic regression analysis is a specialized regression formulated to predict a binary categorical variable. Therefore, this model is appropriate when the dependent variable is binary (Hair et al., 2010). When the use of internet banking, the value "1" is assigned, and "0" no use of internet banking. Therefore, in this study, the logit regression model explained below was used to explain Internet banking usage in the study area.

$$Y = B_0 + B_1Ag + B_2Edu + B_3Gen + B_4Inc + B_5Dev + B_6Obs + B_7Ben$$

Y = Usage of Internet Banking (UIB)

B₀ = Constant

B₁Ag= Age

B₂Edu= Education Level

B₃Gen= Gender

B₄Inc = Family Income

B₅Dev = Device

B₆Obs = Obstacles

B₇Ben = Benefits

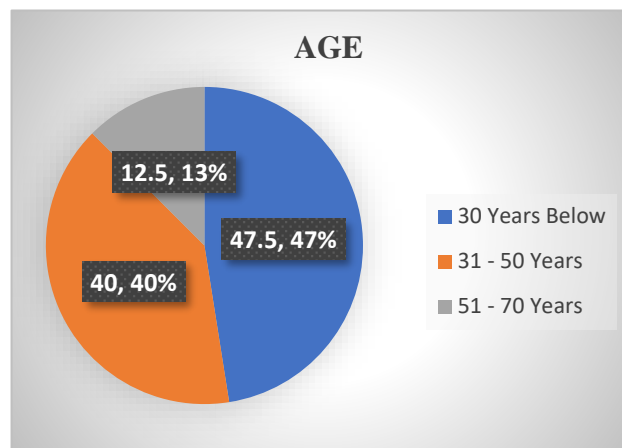
In this equation, usage of Internet banking is considered as the Dependent variable and Binary variable, and Age, Education Level, Gender, Family income, Device, Obstacles, and Benefits are considered as independent variables.

DATA ANALYSIS AND DISCUSSION

Demographic data analysis: This section describes the respondents' demographic characteristics, including the percentages of age, gender, educational level, and family income category of the research sample, in terms of frequency analysis.

Age Composition of the Sample

Figure 1: Age of the sample



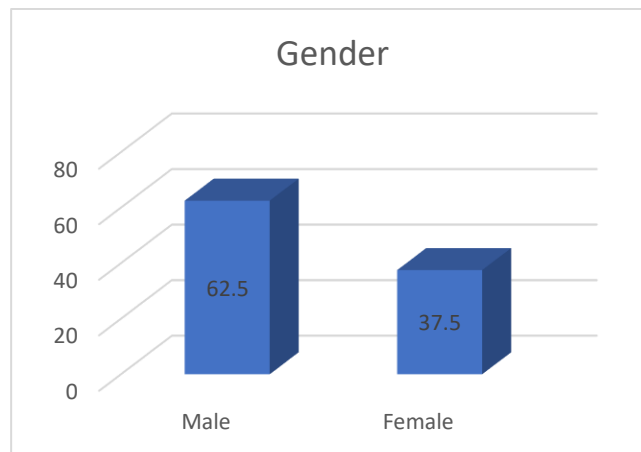
Source: Survey Data, 2023

According to the above pie chart, Internet banking usage is used more by members under the age of 30. It is 47.5% as a percentage. The lowest use of Internet banking is done by members between the ages of 51-70 years, which is 12.5%.

Gender Composition of the Sample

The male's behavior and opinion differ from that of the female. Their opinion plays a major role in using Internet banking. According to that, there are 62.5% males and 37.5% females in the sample, implying that the males are more engaged in Internet banking activities in BOC and People's Bank branches.

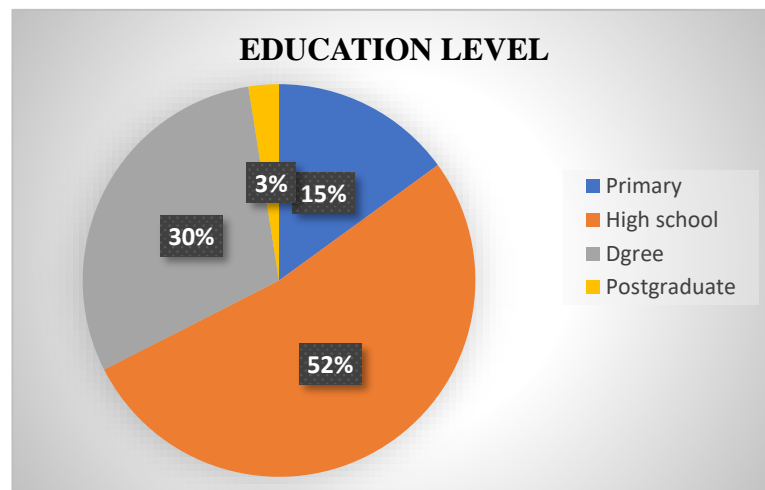
Figure 2: Gender Composition of the sample



Source: Survey Data, 2023

Educational Level Composition

Figure 3: Education level of the respondent



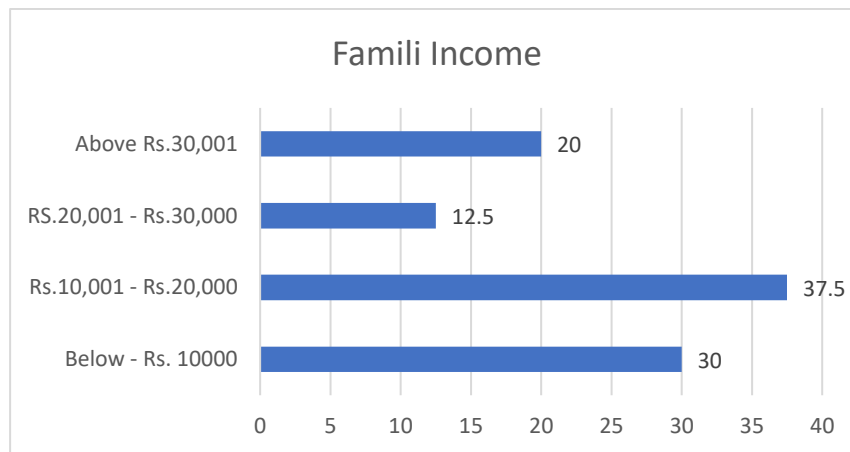
Source: Survey Data, 2023

Regarding the education level, internet banking has mostly been used by high schools. It is a percentage of 52%. As a minimal number of the sample are postgraduates, it shows a percentage of 3%.

Income Composition

To analyze the income status of the sample, the income of the sample was categorized into five categories: less than Rs10000, Rs 10001 to 20000, Rs 20001 to 30000, and more than 30001.

Figure 4: family income of the respondent.



Source: Survey Data, 2023

Figure 04 shows that the majority of respondents belong to the income group Rs 10001, which is 37.5%, and a smaller number of respondents belong to the income category of less than Rs 10000 per month.

Binary logistic regression analysis

Diagnostic Tests

Similar to other multivariate data analysis techniques, important assumptions or diagnostic tests were performed to check the validity of the data for the current binary logistic regression model. Accordingly, diagnostic tests such as autocorrelation and omnibus Tests of model coefficients and Hosmer and Lemeshow tests were used to check model fitness.

Autocorrelation

Autocorrelation is the most celebrated test for detecting correlation, developed by statisticians Durbin and Watson. The regression result shown in the table below the Durbin – Watson d statistics for the current study is 2.307, which is near 2, so we can conclude that the autocorrelation assumption is met, or the residual terms are uncorrelated.

Table 1: Autocorrelation

Model Summary^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin Watson
1	.752 ^a	.566	.471	.27993	2.307

Source: SPSS survey output, 2023

Other major assumptions such as normality, heteroscedasticity, and linearity, which are common in many multivariate data analysis techniques, are not compulsory for logistic regression because the error terms of a discrete variable follow the binomial distribution instead of normal distribution, thus invalidating all statistical tests based on the normality assumption. In addition, the variance of the dichotomous variable is not constant, creating instances of heteroscedasticity as well. Moreover, logistic regression does not require linear relationships between the dependent and independent variable; it can address linear effects even when exponential and polynomial terms are not explicitly added as additional independent variables because of the logistic relationship.

Table 2: Model fitness

A. Omnibus Tests of Model Coefficients				
		Chi - square	Df	Sig.
Step 1	Step	23.134	7	.002
	Block	23.134	7	.002
	Model	23.134	7	.002
C. Hosmer and Lemeshow Test				
Step 1	Chi - Square	Df	Sig.	
	10.438	8	.236	

Source: SPSS Survey output, 2023

The omnibus Tests of Model Coefficients presented above indicate how well the model performs compared to a model with none of the predictors entered. This is referred to as a 'goodness of fit' test. In this case, the value is .000. Therefore, the model is better than SPSS's original guess, which assumed that everyone is included in the usage of Internet Banking service, and it is reported as a chi-square value of 23.134 with 7 degrees of freedom.

The other Statistical measure is Hosmer and Lemeshow's measure of overall fit. This statistical test measures the correspondence of the actual and predicted values of the dependent variable. In our study, the chi-square value for the Hosmer – Lemeshow Test is 10.547 with a significance level of 0.229. This value is greater than .05, therefore indicating support for the model.

Table 3: Model summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	13.965 ^a	0.439	0.727
a. Estimation terminated at iteration number 7 because parameter estimates by less than .001.			

Source: SPSS Survey output, 2023

The Cox & Snell R Square and the Nagelkerke R Square values provide an indication of the amount of variation in the dependent variable explained by the model / independent variables. These are described as pseudo-R Square statistics, rather than the true R square values that you will see provided in the multiple regression output. In this study, the two values are .433 and .717, suggesting that between 43.3percent and 71.7 percent of the variability is explained by this set of variables.

Table 4: Binary Logistic Regression Estimation Result

Variables	B	S.E	Wald	Df	Sig.	Exp (B)
Age	.507	1.372	.137	1	.711	1.661
Gender	1.486	1.911	.605	1	.437	4.421
Education	1.230	1.545	.634	1	.042	1.292
Income	1.325	1.352	.959	1	.032	3.761
Device	2.106	1.835	1.317	1	.251	8.212
Obstacles	-.378	.912	.172	1	.679	.685
Benefits	2.707	1.250	4.689	1	.030	14.991
Constant	-10.021	5.109	3.848	1	.050	.000

Source: SPSS Survey output, 2023

Table 4 shows us that the estimated model is as follows.

$$\text{Logit (UIB)} = -10.021 + 0.507\text{Ag} + 1.486\text{Gen} + \mathbf{1.230\text{Edu}} + \mathbf{1.325\text{Inc}} + 2.106\text{Dev} - 0.378\text{Obs} + \mathbf{2.707\text{Ben}}$$

The result related to the impact of education on the respondent status towards usage of Internet banking revealed that it had a positive significant impact with a p value of 0.042 and an odds ratio of 1.292, which implies that those who have education about Internet banking had 1.292 times more likely to use of internet banking.

Logistic regression output concerning income indicated that it positively impacted internet banking usage with p value of 0.032 and beta value of 3.761. The results imply that respondents in the higher income category were 3.7 times more likely to use Internet banking facilities.

Benefits, as one of the predictor variables in the model, had a positive significant impact on Internet banking usage with a P value of 0.030 and an odds ratio of 14.991. Also, considering the confidence level, the upper bound is 0.127, and the Lower bound is 0.421. It implies that those respondents who have benefits of using Internet banking are 14.9 times more likely to use internet banking facilities. The benefits of using Internet banking have affected the Awareness and usage of Internet banking during the COVID-19 pandemic. The benefits of Internet banking are the ability to manage time, transact on holidays, streamline the safety net, reduce uncertainty and risk, and reduce transportation costs. Due to these benefits, people are more inclined towards internet banking.

However, results related to age, gender, device, and obstacle indicated that those had a negative significant impact on Internet banking usage.

CONCLUSION

The main objective of this study is to identify the factors that affect Internet banking usage in the urban poor during the COVID-19 pandemic. The research findings revealed insights into the reasons that hinder the usage of Internet banking services in Urban poor. Therefore, based on the findings from the binary logistic regression result, it is possible to conclude that among the independent variables included in the model, income, education, and benefits of Internet banking positively impact Internet banking usage in urban low-income earners. Hence. Age, gender, device, and obstacles do not significantly impact Internet banking usage. Further, it was concluded that a major proportion of urban poor customers were not familiar with internet and internet usage. A high percentage of urban poor customers answered that their lack of usage of internet banking is due to their lack of education and knowledge of how internet banking works.

POLICY IMPLICATION

The findings of this study have important practical implications for public banks as well as for private banks. Also, Today, along with technological advancement and globalization, the world is trending towards Internet banking. Thus, Sri Lanka needs a lot of Digital knowledge to deal with the world. Therefore, people should be fully and effectively educated about Internet banking. With the digitalization of the world, awareness programs about Internet banking should be organized to educate the people in Sri Lanka. The most challenging aspect of online banking was detected as the lack of user-friendliness in websites. Hence, the banks need to improve the simplicity and operational convenience of their online platforms. Further, the banks should educate the urban poor customers on how to operate Internet banking on the Internet and extend their prompt assistance towards familiarizing customers with engaging in Internet banking activities.. The banks, regulatory bodies, and policymakers should focus on improving urban poor customers' knowledge of Internet banking.

REFERENCES

- Agrawal., and Vohra, Shubhra, Factors Affecting Usage of Internet Banking Services (June 18, 2012). <http://dx.doi.org/10.2139/ssrn.2087215>
- Amarasingha. (2014). Latest Internet penetration statistics for srilanka.
- Arun, A. (2019). A study on Awareness of Internet banking services in college students of Loknow city. *International Journal of Scientific Development and Research*.
- Aruna, A.S. (2019). Customer Perception on Internet Banking: With Special Reference to Bank of Ceylon in Sri Lanka, *International Journal of Research in Engineering, IT and Social Sciences*, 09(5).
- Atlanta Report, (2004), *Georgia Institute of Technology*
- Buddhika, H.K., & Gunawardana, T.S. (2021). Customer satisfaction on E practices in private commercial banks, Sri Lanka.
- Chavda, V. (2021). Effectiveness of E - banking during covid 19 pandemic, *International Journal of Advanced Research in computer and communication Engineering*.
- Cherukur, R.B., & Sivakumar, S. (2020). A study on customers perception towards online banking during covid-19. *The Journal of Contemporary Issues in Business and Government*, 26, 980-986.

- Dauda, S., & Aliu, N.J. (2022). The impact of COVID-19 on customers' online banking and e-payment usage in Nigeria. *International Journal of Intellectual Discourse*, 4(3), 363–380.
- Hair, J.F., Black, W.C., Babin, B.J. and Anderson, R.E. (2010) *Multivariate Data Analysis*. 7th Edition, Pearson, New York.
- Haq, I.U., & Awan, T.M. (2020). Impact of e-banking service quality on e-loyalty in pandemic times through interplay of e-satisfaction. *Vilakshan - XIMB Journal of Management*.
- Hoehle, H., Scornavacca, E., and Huff, S. (2012). Three decades of research on consumer adoption and utilization of electronic banking channels: A literature analysis, *Decision Support System, Volume 54, Issue 1, Pages 122-132*.
- Jayasiri, N. & Kariyawasam. (2016). Awareness and usage of internet banking facilities in Sri Lanka, *International journal of scientific Research and Innovative Technology*, 173-190.
- Jegatheesparan, K. (2020). Factors Influencing on customer usage of online banking : from the perspective of Technology Acceptance and Theory of Reasoned Action Models. *Journal of Marketing*.
- Kumar, A.A., Ariharan,A., Immanuvel, A.D. (2016). Internet banking - benefits and challenges, *International Conference on "Innovative Management Practices"*, 1(1).
- Kolodinsky, J. M., Hogarth, J. M., & Hilgert, M. A. (2004). The adoption of electronic banking technologies by US consumers. *International Journal of Bank Marketing*, 22(4), 238-259.
- Mahalakshmi, K. R., & Kalaiyarasi, P. (2016). A Study on Use of Mobile Banking and Customer Satisfaction with Special Reference to Trichy Region. *Imperial Journal of Interdisciplinary Research*, 2(5), 633-636.
- Musiime, A., & Malinga, R. (2011). Internet Banking, Consumer Adoption and Customer Satisfaction, *African Journal of Marketing Management*, 3, 261-269.
- Obeidat, M. S. (2016). Customer Acceptance of Internet Banking in Dubai, *IOSR Journal of Business and Management*, 17(12), PP 61-80.
- Pallant, J. (2011). *SPSS Survival Manual a step by step Guide to Data Analysis using SPSS*.
- Pallant, J. (2017). The literature review of Technology Adoption Models and Theories for the Noveity Technology. *Journal of information system and technology Managment*.

Sureshkumar, L. (2020). Will covid 19 pandemic change the retail Banking into Digital, <https://www.linkedin.com/pulse/covid-19-pandemic-change-retail-banking-digital-lesokumar-sureshkumar>.

Weerathunga, W.A.S.P., & Jayasiri, N. (2019). *popularity of E-banking in Srilanka*. Retrieved from <https://www.researchgate.net/publication/266460706>.