Enhancing customer satisfaction in e-commerce: The role of service quality and brand trust

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ABSTRACT: Although online shopping has become more and more popular, keeping clients is still a big problem. Satisfaction, which is mostly dependent on comprehending and establishing trust with customers, is what determines whether or not a business can retain its customers. In the ever-changing world of e-commerce, this study examines the relationship between consumer loyalty, happiness, and service quality, with a focus on brand trust. The findings indicate that several aspects of service quality, including order processing, speed, convenience, and quality of communication from couriers, have a big impact on how satisfied customers are with their online purchases. The most powerful element influencing pleasure, however, turned out to be ease. The relationship's key mediator is brand trust. As a result, consumer loyalty is increased and uncertainty is decreased. In particular, in developing e-commerce countries such as Pakistan, the study emphasizes how important it is to enhance consumer happiness, service quality, and brand credibility. By stressing the mediating function of brand trust and highlighting the dynamics in emerging nations, this research adds to the body of current work. It emphasizes how crucial trust and quality customer service are to creating long-lasting, customer-focused e-commerce enterprises. While acknowledging its limits, the study provides useful insights and avenues for further cross-country research.

KEYWORDS: brand trust (BT); reliability (RI); assurance (AS); empathy (EP); service quality; customer satisfaction (CS)

1. Introduction

Online shopping has gained considerable attention over the past decade. One of the main problems in online shopping is customer retention. Customer retention is simply based on the phenomenon that if a customer is satisfied, he is likely to shop more regularly, hence becoming a loyal customer[1]. The concept of customer satisfaction and customer retention has become a point of interest in the business community. One of the main factors that customer satisfaction is built on is an understanding of customer needs. A company that understands customer needs accurately is more likely to have a competitive advantage over its rivals[2]. Another major factor mentioned in the literature is customer engagement, which is based on five dimensions: interaction, attention, identification, eagerness, and captivation. These dimensions should be prioritized by the retailers because they can affect customer loyalty and satisfaction. Moreover, if a customer is unsatisfied with service, they are unlikely to shop again[3].

Brand trust is defined as a consumer's confidence in a certain brand. Brand trust is mostly based on the past experience of customers with that brand. Corporate image of the brand. Specifically, trust helps reduce a sense of uncertainty in the consumer's mind. In a market like Pakistan, the biggest issue is consumer trust in online retailers. During the era of COVID, many brands established their e-stores, which helped instill trust in online shopping. The central aim of this study is to identify different factors of service quality closely related to customer satisfaction in the online market.

This study aims to understand the role of brand image in building customers' perceptions of service quality and enhancing consumer satisfaction. Numerous research studies have been conducted to understand the interrelationship between service quality, customer loyalty, and customer satisfaction. However, there still exists a gap in context for the newly emerged situation after COVID-19 and the closing of conventional stores. In recent times, the swift development of information and communication technology (ICT) and the outbreak of the COVID-19 pandemic coronavirus have led to explosive growth in e-commerce businesses. Online shopping is fast becoming a more preferred option as compared to traditional physical shopping. In this scenario, Pakistan is no exception; e-commerce companies in Pakistan have witnessed rapid growth as well. Conversely, providing better quality of service and customer satisfaction for online customers is one of the most challenging tasks for these e-commerce companies. In this context, the objective of this study is to analyze e-commerce service quality based on customers online shopping experiences in Pakistan[4].

It was found in multiple studies that service quality and consumer satisfaction with online shopping are dependent on various factors. For instance, it was found that there is a relationship between customer online shopping satisfaction and timeliness, courier service communication quality, delivery quality, convenience, and order deviation handling. However, the results of linear regression show that all five dimensions of express service quality have a positive effect on customer online shopping satisfaction. However, their order is from high to low influence in terms of convenience, delivery quality, courier service communication quality, timeliness, and error handling. Similarly, many studies used system quality and information quality dimensions to measure customer satisfaction with online purchases of goods[5]. Most of the research focused on developed countries where there was already an established trend of online shopping. Research in developing countries will provide a unique perspective and help in the generalization of research findings. Furthermore, researchers have argued that customer satisfaction drives customer loyalty, both behaviorally and attitudinally[6]. Various researchers, like Chandrashekaran et al.[7] and Veloutsou[8], argued that research already done in this field has failed to decisively describe the complex relationship between customer satisfaction, customer loyalty, and disloyalty dimensions. This study will explain the relationship between service quality dimensions and customer satisfaction[9]. The study also identifies the most related service quality elements in relation to customer satisfaction. This study contributes to the service industry literature by explaining service quality dimensions with context to customer satisfaction, loyalty, and disloyalty. It explains the relationship between customer satisfaction and service quality dimensions. This study will also help the e-commerce industry develop a more customer-focused strategy to enhance customer loyalty and satisfaction. The latter part of the paper includes a literature review, hypotheses development, methodology, results, discussion, and conclusion sections.

2. Literature review

2.1. Customer satisfaction

The perception of customer satisfaction was introduced to the market in the mid-19th century.

Understanding satisfaction is the assessment of a customer's emotional state after matching the first-hand experience with a product or service with their expectations[10]. In today's customer-focused market, customer satisfaction is characterized as the measure of the customer's emotions, whether satisfactory or unpleasant, developed by comparing the presence or appearance of a desirable product or service to the expected value, as concluded by Oliver. His basic idea is as follows: the most prominent indicator of customer satisfaction is the correlation between pre-purchase presumptions and anticipated real products or services[11]. Customer satisfaction has a linear relationship with customer loyalty, profitability, and market share. If the clients are satisfied with the value of the product or service, they are more likely to stay in business with the company and occasionally recommend it to other people. Kotler and Keller[12] define customer satisfaction as the extent to which products and services' perceived performance fits a consumer's expectations. There are many indicators to measure customer satisfaction; some of them are customer reviews and compliments, interest, repurchase, willingness to recommend a product or service to other people, and the public reputation of the company[12,13]. The approach to seamless online customer satisfaction is the sustainability of customer satisfaction in the digital paradigm, and it also covers the feeling of the online shopping experience. As a comprehensive concept, a lot of aspects, such as competitive prices, logistical support, payment methods, customer service, and the quality of the user's convenient front-end utilities[14], E-commerce Service satisfaction means an assessment of the services the customer uses when they purchase a product or service online[15]. E-commerce Product satisfaction means the overall evaluation of the product's standards and quality[16]. Product and service satisfaction are two major driving factors in customer satisfaction. Research in the classical e-commerce environment has shown that superior quality of goods and services always leads to more satisfied and loyal customers.

2.2. Brand trust

According to Khodadad Hosseini and Behboudi[17], trust only occurs when one party believes in the reliability and honesty of an exchange partner. It is the desire to rely on a trusted exchange partner. Brand attributes point to an effective response to a brand or a tendency to adapt in either a beneficial or undesirable manner in order to select services with a positive image that are unique and help the customer make a better decision. A strong brand image makes customers trust product quality and facilitates their choice when buying their product[17]. A reliable brand puts its focus on understanding the customer's needs first and then on a specific service or product. Brand trust goes beyond customer satisfaction with the product's practical efficiency and its characteristics. Brand trust is described as the regular consumer's intention to rely on the brand's ability to perform its specified function. The establishment of consumer brand trust on the internet seems to be extremely important in an online world, particularly in terms of highly unpredictable markets with less differentiated products. Privacy and security concerns related to e-brands, particularly unknown ones, have made the online audience wary of e-commerce or marketing websites. Online brands must incorporate other dimensions to meet this challenge, such as familiarity and security, while building brand trust[18]. Jung and Kim proposed brand trust as a primary outcome that stems from the positive attitude of customers towards the online brand environment[19]. If the experience of customers is satisfactory, it will increase trust between them. Customers can engage with online platforms that provide accurate, correct, and relevant information and enhance their trust in the brand. Brand trust is important for engagement and devotion, which is consequently connected to customer loyalty and positive word-of-mouth activity on social media channels[20]. Brand trust and brand impact, which are precise effects of risk aversion and direct qualifications of brand loyalty, are the factors that manage to make risk-averse customers further loyal[21]. One of the key goals of building brand trust is to gain a competitive edge and thereby increase the efficiency of a company. A general consensus has been

reached by many researchers that brand trust is built through a combination of familiarity, protection, privacy, word-of-mouth, brand picture, and advertisement[22]. A person must be vulnerable to some extent in order for brand trust to become operational, and consequently, their decision's results must be unpredictable and significant to them. In this case, in order to avoid the inherent risk of a specific product, the consumer is more driven to look for a trusted company brand as a defining factor in their buying decision[23]. Brand image can increase brand trust levels and trigger brand impact, which in turn increases the level of brand loyalty[24]. Similarly, a number of researchers have performed simulations[25–35]. In order to maximize the significant economic benefits offered by brand equity as an interactive, market-based resource, businesses need to create brand trust[36]. Good brand performance may be the result of higher consumer loyalty. In turn, this loyalty can be measured by the trust, confidence, and faith of consumers in the brand and by the brand's feelings or effects[37].

2.3. Service quality dimensions

Many studies have identified multiple dimensions of service quality for e-commerce and online shopping. It was found that service quality dimensions for online shopping have been analyzed using factor analysis and regression analysis. It has utilized accessibility, efficiency, usability, reliability, responsibility, privacy, and interactivity as service quality dimensions[38]. Similarly, customer service, efficiency, and privacy were identified as the main components of service quality in the context of online shopping[39]. Other service quality dimensions in online shopping were found, such as convenience, efficiency, product quality, web design, delivery, reliability, responsiveness, compensation, fulfillment, contact, price advantage, system availability, and privacy[40]. However, service quality for e-commerce includes personalization, ease of use, assurance, website design, and responsiveness[41]. However, it was found that gap models such as SERVPERF were used to measure performance, whereas SERVQUAL was used to measure service quality[42]. The SERVQUAL model basically comprises five different elements that include empathy, assurance, reliability, responsiveness, and tangibility[43]. There are 22 sets of items to calculate the customer's perceptions of the services, and the remaining 22 items to calculate the customer's expectations[42]. Some perceptions and expectations were also reported in the SERVQUAL model. Also, for the service quality that is to be measured, sometimes it is also considered that the expectations of usage do not satisfy the demand[44]. Whereas, service quality was also suggested to constitute the customer's satisfaction while dealing with the customer's experiences based on the services[45]. However, while studying the elements of the SERVQUAL model, out of these five, they are all somehow related to customer satisfaction to a certain level, showing that they are precursors to customer satisfaction[46].

In addition to these service quality dimensions, the impact of service quality on providing a better customer experience is also important. For instance, the relationship between service quality and customer satisfaction, trust, and loyalty was also highlighted by many researchers[47,48]. Customer loyalty can be categorized into two parts: first, repeat purchases; and second, further recommendation and promotion of experienced services to others[49]. On the other hand, if customers were not satisfied with service quality, complaining behavior and price sensitivity would prevail, eventually increasing customer disloyalty toward the company[50]. However, the influence of service quality on purchase intentions and customer satisfaction was also articulated in the literature[51]. It is generally accepted that there are certain gaps that need to be filled between customers and markets. These elements or items are thought to be very important in bringing about standardization. Similarly, some of these five elements are also those that have a positive influence on customers' preferences or experiences, which include tangibles, empathy, and assurance[52]. Also, it was mentioned that two elements that consist of reliability and assurance also

play a positive role in the customer's service relationships[53]. In contrast, some of the research also says that the customer's satisfaction only needs loyalty to meet its expectations[54].

H1: Tangibility (Ta) has a positive significant influence on customer satisfaction (CS).
H2: Reliability (Rl) has a positive significant influence on customer satisfaction (CS).
H3: Responsiveness (RS) has a positive significant influence on customer satisfaction (CS).
H4: Assurance (AS) has a positive significant influence on customer satisfaction (CS).
H5: Empathy (EP) has a positive significant influence on customer satisfaction (CS).
H6: Brand trust (BT) mediates the relationship between tangibility and customer satisfaction (CS).
H7: Brand trust (BT) mediates the relationship between reliability and customer satisfaction (CS).
H8: Brand trust (BT) mediates the relationship between responsiveness and customer satisfaction (CS).
H9: Brand trust (BT) mediates the relationship between assurance and customer satisfaction (CS).
H10: Brand trust (BT) mediates the relationship between empathy and customer satisfaction (CS).

3. Methodology

This section describes the tools, scales, and sampling methods used in this study. This study uses a convenient sampling method, and the participants were customers of e-shops residing in Islamabad. As shown in **Figure 1**, the model consists of five independent, one mediating and one dependable variable. This study uses quantitative methods to test the proposed hypothesis, and the data is collected through the survey method. This study uses pre-defined structured scales to measure perceived service quality and brand trust. And the questionnaire consists of 40 items and is divided into four parts. The 11 questions of the questionnaire labeled "First Part" are related to the democratic information of respondents. The second part of the questionnaire consists of a 22-item scale adopted from the SERFERF model[55]. The items in the SEPERF model are modified to suit the targeted area. Items of service quality variables, defined as responsiveness, assurance, reliability, empathy, and tangibility, are included in the question. The third part consists of three items adopted from Oliver et al.[56] to measure the satisfaction level of customers. The fourth part consists of four items of brand trust adopted from Chaudhuri and Holbrook[37]. This study uses a six-point Likert scale, ranging from one to strongly disagree, while six equals "strongly disagree", for measurement other than demographics. One represents the statement "strongly disagree".
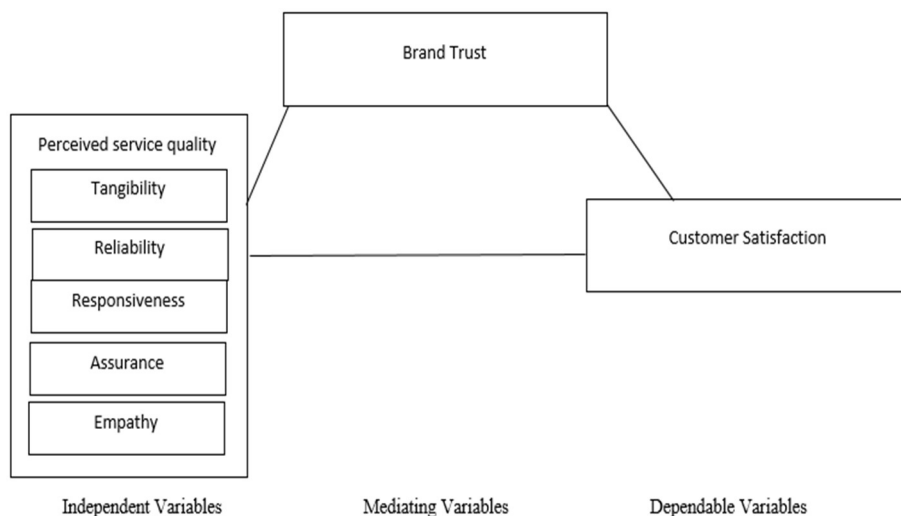

Figure 1. Theoretical framework.

3.1. Results and discussion

The data was collected from December 2020 to February 2021; out of 330 consumers intercepted, 240 responses were received, which makes the response rate around 72%. One hundred and ten responses were filled out online using a Google Form, and 130 were collected on a physical paper form. Eleven responses were deleted due to missing data. The majority of the 229 respondents (86.6%) are between the ages of 21 and 30. Male (50.9%) respondents slightly exceeded the number of female respondents (49.1%). The survey contains more singles (75.5%) than married respondents (24.5%). The qualification of the majority of respondents was bachelor (43.3%). Statistical packages SPSS and AMOS were used to analyze the data and produce results.

3.2. Reliability analysis

The Cronbach's alpha values of modified SERVPERF instruments are given in **Table 1**. As shown, the coefficients of all scales used in this study are above 0.6, which is the minimum acceptance level for the reliability of the questioner[57]. Results indicated that the modified scales and items are reliable to measure PSQ, BT, and CS.

Table 1. Correlation of variables (Ta = tangibility, RI = reliability, Rs = responsiveness, As = assurance, EP = empathy, BT = brand trust, CS = customer satisfaction).

		Ta	**RI**	**As**	**Rs**	**EP**	**CS**	**BT**
Ta	Pearson correlation	1						
RI	Pearson correlation	0.536^{**}	1					
As	Pearson correlation	0.361^{**}	0.269^{**}	1				
Rs	Pearson correlation	0.263^{**}	0.330^{**}	0.210^{**}	1			
EP	Pearson correlation	0.398^{**}	0.387^{**}	0.394^{**}	0.420^{**}	1		
CS	Pearson correlation	0.514^{**}	0.511^{**}	0.384^{**}	0.179^{**}	0.263^{**}	1	
BT	Pearson correlation	0.570^{**}	0.532^{**}	0.534^{**}	0.193^{**}	0.306^{**}	0.719^{**}	1

**: Correlation is significant at the 0.01 level (1-tailed).

3.3. Correlation analysis

A correlation test is performed to confirm that a significant relationship exists between the variables involved in this study. Bivariant correlation analysis is a statistical method that can determine the strength of the relationship between two variables. The analysis values ranging from −1 to +1 represent the negative or positive relationship between variables. The results of the correlation are shown in **Table 2**. The results show a strong and significant relationship exists between independent, dependent, and mediating variables.

Table 2. Cronchback alpha, mean, standard deviation.

Items	Mean	*Std.* deviation	Variable	Cronbach's alpha
The online store uses modern equipment (website design, App etc.)	4.61	0.997	Tangibility	0.73
Looks of the online store's website are visually appealing	4.45	0.850		
The support staff is well-mannered	5.02	1.047		
Products are easy to locate	4.82	0.718		

Table 2. (*Continued*).

Items	Mean	*Std.* deviation	Variable	Cronbach's alpha
When an e-retailer promises to do something by a certain time, it does so	4.21	1.302	Reliability	0.69
When I have a problem, the company is sympathetic, supportive, and reassuring	4.69	1.061		
Online store provides right service at all times	3.84	1.312		
Online stores provide promised products at all times	4.37	1.187		
provide accurate records of all purchases (billing, old-purchase)	4.81	0.968		
Customers are confident in the support staff's behavior	4.79	1.023	Assurance	0.772
I feel safe in your transactions with customer service staff	4.72	0.898		
Customer service staff are polite	4.84	0.854		
Customer service staff have sufficient knowledge to answer customers	5.06	1.033		
The online store tells its customers exactly when services will be performed	4.93	0.700	Responsiveness	0.745
I received prompt service from service provider support staff/employees	4.53	0.803		
Employees/support staff of online store, are always willing to help customer	5.00	1.024		
Service staff always respond to my requests promptly	4.74	0.933		
I feel like a part of the family' at my online retailer	4.57	1.051		0.9
Support staff give customers individual attention	5.05	0.988	Empathy	
The support staff's priority is to satisfy customer needs	5.04	0.999		
Customer service staff know what my needs are	5.07	0.908		
Online stores have my best interests at heart	5.05	0.990		
Online stores have operating hours convenient to all their customers	4.76	0.768		
Based on my overall experience with shopping, I am very satisfied	4.83	0.714	Customer satisfaction	0.717
The shopping experience provided by supermarkets is above my expectations	4.66	0.753		
I am happy to shop in online store	4.80	0.624		
I trust this brand from whom I am shopping online	5.07	0.797	Brand trust	0.84
I rely on this brand for shopping	5.17	0.821		
This is an honest brand	5.34	0.693		
This brand is safe	5.25	0.734		

4. Mediation analysis

The mediation analysis is performed using AMOS software. The basic methodology is to observe the direct and indirect effects and determine the role of the mediator in the relationship between independent and dependent variables[58]. In the case of tangibility, as shown in **Tables 3** and **4**, before the introduction of brand trust in the relationship, the beta value was 0.36 and significant. After the introduction of the mediator in the model, the direct relationship between tangibility and customer satisfaction becomes insignificant, and the indirect effect becomes significant. As per Berron and Kenny's

definition, full mediation has occurred. As per the findings and results, both H1 and H6 are accepted.

Table 3. Direct effect without a mediator (Ta = tangibility, CS = customer satisfaction).

Path			Estimate	S.E.	C.R.	P
CS	←	Ta	0.360	0.086	4.174	***

Table 4. Direct effect/indirect effect with a mediator (Ta = tangibility, BT = brand trust, CS = customer satisfaction).

Path			Estimate	S.E.	C.R.	*P*
BT	←	Ta	0.552	0.090	6.136	***
CS	←	BT	0.455	0.204	2.234	0.025
CS	←	Ta	0.140	0.150	0.935	0.350

In the case of empathy EP shown in **Tables 5** and **6**, the relationship between the independent and dependent variables is significant at 0.208. After the addition of mediator brand trust, the relationship between empathy and customer satisfaction becomes insignificant, while the indirect effect is significant. This shows that full mediation is also taking place in this model.

Table 5. Direct effect without a mediator (EP = empathy, CS = customer satisfaction).

Path			Estimate	S.E.	C.R.	P
CS	←	EP	0.208	0.044	4.695	***

Table 6. Direct effect/indirect effect with a mediator (EP = empathy, BT = brand trust, CS = customer satisfaction).

Path			Estimate	S.E.	C.R.	*P*
BT	←	EP	0.310	0.039	7.852	***
CS	←	BT	0.515	0.145	3.560	***
CS	←	EP	0.048	0.059	0.818	0.413

Similarly, in the case of assurance, as shown in **Tables 7** and **8**, the relationship between assurance and customer satisfaction is significant. But after the introduction of the mediator, the direct relationship decreased but still remained significant, while the indirect path was also significant. So according to Baron and Kenny's definition, if both direct and indirect paths are significant, then partial mediation is taking place.

Table 7. Direct effect without a mediator (AS = assurance, CS = customer satisfaction).

Path			Estimate	S.E.	C.R.	P
CSat	←	AS	0.339	0.059	5.786	***

Table 8. Direct effect/indirect effect with a mediator (AS = assurance, BT = brand trust, CS = customer satisfaction).

Path			Estimate	S.E.	C.R.	*P*
BT	←	AS	0.345	0.054	6.386	***
CS	←	BT	0.333	0.114	2.935	0.003
CS	←	AS	0.230	0.065	3.513	***

In the case of reliability, as shown in **Tables 9** and **10**, before the introduction of the mediator, a direct relationship is significant. But after the introduction of brand trust as the mediator, the value of the

direct relationship decreases but remains significant along with the indirect effect, which shows brand trust partially mediates the relationship between empathy and customer satisfaction.

Table 9. Direct effect without a mediator (RI = reliability, CS = customer satisfaction).

Path			Estimate	S.E.	C.R.	P
CS	←	RI	0.375	0.061	6.191	***

Table 10. Direct effect/indirect effect with a mediator (RI = reliability, BT = brand trust, CS = customer satisfaction).

Path			Estimate	S.E.	C.R.	*P*
BT	←	RI	0.119	0.043	2.759	0.006
CS	←	BT	0.291	0.086	3.381	***
CS	←	RI	0.352	0.058	6.105	***

In the case of responsiveness, the relationship between responsibility and customer satisfaction is significant. But after the introduction of the mediator, the direct relationship becomes insignificant. And hence, full mediation occurs in this relationship. The results of **Table 11** show that responsiveness is one of the major contributors to service quality with respect to customer satisfaction. However, the statistics represented in **Table 12** show that with the introduction of brand trust, the relationship between responsiveness and customer satisfaction becomes irrelevant.

Table 11. Direct effect without a mediator (RS = responsiveness, CS = customer satisfaction).

Path			Estimate	S.E.	C.R.	P
CS	←	RS	0.510	0.129	3.948	***

Table 12. Direct effect without a mediator (RS = responsiveness, BT = brand trust, CS = customer satisfaction).

Path			Estimate	S.E.	C.R.	*P*
BT	←	RS	0.942	0.168	5.603	***
CS	←	BT	0.486	0.200	2.433	0.015
CS	←	RE	0.195	0.249	0.783	0.433

5. Significance

The significance of this study is that it contributes to the existing literature related to marketing and service quality. This study explains the interrelationship between PSQ dimensions, customer satisfaction, and brand trust. The context of this study is to enable e-retailers in Pakistan to better understand their customers' needs and develop strategies valued by customers. This study suggested that brand trust has a major role to play in assessing the overall quality of service and shaping customer satisfaction levels. The descriptive analysis shows that brand trust is one of the most important elements. When a customer intends to purchase something online, he usually goes to the brand he trusts. Hence, it is suggested that online retailers in Pakistan should focus on improving their support staff's behavior training, and cultural changes may be required to increase customers' interaction. The second element is reliability. To improve reliability, e-commerce should focus on the timely delivery of items ordered. One of the biggest problems for e-retailers is the sanctity of the products ordered. Customers do not believe the e-retailer; to enhance customer trust, companies should introduce easy return policies. SLAs for delivery time could also help increase customers' reliability. Another important element of service quality is responsiveness. To improve responsiveness, e-retailers should be more reactive on social platforms. Many retailers are now

opening physical contact centers; this strategy is much more helpful to increase the responsiveness of e-retailers. The findings of this study significantly contribute to the post-COVID era. In the context of the COVID lockdown situation, the only mode of delivery was online, so e-commerce has emerged as one of the most prominent markets. With this boom, the competition has also increased. Many brands that weren't available online have opened their e-stores and enhanced their presence online. As lockdown restrictions are easing now, it's high time for e-retailers to learn from their mistakes during COVID and build customer trust to build a sustainable business model.

5.1. Practical implications

On the basis of the findings, there are multiple practical implications for this study. One of the most important implications of this research is that, in order to increase service quality, retailers should design strategies according to their customers' needs. This research provides insights into the online shopping experience in Pakistan. It also describes the perception of online shopping service quality in Pakistan. This study emphasizes that to increase customers' satisfaction, online retailers should work on their reliability and quality of products. More focus should be on responsiveness to customers' queries, providing accurate information, and being more proactive on social media platforms. Many studies have analyzed the relationship between PSQ and customer satisfaction[59–62]. The unique perspective of this study is that it defies brand trust as one of the major contributors to customer satisfaction[62]. This means online retailers should work on building trust among their customers. Retailers put emphasis on identifying safety with their brand name.

5.2. Theoretical implications of this study

This study contributes to a greater exploration of customer satisfaction with service quality in the context of the post-COVID situation. This study also explores the role of brand trust in enhancing customer satisfaction. The focus of this study wasn't only on the exploration of mediating effects; it also explored many direct relationships between PSQ dimensions, customer satisfaction, and brand trust. Despite the fact that many studies were conducted in the context of e-commerce, most of them are related to developed countries and countries where the online shopping culture is well established. Developing countries differ from developed countries on the basis of economy, customer preference, customer needs, standards, and culture. This study relates to developing counties where the first preference of customers is to buy things from physical stores, and due to the high fraud incidence and lack of adherence to ethical practices by retailers, customers have trust issues with e-retailers. This study will help generalize the instrument in different contexts and regions. It also paves the way for a new exploration of variables with context for e-retailers and theories.

5.3. Limitations

Multiple limitations exist in this research study and can pave the way for future research opportunities. First, this study is limited to the e-commerce sector of one country. Therefore, findings should be taken carefully. Future research could consider cross-country Several limitations exist in this study that suggest opportunities for future research. Firstly, this study was only conducted in the supermarket sector of one country. Therefore, attention should be paid to generalizing the results. Future research could consider multiple countries, and the comparison of results could be between the results of developing and developed countries. Data could be collected using different scales. Future research could use multiple control variables to find unique aspects. Future searches might add different variables like brand image, corporate structure, and business values to this model to get a more valuable and broader perspective on this phenomenon.

6. Conclusion

Businesses, especially those in developing nations, must comprehend the dynamics of customer happiness, service quality, and brand trust in the age of the COVID-19 epidemic and the rapid expansion of e-commerce. In the context of Pakistani online shopping, this study has shed light on the complex link between consumer satisfaction and service quality aspects. The results of the study highlight the need for online merchants to excel in tangibility, dependability, assurance, responsiveness, and empathy, in addition to offering a large selection of items. Nonetheless, the study highlights the importance of brand trust as one of the most important lessons. Beyond transactional engagements, brands must concentrate on fostering client trust. This research contributes to the pool of knowledge on e-commerce, service excellence, and customer happiness by examining a particular setting in a developing nation. Businesses are encouraged to review their plans, give customer service a priority, and adjust to the changing market. Companies that prioritize trust, quality, and customer pleasure will be better positioned to prosper in this cutthroat market as the digital marketplace grows.

Author contributions

Conceptualization, MI and AT; methodology, HBUH; validation, AK, MDB and AT; formal analysis, MI; writing—original draft, MI, BH and MDB. All authors have read and agreed to the published version of the manuscript.

Conflict of interest

The authors declare no conflict of interest.

References

1. Chattha MN, Naqi A, Haroon A. The impact of perceived quality, value and loyalty on the customer retention in the telecommunications sector of Pakistan. *International Journal of Online Marketing Research* 2016; 2(2): 25–31. doi: 10.5455/IJOMR.2016253153
2. Ladhari R, Morales M. Perceived service quality, perceived value and recommendation: A study among Canadian public library users. *Library Management* 2008; 29(4/5): 352–366. doi: 10.1108/01435120810869129
3. Marco I, Cristina Z. Expanding the lens on the customer experience-loyalty link: The role of satisfaction and shopping enjoyment. In: Proceedings of the Colloquium on European Research in Retailing (CERR) 2018; 11–13 July 2018; Guildford, England. pp. 206–210.
4. Shafi M, Liu J, Ren W. Impact of COVID-19 pandemic on micro, small, and medium-sized Enterprises operating in Pakistan. *Research in Globalization* 2020; 2: 100018. doi: 10.1016/j.resglo.2020.100018
5. Lin HF. The impact of website quality dimensions on customer satisfaction in the B2C e-commerce context. *Total Quality Management & Business Excellence* 2007; 18(4): 363–378. doi: 10.1080/14783360701231302
6. Nadube PM, Ngbaawii WL. Knowledge management and customer satisfaction of deposit money deposit money banks in rivers state. *International Journal of Innovations in Marketing and Business Studies* 2020; 7(1): 40–53.
7. Chandrashekaran M, Rotte K, Tax SS, Grewal R. Satisfaction strength and customer loyalty. *Journal of Marketing Research* 2007; 44(1): 153–163. doi: 10.1509/jmkr.44.1.153
8. Veloutsou C. Brand evaluation, satisfaction and trust as predictors of brand loyalty: The mediator-moderator effect of brand relationships. *Journal of Consumer Marketing* 2015; 32(6): 405–421. doi: 10.1108/JCM-02-2014-0878
9. Marquardt AJ. Relationship quality as a resource to build industrial brand equity when products are uncertain and future-based. *Industrial Marketing Management* 2013; 42(8): 1386–1397. doi: 10.1016/j.indmarman.2013.07.017
10. Susanto AH. The influence of customer purchase decision on customer satisfaction and it's impact to customer loyalty. *Jurnal EMBA: Jurnal Riset Ekonomi, Manajemen, Bisnis Dan Akuntansi* 2013; 1(4): 1659–1666. doi: 10.35794/emba.v1i4.3345

11. Oliver RL. A cognitive model of the antecedents and consequences of satisfaction decisions. *Journal of Marketing Research* 1980; 17(4): 460–469. doi: 10.1177/002224378001700405

12. Kotler PT, Keller KL. *Marketing Management*, 14th ed. Prentice Hall; 2011. 816p.

13. Nguyen N, Leblanc G. Corporate image and corporate reputation in customers' retention decisions in services. *Journal of Retailing and Consumer Services* 2001; 8(4): 227–236. doi: 10.1016/S0969-6989(00)00029-1

14. Lam J, Lee M. A model of Internet consumer satisfaction: Focusing on the web-site design. *AMCIS Proceedings* 1999; 182: 526–528.

15. Sung YT, Yang JM, Lee HY. The effects of mobile-computer-supported collaborative learning: Meta-analysis and critical synthesis. *Review of Educational Research* 2017; 87(4): 768–805. doi: 10.3102/0034654317704307

16. Collier JE, Bienstock CC. Measuring service quality in e-retailing. *Journal of Service Research* 2006; 8(3): 260–275. doi: 10.1177/1094670505278867

17. Khodadad Hosseini SH, Behboudi L. Brand trust and image: Effects on customer satisfaction. *International Journal of Health Care Quality Assurance* 2017; 30(7): 580–590. doi: 10.1108/IJHCQA-04-2016-0054

18. Ha HY, Perks H. Effects of consumer perceptions of brand experience on the web: Brand familiarity, satisfaction and brand trust. *Journal of Consumer Behaviour* 2005; 4(6): 438–452. doi: 10.1002/cb.29

19. Jung NY, Kim S, Kim S. Influence of consumer attitude toward online brand community on revisit intention and brand trust. *Journal of Retailing and Consumer Services* 2014; 21(4): 581–589. doi: 10.1016/j.jretconser.2014.04.002

20. Jain NK, Kamboj S, Kumar V, Rahman Z. Examining consumer-brand relationships on social media platforms. *Marketing Intelligence & Planning* 2018; 36(1): 63–78. doi: 10.1108/MIP-05-2017-0088

21. Matzler K, Grabner-Kräuter S, Bidmon S. Risk aversion and brand loyalty: The mediating role of brand trust and brand affect. *Journal of Product & Brand Management* 2008; 17(3): 154–162. doi: 10.1108/10610420810875070

22. Ha H. Factors influencing consumer perceptions of brand trust online. *Journal of Product & Brand Management* 2004; 13(5): 329–342. doi: 10.1108/10610420410554412

23. Delgado-Ballester E, Luis Munuera-Alemán J. Brand trust in the context of consumer loyalty. *European Journal of Marketing* 2001; 35(11/12): 1238–1258. doi: 10.1108/EUM0000000006475

24. Sung Y, Kim J. Effects of brand personality on brand trust and brand affect. *Psychology & Marketing* 2010; 27: 639–661. doi: 10.1002/mar.20349

25. Akram W, Mahmood K, Li X, et al. An energy-efficient and secure identity based RFID authentication scheme for vehicular cloud computing. *Computer Networks* 2022; 217: 109335. doi: 10.1016/j.comnet.2022.109335

26. Mahmood K, Ferzund J, Saleem MA, et al. A provably secure mobile user authentication scheme for big data collection in IoT-enabled maritime intelligent transportation system. *IEEE Transactions on Intelligent Transportation Systems* 2023; 24(2): 2411–2421. doi: 10.1109/TITS.2022.3177692

27. Shamshad S, Ayub MF, Mahmood K, et al. An identity-based authentication protocol for the telecare medical information system (TMIS) using a physically unclonable function. *IEEE Systems Journal* 2022; 16(3): 4831–4838. doi: 10.1109/JSYST.2021.3118014

28. Shafiq A, Altaf I, Mahmood K, et al. An ECC based remote user authentication protocol. *Journal of Internet Technology* 2020; 21(1): 285–294. doi: 10.3966/160792642020012101024

29. Javed SH, Ahmad MB, Asif M, et al. APT adversarial defence mechanism for industrial IoT enabled cyber-physical system. *IEEE Access* 2023; 11: 74000–74020. doi: 10.1109/ACCESS.2023.3291599

30. Ali W, Khan A, Akram W. Analyzing the deployment and performance of multi-CDNs in Pakistan. *Pakistan Journal of Engineering and Technology* 2021; 4(1): 169–174. doi: 10.51846/vol4iss1pp169-174

31. Kayani SN, Nawaz S, Haq HBU, et al. SmartBin: An approach to smart living community using IoT techniques and tools. *Pakistan Journal of Engineering and Technology* 2022; 5(4): 44–51. doi: 10.51846/vol5iss4pp44-51

32. Haq HBU, Abbas A, Khan RA, et al. E-healthcare using block Chain technology and cryptographic techniques: A review. *Pakistan Journal of Engineering and Technology* 2022; 5(4): 21–28. doi: 10.51846/vol5iss4pp21-28

33. Badar HMS, Mahmood K, Akram W, et al. Secure authentication protocol for home area network in smart grid-based smart cities. *Computers and Electrical Engineering* 2023; 108: 108721. doi: 10.1016/j.compeleceng.2023.108721

34. Mahmood K, Akram W, Shafiq A, et al. An enhanced and provably secure multi-factor authentication scheme for Internet-of-Multimedia-Things environments. *Computers & Electrical Engineering* 2020; 88: 106888. doi: 10.1016/j.compeleceng.2020.106888

35. Haq HBU, Asif M, Ahmad MB, et al. An effective video summarization framework based on the object of interest using deep learning. *Mathematical Problems in Engineering* 2022; 2022: 7453744. doi: 10.1155/2022/7453744

36. Delgado-Ballester E, Luis Munuera-Alemán J. Does brand trust matter to brand equity? *Journal of Product & Brand Management* 2005; 14(3): 187–196. doi: 10.1108/10610420510601058

37. Chaudhuri A, Holbrook MB. The chain of effects from brand trust and brand affect to brand performance: The role of brand loyalty. *Journal of Marketing* 2001; 65(2): 81–93. doi: 10.1509/jmkg.65.2.81.18255

38. Huang Z, Luo Y, Wang D. Online customer service quality of online shopping: Evidence from Dangdang.com. *Cluster Computing* 2019; 22: 15285–15293. doi: 10.1007/s10586-018-2565-5

39. Al-dweeri RM, Obeidat ZM, Al-dwiry MA, et al. The impact of e-service quality and e-loyalty on online shopping: Moderating effect of e-satisfaction and e-trust. *International Journal of Marketing Studies* 2017; 9(2): 92–103. doi: 10.5539/ijms.v9n2p92

40. Kandulapati S, Shekhar Bellamkonda R. E-service quality: A study of online shoppers in India. *American Journal of Business* 2014; 29(2): 178–188. doi: 10.1108/AJB-05-2013-0030

41. Kassim N, Asiah Abdullah N. The effect of perceived service quality dimensions on customer satisfaction, trust, and loyalty in e-commerce settings: A cross cultural analysis. *Asia Pacific Journal of Marketing and Logistics* 2010; 22(3): 351–371. doi: 10.1108/13555851011062269

42. Parasuraman A, Zeithaml VA, Berry LL. SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *Journal of Retailing* 1988; 64(1): 12–40.

43. Cronin JJ, Taylor SA. Measuring service quality: A reexamination and extension. *Journal of Marketing* 1992; 56(3): 55–68. doi: 10.1177/002224299205600304

44. Babakus E, Mangold WG. Adapting the SERVQUAL scale to hospital services: An empirical investigation. *Health Services Research* 1992; 26(6): 767–786.

45. Buttle F. SERVQUAL: Review, critique, research agenda. *European Journal of Marketing* 1996; 30(1): 8–32. doi: 10.1108/03090569610105762

46. Zaim H, Bayyurt N, Zaim S. Service quality and determinants of customer satisfaction in hospitals: Turkish Experience. *International Business & Economics Research Journal (IBER)* 2010; 9(5). doi: 10.19030/iber.v9i5.8145

47. Hsu CL, Chang KC, Chen MC. The impact of website quality on customer satisfaction and purchase intention: Perceived playfulness and perceived flow as mediators. *Information Systems and E-Business Management* 2012; 10: 549–570. doi: 10.1007/s10257-011-0181-5

48. Carlson J, O'Cass A. Exploring the relationships between e-service quality, satisfaction, attitudes and behaviours in content-driven e-service web sites. *Journal of Services Marketing* 2010; 24(2): 112–127. doi: 10.1108/08876041011031091

49. Kyle GT, Theodorakis ND, Karageorgiou A, Lafazani M. The effect of service quality on customer loyalty within the context of ski resorts. *Journal of Park and Recreation Administration* 2010; 28(1): 1–15.

50. Singh J. Understanding the structure of consumer satisfaction evaluation of services delivery. *Journal of the Academy of Marketing Science* 1991; 19: 223–244. doi: 10.1007/BF02726498

51. Aladwani AM. An empirical test of the link between web site quality and forward enterprise integration with web consumers. *Business Process Management Journal* 2006; 12(2): 178–190. doi: 10.1108/14637150610657521

52. Siddiqi KO. Interrelations between service quality attributes, customer satisfaction and customer loyalty in the retail banking sector in Bangladesh. *International Journal of Business and Management* 2011; 6(3): 12–36.

53. Ren Y, Lam D. An investigation into the link between service quality dimensionality and positive word-of-mouth intention in Mainland China. *Journal of Marketing Communications* 2016; 22(5): 513–523. doi: 10.1080/13527266.2014.935740

54. Kasiri LA, Cheng KTG, Sambasivan M, Sidin SM. Integration of standardization and customization: Impact on service quality, customer satisfaction, and loyalty. *Journal of Retailing and Consumer Services* 2017; 35: 91–97. doi: 10.1016/j.jretconser.2016.11.007

55. Taylor SA, Joseph Cronin JJ. An empirical assessment of the servperf scale. *Journal of Marketing Theory and Practice* 1994; 2(4): 52–69. doi: 10.1080/10696679.1994.11501669

56. Oliver RL, Rust RT, Varki S. Customer delight: Foundations, findings, and managerial insight. *Journal of Retailing* 1997; 73(3): 311–336. doi: 10.1016/S0022-4359(97)90021-X

57. Hair JF, Sarstedt M, Pieper TM, Ringle CM. The use of partial least squares structural equation modeling in strategic management research: A review of past practices and recommendations for future applications. *Long Range Planning* 2012; 45(5–6): 320–340. doi: 10.1016/j.lrp.2012.09.008

58. Baron RM, Kenny DA. The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology* 1986; 51(6): 1173–1182. doi: 10.1037/0022-3514.51.6.1173

59. Arokiasamy ARA, Abdullah AGK. Service quality and customer satisfaction in the cellular telecommunication service provider in Malaysia. *International Refereed Research Journal* 2013; 4(2): 1–9.

60. Negi R. User's perceived service quality of mobile communications: Experience from Ethiopia. *International Journal of Quality & Reliability Management* 2009; 26(7): 699–711. doi: 10.1108/02656710910975769

61. Nasser M, Ahmed H, Dileep KM, Salniza Binti SM. Factors affecting customer satisfaction of mobile services in Yemen. *American Journal of Economics* 2012; 2(2): 81–106.
62. Slack N, Singh G, Sharma S. The effect of supermarket service quality dimensions and customer satisfaction on customer loyalty and disloyalty dimensions. *International Journal of Quality and Service Sciences* 2020; 12(3): 297–318. doi: 10.1108/ijqss-10-2019-0114