The Mediating Role of Network Service for Customer Satisfaction during COVID-19 Online Classes: Evidence from University Students

Naveed Akhtar Qureshi[1†] and Raheela Haque [2††],
naveed@iba-suk.edu.pk   raheela@iba-suk.edu.pk
Sukkur IBA University, Sukkur IBA University, Pakistan;

Abstract
Aim of this study to examine the mediating role of network service between perceived quality, retailer service and customer satisfaction during COVID-19. Primary data gathered through adopted questionnaire from previous studies and 200 university students were asked to fill online questionnaire during COVID-19 situation in country. Structural Equation Modelling technique applied in order to test the proposed hypothesis generated from existing literature review. Findings revealed full mediation effect of network service for both perceived quality and retailer service on customer satisfaction during COVID-19. New insights of this study are key role of network services is identified and university students' satisfaction is measured for online classes in developing country, Pakistan. In future serial mediation is suggested for validity of existing results in developed and developing countries.
Keywords:
Perceived quality, Retailer service, Network service, Customer satisfaction during COVID-19.

1. Introduction

Service failure can be said if, the provided services do not meet with the customer's expectations and in this regard, companies used to apply recovery strategies in particular situation such as COVID-19 [1]. The service marketing literature has key aims to fill the gap between successful recovery of failed service and to have maximum market share in future [2]. Moreover, past researchers have explored the various phases of failure service recovery including recovery expectation, recovery evaluation and post-recovery behaviour so on [3,4]. There are two types of service failure has been indicated such as technical problem and websites [5,6]. Furthermore, other researcher scholars two main recovery strategies have been suggested including compensation and apology [7,8].

The COVID-19 situation badly impacted and created the challenging circumstances for many businesses such as education [9], airlines [10] and fashion industry [11]. Many research studies have been conducted on media outlets that seriously influence on consumer buying behaviour and customer satisfaction so on and have a negative impact on daily life especially in context of digital forces.

There main objectives of this study motivate to fill gap in the field of knowledge. First, many services businesses failure in COVID-19 has been identified in past studies. However, based on limited knowledge of authors the telecommunication sector has not studied in Pakistan in context of COVID-19. Second, in previous studies researcher have considered all general respondents with various age and gender basses' for concluding their results. This study limited to university students only in order to confirm their customer satisfaction during online classes particular in situation of COVID-19. Third mediating role network service would be new contribution in the existing literature mainly from developing country, Pakistan.

Rest of paper as follows. Section 2, explained the related studies and hypothesis development arguments. Section 3, elaborate the methodology. Section 4 discussed the findings. Lastly, Section 5 described discussion and concluding remarks.

2. Related Studies and Hypothesis Development Arguments

2.1 Perceived Quality

The perceived quality can be defined as the customer's judgement for a particular good or service [12]. The perceived quality needs to be consistent and this consistency will have impact on customer satisfaction [13]. The consumer usually analysis the both tangible product and intangible services. However, no doubt the today's consumer more relies on services provided by that brand and based on those services they conclude their satisfaction [14]. Furthermore, the service-oriented firms face the more complex process and after sales services becomes key factors for perceiving the quality of service and leads to customer satisfaction [15]. Therefore, the technical services play an important role for both buyer's decision-making process and finally customer satisfaction. Based on the above literature review following alternative hypothesis has been suggested.

H1a: Perceived quality relate to customer satisfaction during COVID-19.

2.2   Retailer Service

Retail stores services help the fulfil the customers' needs whenever they face the serious problems [16]. These retailers play vital role in terms of main product and value-added services in order to have customer satisfaction in long run particularly for specific situation such as COVID-19 [17]. The outcomes of this effective retailer services are greater level of customer retention, more market shares and better profits [18]. Past studies also revealed that the retailer service has positive impact on customer satisfaction [19,20,21]. Particularly, the service sector's customer satisfaction depends on effective retailer services and play an important role for problem solving [22]. Based on the above literature review following alternative hypothesis has been developed.

H2a: Retailer service relate to customer satisfaction during COVID-19.

2.3   Mediating Role of Network Service

Quality of network service significant impact on customer satisfaction. Furthermore, this study revealed that the level of satisfaction of customer differs among demographic groups such as age, education and income level so on [23]. In addition, the telecom market, it is important for a company to regularly observer customer requirement and needs in term of quality of network service. The telecom service provider, who need to attract the new or dissatisfy customer of competitors must develop strategies that include the enchantment of quality of network to be differentiated from another service provider [24]. Service reliability (quality of service) directly influences the customer loyalty that is connected with the satisfaction of the customer. satisfaction by developing and implying the strategy that increases service reliability, affective commitment in terms of quality of service [25].

Quality of the network, customer support and structure of price are the base of quality of service that influences the satisfaction of the customer [26]. The telecommunication service provider must create such strategies concerning network quality such as voice clarity and good network coverage must keep under consideration before developing any strategies [27]. Network service quality plays an important role in achieving customer satisfaction and there can be a chance that the customer is happy and satisfied with one company and vice versa [28]. Based on the above literature review following alternative hypothesis has been recommended.

H1b: Network service mediate relationship between perceived quality and customer satisfaction during COVID-19.

H2b: Network service mediates relationship between retailer service and customer satisfaction during COVID-19.

3.   Methodology

3.1 Procedure

Primary data collected with adopted self-administered questionnaire from past studies. First hand data gathered via online google from March 2021 to May 2021 (two months). University students were targeted from major cities of Sindh, Pakistan including Sukkur, Hyderabad and Karachi. Data collected from 200 respondents. According to thumb of rule items x 10 so, 15*10=150. However, in order to have more accurate results data gathered from 200 university students. This study limited to convenience sampling strategy and cross-sectional method. Due to, it was difficult to approach university students during the pandemic situation in country and universities were conducting online classes.

3.2 Measures

The network service taken from previous study carried by [29]. From this study 4 research items were taken. Network service research items are (e.g, "The Signal is Strong Even Inside the Buildings Including Basement., All Part of the City including Suburbs is reasonably Covered by this Mobile phone company., The signal is strong in all the cities covered by this Mobile Phone company., It is usually easy to get through while making or receiving calls"). Five likert scale were used strongly disagree to strongly agree.

The retailer service taken from previous study carried by [29]. From this study 3 research items were taken. Retailer service research items are (e.g, "The retailer had knowledge of the tariffs and plans to the cellular service., The retailer was courteous and dealt with me in a friendly manner, the retailer was extremely helpful in guiding me on using the cell phone"). Five likert scale were used strongly disagree to strongly agree.

The perceived quality taken from previous study carried by [30]. From this study 4 research items were taken. Perceived quality research items are (e.g, "Compared with other networks, the value of the services of this my network is good., I positively rate the services of my network., Taking into account the quality of the services I have received as

well as what I have done to obtain them, my rating of my network is good., The information obtained previously complies with my network."). Five likert scale were used strongly disagree to strongly agree.

The customer satisfaction during COVID-19 taken from previous study carried by [31]. From this study 4 research items were taken. customer satisfaction during COVID-19 research items are (e.g, "I'm satisfied with the service quality of my mobile operator during COVID-19., The product of mobile operator that I purchase possess high quality of network during COVID-19., My mobile operator informs me of new and improved packages during COVID-19., I would recommend my mobile operator to others during COVID-19"). Five likert scale were used strongly disagree to strongly agree.

4. Findings

4.1 Questionnaire Reliability and Convergent Validly

It is very important to check the reliability and validity of pervious used questionnaire because the reliance on hypothesis testing. For present study reliability and convergent validity see Table 1. The decision criteria for both is based on three statically values including factor loading, Cronbach's alpha value and Average variance extracted (AVE). It is suggested that the factor loading and Cronbach's alpha value should be equal or greater 0.70 and average variance extracted must be equal or greater 0.50 [32]. Therefore, these values we can conclude that the present study data reliability and convergent validity of pervious adopted research instrument.

4.2 Hypothesis Testing

Table 2 represents the mediation effect of perceived quality verified while introducing the mediating factor network service. You can notice three are three structural equation modelling effects are shows including Total effect, (TE), Direct effect (DE) and indirect effect (ID). The TE effect confirmed positive and significant impact of perceived quality on customer satisfaction during COVID-19 with coefficient value (β=0.428) having (p-value= 0.000). Moreover, DE effect also revealed the positive and significant impact of perceived quality on customer satisfaction during COVID-19 with coefficient value (β=0.362) having (p-value= 0.000). Lastly, the IE effect with mediating factor network service showed positive and insignificant impact between perceived quality and customer satisfaction during COVID-19 with coefficient value (β=0.066) having (p-value= 0.083). Therefore, it

suggested full mediation effect and coefficient value reduced in presence of mediator from 0.428 to 0.362. Hence, developed hypothesis H1a and H1b has been supported based on these values can be seen in Table 2 and Fig 1.

Table 1. Construct Reliability and Validity

Construct	Research Items	Item loading	Cronbach 'Alpha s Value	AVE
Network service	NS1	0.734	0.770	0.60
	NS2	0.817		
	NS3	0.763		
	NS4	0.762		
Retailer service	RS1	0.763	0.776	0.60
	RS2	0.764		
	RS3	0.817		
Perceived Quality	PQ1	0.764	0.735	0.62
	PQ2	0.710		
	PQ3	0.740		
	PQ4	0.769		
Customer Satisfaction	CS1	0.774	0.812	0.64
	CS2	0.803		
	CS3	0.791		
	CS4	0.831		

Table 2. Perceived Quality Mediation Effect

Effects	Structural Equation Modelling Directions	β	P-value
TE	PQ->CS	0.428	0.000
DE	PQ>CS	0.362	0.000
IE	PQ->NS->CS	0.066	0.083

Table 3 represents the mediation effect of retail services verified while introducing the mediating factor network service. You can notice three are three structural equation modelling effects are shows including Total effect, (TE), Direct effect (DE) and indirect effect (ID). The TE effect confirmed positive and significant impact of retail services on customer satisfaction during COVID-19 with coefficient value (β=0.408) having (p-value= 0.000). Moreover, DE effect also revealed the positive and significant impact of retail services on customer satisfaction during COVID-19 with coefficient value (β=0.349) having (p-value= 0.000). Lastly, the IE effect with mediating factor network service showed positive and insignificant impact between retail services and customer satisfaction during COVID-19 with coefficient value (β=0.059) having (p-

value= 0.065). Therefore, it suggested full mediation effect and coefficient value reduced in presence of mediator from 0.408 to 0.349. Hence, developed hypothesis H2a and H2b has been supported based on these values can be seen in Table 3 and Fig 1.

Table 3. Retail Services Mediation Effect

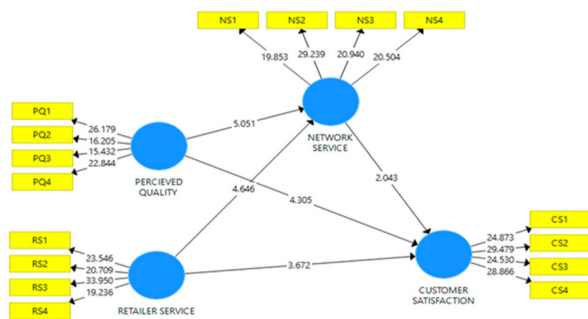| Effects	Structural Equation Modelling Directions	β	P-value
TE	RS->CS	0.408	0.000
DE	RS>CS	0.349	0.000
IE	RS->NS->CS	0.059	0.083

Fig 1. Structural Equation Modeling

5. Discussion and Concluding Remarks

The alternative hypothesis H1 and H3 are accepted and its null hypothesis are rejected. It is concluded that perceived quality has a significant influence on customer satisfaction during COVID-19 and full mediation effect network service revealed between perceived quality and customer satisfaction during COVID-19. Present study's results are aligned with [20], also confirmed perceived quality is a pool of dimension that contains a quality characteristic of any commodity that customer feels about one brand recognitions as a consumer only perceive the overall quality of specific product characterizes. Similar to this study another study conducted by [28], Cellular company shows that perceived quality is the construct of customer satisfaction.

The alternative hypothesis H2 and H4 are accepted and its null hypothesis are rejected. It is concluded that perceived quality has a significant influence on customer satisfaction during COVID-19 and full mediation effect network service revealed between perceived quality and customer satisfaction during COVID-19. Results of this

study are allied with research conducted by [33], customer satisfaction is directly related to service delivered by salesperson and store format because satisfaction is measured when a variety of discount, in-stores promotion, display of information and attitude of the salesperson is exposed to the customer. Similarly, the reputation of retailer stores as well as it will hurt the profit of the respective company or brand [21]. Lastly, the telecommunication service provider needs to create such strategies concerning network quality which includes voice readability and good network coverage should keep under consideration before creating any strategies [27].

References

[1] Hazee, S., Vaerenbergh, Y. V., & Armirotto, V. (2017). Co-creating service recovery after service failure: The role of brand equity. Journal of Business Research, 74, 101–109.

[2] Ozuem, W., Patel, A., Howell, K. E., & Lancaster, G. (2017). An exploration of customers' response to online service recovery initiatives. International Journal of Market Research, 59(1), 97–116.

[3] Roggeveen, A. L., Tsiros, M., & Grewal, D. (2012). Understanding the co-creation effect: When does collaborating with customers provide a lift to service recovery? Journal of the Academy of Marketing Science, 40(6), 771–790.

[4] Zhou, Y., Tsang, A. S. L., Huang, M., & Zhou, N. (2014). Group service recovery strategies: The moderating effects of group size and relational distance. Journal of Business Research, 67(11), 2480–2485.

[5] Forbes, L. P., Kelley, S. W., & Hoffman, K. D. (2005). Typologies of e-commerce retail failures and recovery strategies. Journal of Services Marketing, 19(5), 280–292.

[6] Holloway, B. B., & Beatty, S. E. (2003). Service failure in online retailing: A recovery opportunity. Journal of Service Research, 6(1), 92–105.

[7] Gruber, D. A., Smerek, R. E., Thomas-Hunt, M. C., & James, E. H. (2015). The real-time power of twitter: Crises management and leadership in an age of social media. Business Horizons, 58(2), 163– 172.

[8] Kietzmann, J. H., Hermkens, K., McCarthy, I. P., & Silvestre, B. S. (2011). Social media? Getserious! Understanding the functional building blocks of social media. Business Horizons, 54(3), 241–251.

[9] Brammer, S., & Clark, T. (2020). COVID-19 and management education: Reflections on challenges, opportunities, and potential futures. British Journal of Management, 33(2), 453–456.

[10] Belhadi, A., Kamble, S., Jabbour, C. J. C., Gunasekaran, A., Ndubisi, N. O., & Venkatesh, M. (2020). Manufacturing and service supply chain resilience to the COVID-19 outbreak:

Lessons learned from the automobile and airline industries. Technological Forecasting and Social Change, 163, 120447.

[11] Baek, E., & Oh, G. E. G. (2020). Diverse values of fashion rental service and contamination concern of consumers. Journal of Business Research, 123, 165–175.

[12] Zeithaml, V. A., Bitner, M. J., & Gremler, D. D. (2018). Services Marketing: Integrating Customer Focus across the Firm (7th ed.). New York (US): McGraw-Hill International Edition.

[13] Coric, D. S., & Jelic, D. (2015). Applicability of Keller's brand equity model in the B2B chemical market. Economic Research-Ekonomska Istraživanja, 28(1), 1006–1017.

[14] Ulaga, W., & Eggert, A. (2006). Value-based differentiation in business relationships: Gaining and sustaining key supplier status. Journal of Marketing, 70(1), 119–136

[15] Persson, N. (2010). An exploratory investigation of the elements of B2B brand image and its relationship to price premium. Industrial Marketing Management, 39, 1269–1277.

[16] Pan, Y., & Zinkhan, G. M. (2006). Determinants of retail patronage: a meta-analytical perspective. Journal of retailing, 82(3), 229-243.

[17] Davies, A., Brady, T., & Hobday, M. (2006). Charting a path toward integrated solutions. MIT Sloan Management Review, 47(3), 39.

[18] Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). Servqual. Journal of retailing, 64(1), 12-40.

[19] Long, M., & McMellon, C. (2004). Exploring the determinants of retail service quality on the Internet. Journal of services marketing, 18(1), 78-90.

[20] Kim, S., & Jin, B. (2002). Validating the retail service quality scale for US and Korean customers of discount stores: an exploratory study. Journal of Services Marketing, 16(3), 223-237.

[21] Siu, N. Y., & Tak-Hing Cheung, J. (2001). A measure of retail service quality. Marketing Intelligence & Planning, 19(2), 88-96.

[22] Huang, M. H. (2009). Using service quality to enhance the perceived quality of store brands. Total Quality Management, 20(2), 241-252.

[23] Salim, T. B., Haji, L. S., & Hussein, S. R. (2019). Factors Affecting Customer Satisfaction in the Internet Service Industry (Exploratory Study of Internet Service Providers in Erbil - Kurdistan Region). Polytechnic Journal, 9(1), 50-63.

[24] Strenitzerová, M., & Gana, J. (2018). Customer Satisfaction and Loyalty as a Part of Customer-Based Corporate Sustainability in the Sector of Mobile Communications Services. Sustainability 2018, 10, 1657, 1-15.

[25] Izogo, A., & Emeka, E. (2017). Customer loyalty in telecom service sector: the role of service quality and customer commitment. The TQM Journal, 29(1), 36, 1-19.

[26] Tabaa, B., & Hazem, I. S. (2016). Factors affecting customer loyalty for mobile telecommunication industry. EuroMed Journal of Business, 11(3) 1-15.

[27] Saha, N., Islam, M. R., & Hoque., A. (2016). Factors Affecting Customers' Satisfaction of Mobile Phone Subscribers: An Empirical Study on Mobile Telecommunication Industry in Bangladesh. International Journal of Business and Management, 11(6), 2-9.

[28] Anjum, U., Aftab, J., Sultan, Q., A., and Ahmed, M. (2016). Factors Affecting the Service Quality and Customer Satisfaction in Telecom Industry of Pakistan. International Journal of Management, Accounting and Economics, 3(9), 2-10.

[29] Khan, S. A., & Khattak, M., & Ali, A. (2013). Comparison of Service Performance and Customer Satisfaction in Telecom Sector. A Research Study of Mobile Communication Karak Pakistan. International Review of Basic and Applied Sciences, 1(2), 51-60.

[30] Revilla-Camachoa, M., Cossío-Silvaa, F., & Palacios-Florencio. B. (2017). Corporate Responsibility under the ECSI model: An application in the hotel sector. European Research on Management and Business Economics 23, 23–32.

[31] Nurysh, N., Naghavi, N., & Fah, B. C. Y. (2019). Study on Factors Affecting Customer Satisfaction in Mobile Telecommunication Industry in Malaysia. International Journal of Recent Technology and Engineering, 7(5S), 299-306.

[32] F. Hair Jr, J., Sarstedt, M., Hopkins, L. and G. Kuppelwieser, V. (2014), "Partial least squares structural equation modelling (PLS-SEM): An emerging tool in business research", European Business Review, 26(2), 106-121.

[33] Nagar, D. (2016). Retail Service Quality and its Effects on Consumer. Sona Global Management Review ,10(4), 1-8.

Naveed Akhtar Qureshi is currently working as an assistant professor at Department of Business Administration, Sukkur IBA University. His research interest includes Business Administration, Entrepreneurship and Management Sciences.

Raheela Haque is currently working as an assistant professor at Department of Business Administration, Sukkur IBA University. Her research interest includes Business Administration, Human Resource Management and Management Sciences.