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Research Article

Determinants of Customer Loyalty toward Mobile Wallet Services in Post-COVID-19: The Moderating Role of Trust

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One of the highly acclaimed innovations is the mobile wallet. Mobile wallets ensure that customers can make purchases even if they forget their wallets at home. The use of these wallets has increased significantly with the spread of the COVID-19 pandemic as a preventive measure. However, with COVID-19 restrictions lifted and adaptation to the pandemic, customers are no longer forced to use mobile wallets. That is, things have returned to normal as before the pandemic, where the customer is left free to choose the method of payment. In this regard, businesses need to retain their customers and make sure that those customers will reuse their own mobile wallets even during this period (post-COVID-19). Hence, it is critical to explore customer loyalty determinants toward mobile wallet services in such a period. Therefore, using the Indian context, this paper sought to explore the determinants of customer loyalty toward mobile wallet services post-COVID-19. This study also investigated the role of trust as a moderator. Based on a sample size of 243 customers in India, the relationships in the proposed model were tested using SmartPLS statistical technology. The results revealed that service quality, privacy and security, and trust are the key determinants in gaining customer loyalty toward mobile wallets. Yet, the results did not support perceived usefulness and ease of use as determinants of customer loyalty. As for trust as a moderator, the results supported only one of the four proposed hypotheses. Specifically, the results supported that "trust has a significant moderating impact on the relationship between service quality and customer loyalty". The results offer a more precise comprehension of the relationships between customer loyalty and customer loyalty determinants in post-COVID-19 and enable managers to make better management decisions.

1. Introduction

Managers often find it difficult to implement and manage efficient self-service technologies as businesses rush to introduce them [1]. Self-service technologies are found in all industries today and in many forms, including mobile wallets, where customers get the services by themselves without the help of the company's employees [2–6]. The process of paying money between buyers (customers) and merchants has changed due to mobile wallets, which have made the payment process streamlined, easy, and fast [7]. Mobile wallet technology presents many chances for merchants and customers and is considered more useful than traditional channels [8]. A mobile wallet is a way of carrying cash in digital form (Figure 1). One can connect a mobile wallet app to their credit or debit card information, or they can transmit money online to a mobile wallet. The majority of banks offer their own e-wallets, and several private businesses do as well, including Paytm, Google Pay, Airtel Money, and PhonePe [9].

FIGURE 1: Mobile wallet (adapted from Finserving [9]).

One relationship-building tactic that has drawn significant attention in service sectors worldwide is mobile wallet services [6, 10, 11]. Besides building close relationships, sustaining a loyal customer base is crucial for service firms, especially banks, as loyalty is linked with increased profitability and decreased marketing costs [12]. Customer loyalty is a competitive advantage and a profitability source for both service and industrial businesses. A customer is said to be loyal when he demonstrates fidelity and dedication by continuing to use the service [13, 14]. Customers consider the responsible behaviour of companies when making any loyalty decisions about the available mobile wallet service [15]. Interest in customer loyalty has increased with the COVID-19 pandemic, which has brought about two widely important shifts in customer behaviour. First, customers are increasingly more open to shopping online, which has caused the e-commerce business to grow quickly [16, 17]. Second, customers have increased their use of the cashless payment method, particularly mobile payment [4, 7, 17]. The pandemic played a critical part in introducing and creating familiarity with new technologies, even among people who were not previously accustomed to using digital systems, particularly mobile wallets [18]. Using mobile wallets for purchases under the COVID-19 outbreak is a cashless initiative that encourages breaking the virus's chain of transmission [19]. Indeed, the COVID-19 situation has accelerated the growth of cashless transactions, particularly by mobile wallets. According to the Razorpay report [20], digital payments have grown by 76% since July 2020. This is due to several factors, on top of which is the customers' use of the cashless payment method, specifically mobile wallets [21, 22]. Yet, it remains unclear whether customers will continue (i.e., will be loyal) to behave in this manner in the long run (i.e., post-COVID-19). Today, COVID-19 restrictions (e.g., wearing masks, maintaining social distance, and avoiding dealing with cash payments) are no longer binding. Hence, individuals have become responsible for protecting themselves and their families from this epidemic. Many of them have protected themselves by taking the available vaccine [23]. The perceived health risk may gradually decrease as vaccination rates rise. Additionally, consumers could become accustomed to the virus [17]. Very recent figures indicate that measures have now been eased, and the epidemic has turned into an endemic pandemic, and things are already recovering and returning to normal [17]. Under this change and adaptation to the pandemic, businesses need to retain their customers and ensure that those customers will reuse their mobile wallet services at the same pace as reported under COVID-19 restrictions [19, 21]. This objective could be achieved by identifying the key factors that determine or encourage customers to reuse mobile wallet services. This is to say that understanding key factors that maintain the relationship with mobile wallet applications is needed for businesses to increase the level of loyalty of clients in the market [15, 24]. Thus, it is critical to explore customer loyalty determinants toward mobile wallet services in this period (i.e., post-COVID-19). Therefore, using the Indian context, this paper is aimed at investigating the following question: *What are the determinants of customer loyalty toward mobile wallet services in post-COVID-19?*

The literature shows numerous studies on customer adoption of e-payment [2, 4, 6, 10, 25]. Yet, fewer studies discuss customer loyalty issues toward e-wallet services, especially in the COVID-19 era [21]. This paper uses the TAM model to understand the determinants of customer loyalty toward mobile wallet services. This model identifies two key factors (i.e., perceived ease of use and perceived usefulness) as determinants of attitude toward technology adoption [26]. The literature supports that attitude significantly affects the behavioural intention to adopt the technology [19, 27]. However, this does not specifically measure loyalty. In the current paper, loyalty is used as an endogenous construct, as was done by Cyr et al. [28]. On the other hand, perceived ease of use and perceived usefulness are not the only appropriate factors determining technology acceptance, i.e., TAM needs to be extended by involving other factors [29–31]. Therefore, in our context, there are other key factors that are considered for gaining a better understanding of consumers' loyalty toward mobile wallet services. These factors comprise service quality, privacy, and security, which are considered critical in customer loyalty issues [15, 32–35]. Scholars with a vision have acknowledged the critical role of services and acknowledged that the path to customer focus and success is through service quality [36]. Privacy and security are also essential evaluative criteria in any online transaction [37]. Moreover, trust, when perceived as a TAM's dimension, could have a staggering impact on the customer's desire to engage in online money exchanges [38]. Consequently, perceived usefulness and ease may not fully reflect the customers' loyalty toward mobile wallet services.

Even though the factors that lead to customer loyalty have gotten more attention, the literature [39] has not been able to explain the variables that affect customer loyalty in a consistent way. In particular, more research needs to be done to reveal moderators that can help build customer loyalty. Kumar et al. [40] said that trust can be used to predict loyalty and can moderate the relationship with loyalty. Shaikh et al. [5] said that the use of "moderators" could help researchers in the field of mobile financial services find new and interesting relationships between concepts. Besides paying little attention to trust in the field of mobile payments [41], there is hardly any research that investigates the role of trust as a moderator in the relationship between the determinants of customer loyalty (i.e., perceived ease of use, perceived usefulness, service quality, and privacy and security) and customer loyalty. In prior studies, trust was only employed either as an antecedent or as a mediator variable to influence loyalty [42–44]. To bridge this research gap, the second purpose of this study is to investigate the moderator variable (trust) that engenders customer loyalty in the mobile wallet context. Based on that, the second research question is raised: "What is the role of trust as a moderator in the relationship between the determinants of customer loyalty and customer loyalty?"

This research is organized as follows: Section 2 identifies the research background and develops its hypotheses. Section 3 demonstrates the methodology. Section 4 announces the data analysis and results. Section 5 includes the discussion and conclusion. The last two sections report the study's implications and limitations.

2. Research Background and Hypothesis Development

e-wallets are a piece of technology that has spread through and dominated the economies of both developed and developing countries at the same time [10]. e-walleting via mobile has gained more popularity in India due to the abundant possibilities for mobile purchases. According to the study of global digital payments conducted by the Blackhawk Network, which distinguished India as a prominent geographical area, the growth in digital wallets, their widespread use, and their acceptance in India were higher than in any other region surveyed. The pandemic (i.e., COVID-19) has played a significant role in this growth, where it has provided great backwinds for India's digital transformation and payment system. e-wallets did not have much appeal before the pandemic. Now, e-wallets are used by 94% of Indian respondents, and they concur that this has made online shopping simpler [45]. As mentioned prior, there are numerous e-wallets available via mobile in the Indian market, such as Paytm, PhonePe, and Google Pay. These e-wallets are characterized by lower costs, a competitive advantage, modernity, and convenience. They provide convenient ways to allow customers to perform the payment via their mobile devices anytime and from anywhere. Further, they are more widely available, as well as being accepted as a "normal" payment method [46–48]. Mobile wallets are becoming favored channels for financial transactions, especially in light of the pandemic, due to their convenience and value-added fea-

tures such as cash backs and discounts [49]. Against this background, it becomes significant to inspect the determinants of Indian customers' loyalty toward the mobile wallet in the long run (i.e., post-COVID-19).

Customer loyalty is one of the vital assets that help companies to secure future sales from their customers and promote their profitability [50]. Customer loyalty guarantees the company's income to be constantly optimal [51]. Boateng [50] defines it as the positive attitude customers exhibit toward a given product or service provider, resulting in repeat purchase behaviour. According to Hussain et al. [52], customer loyalty is considered the key to success for numerous service businesses. Thus, the companies make various efforts in order to build customer loyalty, maintain it to increase the company's financial performance, and make the company able to maintain the sustainability of its life [51].

Several factors affect customer loyalty, including customer satisfaction and service quality. For making customers loyal, most companies adhere to a good customer relationship, which implies customer satisfaction and excellent service [37, 52]. Moreover, Le [15] emphasizes the significant role of privacy and security in boosting customer loyalty. In addition, having trust is also vital to nurturing a bank-customer alliance [16, 50]. However, previous research on loyalty toward mobile wallet services is very limited in the Indian context [53], particularly in the post-Covid-19. Further, no research examines the determinants of customer loyalty toward mobile wallet services with the role of trust as a moderator. Figure 2 illustrates the determinants of customer loyalty considered towards mobile wallet services with the role of trust as a moderator. The next subsections identify the variables of the study and develop hypotheses based on the literature.

2.1. Perceived Usefulness (PU). With continuous technological advances and the Covid-19 pandemic entering the picture, people tend to adopt digital finance to purchase their needs for goods and services. Users' perception of the new technology's utility and how that affects performance are explained by its perceived usefulness [15, 26, 54]. Basically, perceived usefulness depicts the cognitive expectations of the user about the performance of the system. Hence, users believe that the use of such a system can satisfy their financial desires and lifestyle, along with increasing competence in the way they run different transactions [6]. Users are less likely to develop favorable behaviour towards a new technology if they do not see obvious benefits from utilizing it that outweigh the higher expenses and risks associated with its acquisition [55]. PU has been verified as a precedent for the intention to use and continuity in different contexts [7, 16, 56, 57]. Regarding the role of PU in enhancing customer loyalty towards the mobile wallet, studies are very limited in the Indian context. Thus, this paper assumes that

Hypothesis 1. PU significantly influences customer loyalty.

2.2. Perceived Ease of Use (PEOU). The notion that using new technology is simple or easy is known as perceived ease of use [26]. Therefore, perceived ease of use reflects how simple it is to use a website or app to make an online transaction (e.g., shopping, purchasing, or paying). Internet
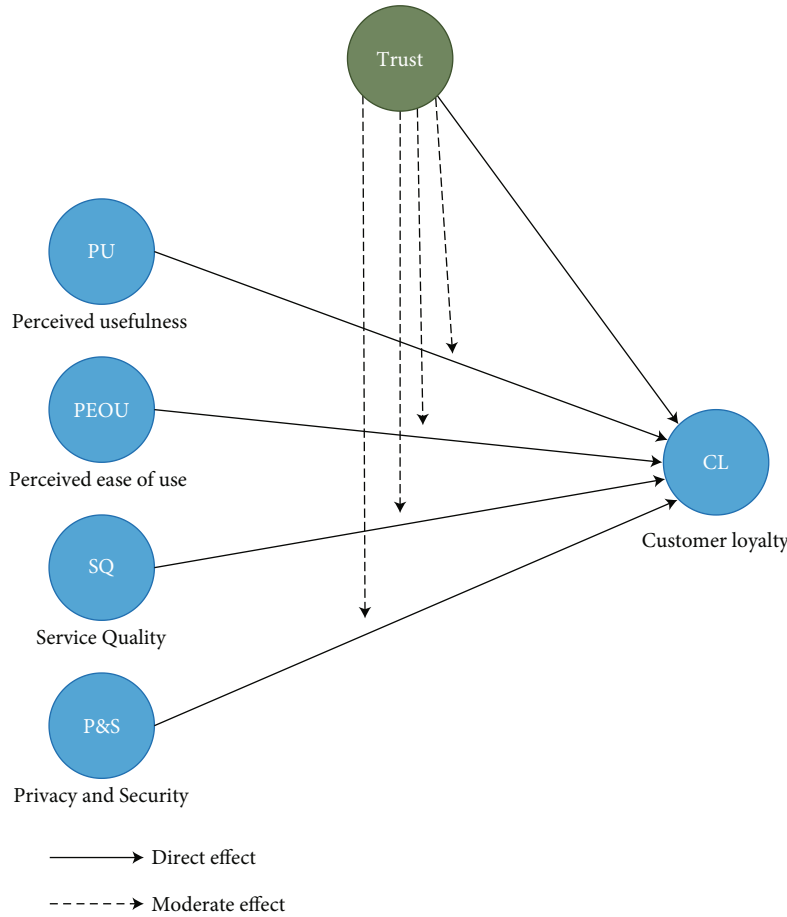
Figure 2: Research model.

technology could be tiring for some customers, and thus, one would expect the mobile wallet system to be designed to facilitate financial transactions. Most previous studies have taken "perceived ease of use", which belongs to TAM theory, into account as a vital factor impacting customer behaviour toward Internet technology, including mobile wallets [6, 7, 11, 25, 58]. Hence, customers would prefer using a mobile wallet app as a payment method because of how simple it is to use. In light of this, the next hypothesis is made.

Hypothesis 2. PEOU significantly influences customer loyalty.

2.3. Service Quality (SQ). One of the traits found to be related to customer loyalty is service quality [59]. The level of support provided by the service provider is referred to as service quality [60]. According to the IS success model, when online users feel like their needs have been well met, they use the website more often and are satisfied with it [32, 60]. Empirically, Al-Hattami et al. [61] reported that SQ plays an important role in promoting the intention to continue using Internet banking. Garepasha et al. [33] and Chikazhe et al. [62] further revealed that providing high-quality services enhances customer loyalty toward online banking services. Banks should therefore be encouraged to address issues related to service quality in order to improve customer loyalty. Chen et al. [32], Al-Debei et al. [56], and

George and Sunny [4] also referred to the role of SQ in enhancing user behaviour in the contexts of e-commerce, mobile value-added services, and mobile wallet, respectively. Likewise, in the current study context, various SQ factors such as round-the-clock service availability, quick responses, application aesthetics, and problem-solving could lead to customer loyalty toward the mobile wallet. Therefore,

Hypothesis 3. SQ significantly influences customer loyalty.

2.4. Privacy and Security (P&S). Concerns about information privacy and security are among the key challenges that e-banking faces [63]. Zeithaml et al. [64] indicate that privacy involves protecting personal information, while security involves protecting customers from financial loss and fraud. Today, a number of financial services are offered through smart devices (mobiles), so customers are paying more serious attention to privacy and security issues [65]. A mobile wallet should provide customers with privacy and security. Privacy and security services lead to customer confidence, resulting in continued mobile wallet use and loyalty [66, 67]. To date, the privacy and security of mobile wallets have received relatively little attention. Unfortunately, the public will not prefer the mobile wallet without ensuring message authentication and maintaining privacy and security [47]. Accordingly, it is proposed that

Hypothesis 4. P&S significantly influences customer loyalty.

2.5. *Trust.* Trust in business transactions is one of the most important signs of stable and cooperative relationships [42, 68]. Researchers [16, 68] have shown that trust is important for making and keeping long-term partnerships. Lin et al. [58] said that trust is an important factor and defined it as customers who believe that online financial services are reliable and honest. Empirical research has revealed that trust is the primary determinant of the tendency to use different Internet services such as mobile banking [69], Internet banking [61], Internet-only banks [70], online shopping [16], mobile payment [11], Fintech [15], and mobile wallet [25].

Here, trust is defined as a person's belief that the mobile wallet is safe and performs as intended [55]. Customers use the mobile wallet to make transfers or pay money. Like any online financial transaction, the transaction is risky unless the mobile wallet system is trustworthy. As a result, according to numerous authors [38, 59], trust is crucial for fostering customer loyalty. Therefore, the provider of this service must develop the trust context for enhancing transactions and promoting customer loyalty. That is, improving customers' trust by making financial transactions reliable is a key objective for gaining customer loyalty. Besides the impact of trust as an antecedent for loyalty, this paper argues that trust could be a moderator to enhance customer loyalty towards the mobile wallet. Therefore, it is assumed that

Hypothesis 5. Trust significantly influences customer loyalty.

Hypothesis 6. There is a significant moderation influence of trust on the relationship between PU and customer loyalty.

Hypothesis 7. There is a significant moderation influence of trust on the relationship between PEOU and customer loyalty.

Hypothesis 8. There is a significant moderation influence of trust on the relationship between SQ and customer loyalty.

Hypothesis 9. There is a significant moderation influence of trust on the relationship between P&S and customer loyalty.

3. Methodology

3.1. *Measurement and Data Collection.* This research is quantitative in nature, as a closed questionnaire was used for data collection [71]. The questionnaire employed was in the English language. The Likert five-point scale was adopted as an option to answer the questions in the questionnaire. Indicators (questions) of study variables were derived from previous literature as follows:

(i) PU (independent variable). Four indicators were adapted from Yang et al. [6], Singh and Sharma [7], and Goel et al. [21] to measure PU (e.g., convenience, accomplishing tasks, reducing the anxiety of being infected by COVID-19, and to be more beneficial than traditional payment method)

(ii) PEOU (independent variable). Four indicators were adapted from Singh et al. [48], George and Sunny [4], and Chawla and Joshi [49] to measure PEOU (e.g., usability, saving effort, being skillful at using mobile wallets, and clear and understandable interaction)

(iii) SQ (independent variable). Four indicators were adapted from Abbasi et al. [2] and Valencia and Layman [72] to measure SQ (e.g., service availability 24/7, timesaving, individual attention, and problem-solving)

(iv) P&S (independent variable). Four indicators were adapted from Le [15], Al-Hattami [61], and Yang et al. [6] to measure P&S (e.g., being secure in conducting transactions and payments, protecting privacy, and keeping customers' interests into account)

(v) Trust (moderator variable). Five indicators were adapted from Le [15], George and Sunny [4], and Chawla and Joshi [49] to measure trust (e.g., being trustworthy, good reputation, trust in doing payment process, being accepted by most stores, and overall trust)

(vi) CL (dependent variable). Four indicators were adapted from Valencia and Layman [72] and Goel et al. [21] to measure CL (e.g., choosing and preferring the mobile wallet service, obligation to use it, recommending it to others, and continuing to use it in the future)

The study adopted an online questionnaire via Google Docs. The online questionnaire is the most convenient tool for data collection, especially under the spread of diseases and epidemics such as COVID-19, where distance spacing is recommended [16, 73, 74]. The survey link was sent to respondents who use the mobile wallet in India. To get as many answers as possible in a short period, the online questionnaire was distributed through different channels such as WhatsApp and Messenger. Moreover, the survey link remained open to accept answers from the beginning of September until the end of September 2022. Accordingly, the total number of responses received was 247, of which 243 were sound. The demographic details of the final responses (i.e., 243) were as follows (Table 1): males were 58.8%, and females were 41.2%. Most of them were aged 26–35 (49%). The sample was dominated by postgraduates (51%).

3.2. *Statistical Technique.* This research applied SEM-PLS via SmartPLS 3 to test the proposed hypotheses. Lately, the SEM-PLS path has become widespread among researchers because of its variance-based relationship instead of covariance [75]. Numerous advantages of SEM-PLS lead to its widespread use in marketing and information system research ([16, 65, 76]). SEM-PLS is a convenient method for evaluating complex models that attempt to predict

Particulars	Number	%
Gender		
M	143	58.8
F	100	41.2
Age		
Below 26	41	16.9
26–35	119	49
Above 35	83	34.1
Educational level		
Bachelor	92	37.9
Postgraduate	124	51
Other	27	11.1

correlations between study variables [77]. Compared to CB-SEM, which usually handles a large sample, SEM-PLS is suitable for small and large samples. Furthermore, SEM-PLS sets no presumptions on data distributions [75, 78]. Accordingly, the current study uses SEM-PLS (via SmartPLS 3) to perform an analysis of assumed direct relationships and uses the trust variable as a moderator. This use is also driven by prior research that preferred SEM-PLS for estimating the moderator [13, 73, 79–81].

4. Data Analysis and Results

Analysis via SmartPLS 3 is operated in two stages, measurement and structural. Tables 2 and 3 and Figure 3 demonstrate the measurement stage results. These results are given in the form of "factor loadings, Cronbach Alpha (CA), Composite Reliability (CR), and Average Variance Extracted (AVE)." It is clear that one item was dropped, which is PU1 (Table 2). PU1 was dropped as its factor loading was 0.577, which is lower than the recommended cut-off value ≥ 0.60 [82]. The extracted factors were subjected to reliability analysis (i.e., CA), which convincingly exceeded the recommended cut-off score of 0.70 [78] (Table 2). CR values show how well the components of each variable represent the latent variable. The recommended cut-off score for the CR test is ≥ 0.70 [83]. As shown in Table 2, CR scores ranged between 0.818 and 0.905. Convergent and discriminant validity are two types of validity. Utilizing AVE, the convergent validity was assessed. As clarified in Table 2, AVE values ranged from 0.532 to 0.706 (Table 3), indicating the fulfillment of the AVE requirement with the proposed minimum of 0.50 [84]. The discriminant validity can be examined by $\sqrt{AVE}$, which should be greater than the cross-correlations [84]. This condition was met, as shown in Table 2 (e.g., PU: $\sqrt{0.634} = 0.796$).

Now that the measurement phase conditions were met, fit indicators related to the model along with the relationships assumed in the structural model phase can be evaluated. Yet, before doing so, the researcher should first examine multicollinearity and common method bias (CMB) issues, which are not recommended to be present in any study [78]. The most popular method for looking into

the multicollinearity problem in SEM-PLS is variance inflation factor (VIF). Generally, VIF values should not exceed 5 [78]. Table 4 demonstrates that the maximum VIF value is 2.997 (<5), indicating that multicollinearity is not a concern in this investigation. CMB can be investigated using the VIF as well. The measurement method used may cause a phenomenon known as the CMB. However, the model is regarded as CMB-free if all VIFs are lower than 3.3 [85]. In this study, all VIFs were lower than 3.3, indicating that CMB is not a concern (Table 4).

There are three common metrics to prove the model's fit: the R^2 value, standardized root mean square residual (SRMR), and Stone–Test Geisser (Q^2). The R^2 value explains the proportion of the variation in the dependent variable. According to Hair et al. [86], consumer behaviour research considers an R^2 value of >0.20 to be substantial. According to Figure 2, the research model explains 71.8% of the variance for CL, which is satisfactory. SRMR calculates the discrepancy between the matrix of implied correlations in the model and the observed correlations [83]. The SRMR rate obtained is 0.072, which is less than the maximum set by Hu and Bentler [87] by 0.080. Finally, Q^2 was calculated using the blindfolding procedure. The recommended value of Q^2 is > zero [86]. As is clear from Table 4, the Q^2 value exceeded zero. It can be inferred that a model fit for testing hypotheses is obtained based on the prior three metrics taken into account.

This paper provided evidence to support Hypothesis 3, i.e., "SQ significantly influences customer loyalty" ($\beta = 0.267$; $t = 4.357$; $p = .000$), based on the results of the bootstrapping method using 5000 subsamples. Similarly, this study provided evidence in favor of Hypothesis 4 ($\beta = 0.297$; $t = 4.916$; $p = .000$), Hypothesis 5 ($\beta = 0.348$; $t = 4.611$; $p = .000$), and Hypothesis 8 ($\beta = 0.260$; $t = 2.394$; $p = .018$). However, this research did not support Hypothesis 1 ($\beta = 0.048$; $t = 0.579$; $p = .563$), Hypothesis 2 ($\beta = 0.026$; $t = 0.597$; $p = .551$), Hypothesis 6 ($\beta = -0.127$; $t = 1.165$; $p = .244$), Hypothesis 7 ($\beta = -0.017$; $t = 0.183$; $p = .855$), and Hypothesis 9 ($\beta = -0.085$; $t = 0.838$; $p = .402$) (see Table 4 and Figures 3 and 4).

5. Discussion and Conclusion

This paper investigates the determinants of customer loyalty toward mobile wallet services with the role of trust as a moderator. To do so, the study proposed a research model with nine hypotheses. As exhibited in the prior section, Hypothesis 3, Hypothesis 4, Hypothesis 5, and Hypothesis 8 were all supported; Hypothesis 1, Hypothesis 2, Hypothesis 6, Hypothesis 7, and Hypothesis 9 were not supported. On the other hand, the research model explained 71.8% of the variation in customer loyalty.

The hypotheses were in two groups. The first group was on the direct effects on customer loyalty. The outcomes indicated that service quality, privacy and security, and trust have positive impacts on customer loyalty. Yet, contrary to expectations, perceived usefulness and ease of use did not significantly affect customer loyalty. The results show clear

TABLE 2: Reliability examination.

Variables	Acronym	PU	PEOU	SQ	P&S	Trust	CL	CA	rho_A	CR
PU	PU1	***								
	PU2	0.821						0.710	0.713	0.838
	PU3	0.748								
	PU4	0.818								
PEOU	PEOU 1		0.883							
	PEOU 2		0.804					0.861	0.871	0.905
	PEOU 3		0.798							
	PEOU 4		0.872							
SQ	SQ1			0.668						
	SQ2			0.874				0.805	0.818	0.874
	SQ3			0.836						
	SQ4			0.796						
P&S	P&S 1				0.741					
	P&S 2				0.789			0.818	0.834	0.880
	P&S 3				0.890					
	P&S 4				0.794					
Trust	Trust1					0.819				
	Trust2					0.801				
	Trust3					0.778		0.845	0.846	0.890
	Trust4					0.749				
	Trust5					0.782				
CL	CL1						0.795			
	CL2						0.609	0.710	0.740	0.818
	CL3						0.689			
	CL4						0.806			

****PU1 was dropped as it had a value < 0.60 [82].

TABLE 3: Validity examination.

Variables	PU	PEOU	SQ	P&S	Trust	CL	AVE
PU	**0.796**						0.634
PEOU	0.439	**0.840**					0.706
SQ	0.691	0.414	**0.797**				0.636
P&S	0.723	0.447	0.714	**0.805**			0.648
Trust	0.775	0.455	0.721	0.725	**0.786**		0.618
CL	0.711	0.414	0.713	0.763	0.766	**0.729**	0.532

Notes: $\sqrt{AVE}$ are presented in bold. PU = perceived usefulness, PEOU = perceived ease of use, SQ = service quality, P&S = privacy and security, and CL = customer loyalty.

evidence that service quality has a positive impact on customer loyalty toward mobile wallets (Hypothesis 3). This is not surprising, as the quality of service has proven its validity in numerous contexts, especially in the context of online systems [4, 14, 35, 61, 62]. It happens because the quality of service includes high-value services for customers such as saving time, cost, and individual attention [2, 72]. If articulated correctly, quality customer service could add great value by creating demand for services and improving customer loyalty. Thus, organizations can promote their cus-

tomers' loyalty toward mobile wallets in the long run through service quality. Moreover, privacy and security had a positive influence on customer loyalty (Hypothesis 4). This result corresponds to those reported in the literature [44, 88]. Accordingly, the privacy and security of mobile wallet services are important merits that affect customer loyalty. This result further suggests that maintaining customers' privacy and using secure modes of transactions via mobile wallet help increase customer retention in the long run (i.e., loyalty). The results also implied that trust had a positive direct influence on customer loyalty (Hypothesis 5). This result supports the previous research [33, 38, 59]. It is crucial to report that trust is the most influential predictor of customer loyalty toward mobile wallets (Std. beta = 0.348), followed by privacy and security (Std. beta = 0.297), and service quality (Std. beta = 0.267). Trust not only motivates customers to adopt or continue to use mobile wallet services [4] but also helps boost customer loyalty in the long run (i.e., post-COVID-19). Hence, mobile wallet service providers in India should pay close attention to customer trust.

Unlike prior research [4, 6, 7, 28, 48, 49, 55, 88], this study revealed that perceived usefulness has no significant influence on customer loyalty (Hypothesis 1). This unexpected result can be justified in that the usefulness of the
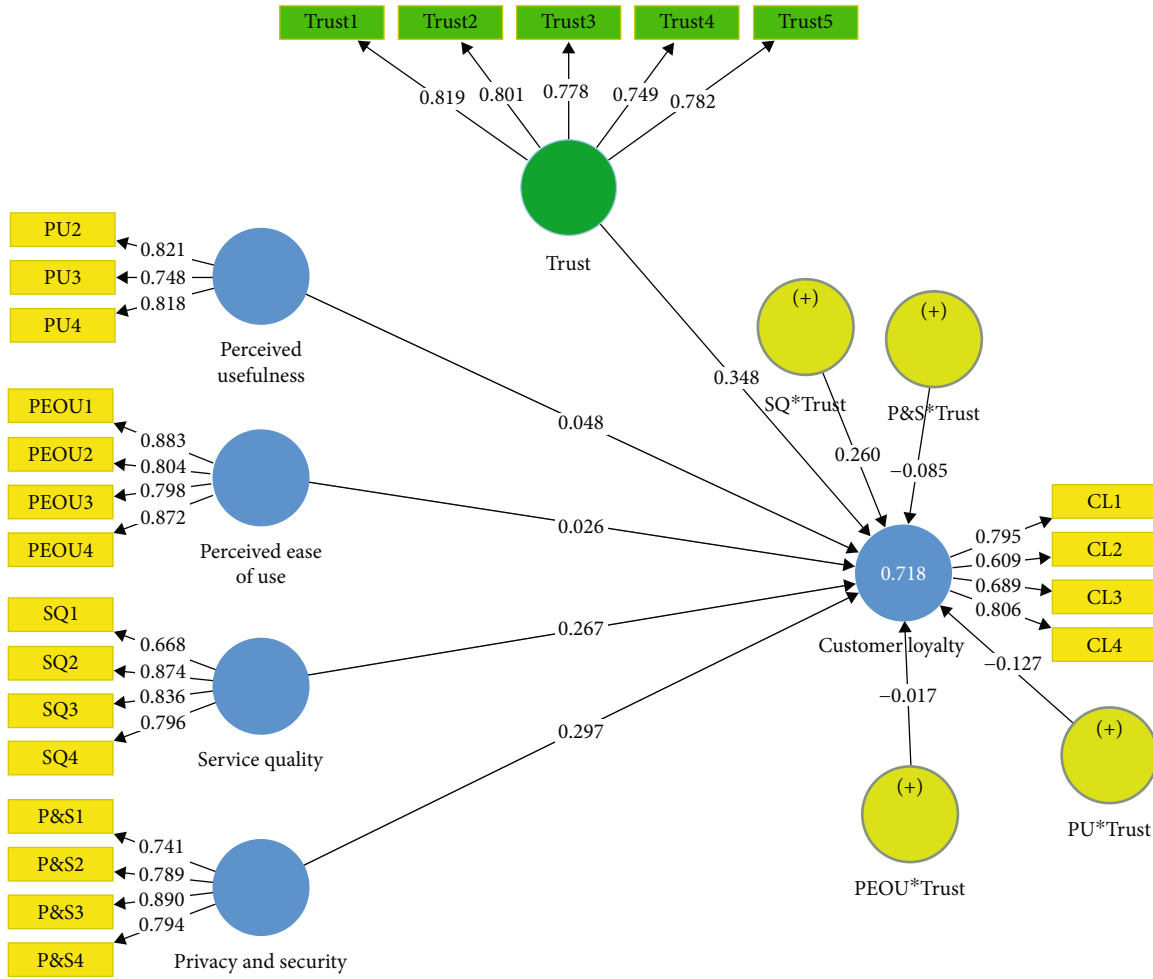
Figure 3: Measurement model results.

Table 4: PLS bootstrapping results.

Hypothesis		Std. beta	Std. deviation	T values	p values	Decision	VIF	SRMR	Q^2
H1	PU – >CL	0.048	0.083	0.579	$p > 0.05$ (0.563)	Reject	2.276		
H2	PEOU – >CL	0.026	0.044	0.597	$p > 0.05$ (.551)	Reject	1.448		
H3	SQ – >CL	0.267	0.061	4.357	$p < 0.001$ (0.000)	Accept	2.951		
H4	P&S – >CL	0.297	0.060	4.916	$p < 0.001$ (0.000)	Accept	2.997		
H5	Trust – >CL	0.348	0.075	4.611	$p < 0.001$ (0.000)	Accept	2.569	0.072	0.353
H6	PU*trust – >CL	-0.127	0.109	1.165	$p > 0.05$ (0.244)	Reject			
H7	PEOU*trust – >CL	-0.017	0.091	0.183	$p > 0.05$ (0.855)	Reject			
H8	SQ*trust – >CL	0.260	0.108	2.394	$p < 0.05$ (0.018)	Accept			
H9	P&S*trust – >CL	-0.085	0.102	0.838	$p > 0.05$ (0.402)	Reject			

***$p < 0.001$, **$p < 0.01$, and *$p < 0.05$.

mobile wallet system in performing the function may be very clear to users, and their only concern is service quality, privacy, security, and trust. Additionally, perceived ease of use did not have a significant impact on customer loyalty, i.e., Hypothesis 2 was unsupported. This finding is contrary to many previous studies (e.g., [6, 7, 11]). The failure of the unsupported Hypothesis 2 is interesting but consistent with

Garrouch [88]. Today, mobile technology is becoming more and more popular [89]. It is no longer imagined that someone owns a smartphone and cannot use it easily. Likewise, mobile wallets allow users to make transactions easily. All the customer needs to do is deposit money into their own wallet, scan the QR code at the point of sale or available dealer, and complete the transaction [90]. Thus, the
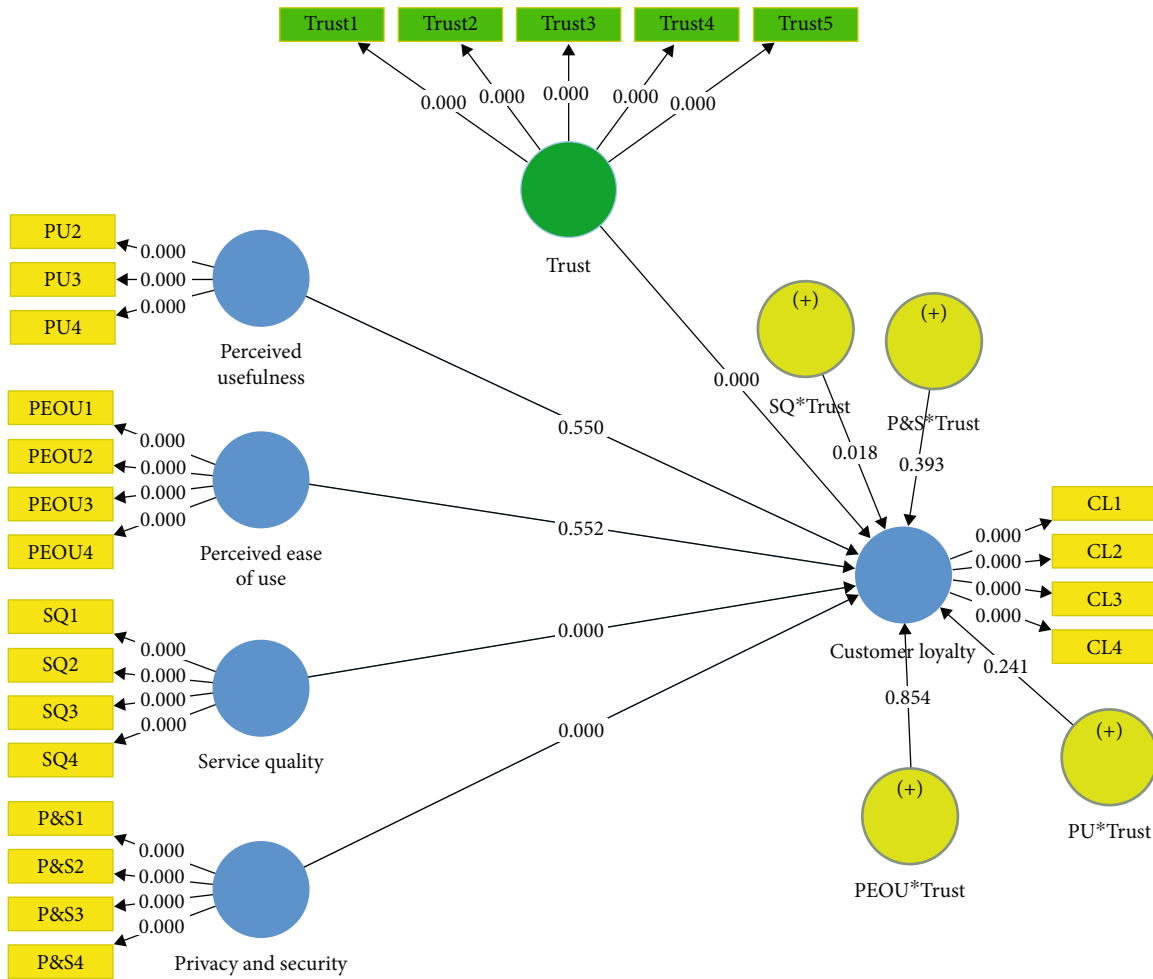
Figure 4: Structural model results.

customer is less concerned with ease of use and more so with service quality, privacy and security, and trust.

The second group was on the moderate effects of trust. In this group, the results supported only one of the four proposed hypotheses. Specifically, the results supported Hypothesis 8, which states that "trust has a significant moderating impact on the relationship between service quality and customer loyalty." It is inferred from this result that customer trust is a critical component in determining customer loyalty under acceptable service quality. Notably, this research did not support that the trust variable significantly moderates the relationship between PU, PEOU, and P&S and customer loyalty. Thus, the trust variable does not play a significant role in the relationship between PU, PEOU, and P&S and customer loyalty toward the mobile wallet (Hypothesis 6, Hypothesis 7, and Hypothesis 9).

6. Implications

6.1. Theoretical Implications. This research makes a number of significant theoretical contributions. First, to our knowledge, this paper is one of the very few that has tried to inspect the determinants impacting customer loyalty toward mobile wallets post-COVID-19. The uniqueness of this research lies in investigating the determinants of customer loyalty towards the mobile wallet in the context of India and analyzing the moderating role of trust in the relationship between the determinants and customer loyalty. Second, though TAM is a strong and well-established model for technology acceptance and adoption, the results suggest that PU and PEOU alone are not enough to explain customer loyalty toward the mobile wallet. PU and PEOU showed an insignificant influence on customer loyalty. This contradicts many other studies (e.g., [6, 7, 55]). This study provides evidence that other constructs (service quality, trust, and privacy and security) better enhance customer loyalty toward mobile wallets in post-COVID-19. Hence, this study provides further evidence of existing literature regarding the importance of expanding TAM by involving other constructs [10, 29, 31, 38]. Importantly, trust appears to be very important in customer loyalty issues (Std. beta = 0.348). Based on the empirical evidence, this study provides more evidence to the existing literature as found out by other studies that trust is significantly and positively related to customer loyalty [33, 38]. Third, the current study model explained 71.8% of the variance in customer loyalty toward mobile wallet. This predictive power of the study model was substantial compared to other research investigating customer loyalty in the mobile wallet context (e.g., [15, 21]).

6.2. Managerial Implications. Customers' use of mobile wallets has increased dramatically during the pandemic (i.e., COVID-19) as a preventive measure. However, with COVID-19 restrictions lifted and adaptation to the pandemic, customers are no longer forced to use mobile wallets. That is, things have returned to normal as before the pandemic, where the customer is left free to choose the method of payment (cash or cashless). In this regard, businesses need to retain their customers and make sure that those customers will reuse their own mobile wallets even during this period (post-COVID-19). Therefore, the current study would be helpful for the management of providers of mobile wallet services, as they will gain insight into what their field of focus is. According to this study, to promote customer loyalty in such a period, mobile wallet providers are encouraged to address issues related to the quality of service, privacy and security, and trust. This paper confirmed that service quality positively and directly influences customer loyalty. Indeed, service quality control is critical for any organization that provides services. It assists in improving customer loyalty by consistently delivering quality services [91]. Thus, to maintain a good long-term relationship, mobile wallet providers should promote service quality to naturally gain customer loyalty. The study further revealed that privacy and security have a positive and direct influence on customer loyalty. Thus, mobile wallet providers should pay high attention to privacy and security. Privacy and security are essential evaluative criteria in any online transaction [37]. When customers believe that it is possible to maintain their privacy and that it is secure to transfer private information, they will prefer mobile wallets in the long run. This research also found that trust plays a robust role in boosting customer loyalty. Trust is essential in the online world, especially when it comes to financial transactions [16]. Thus, if mobile wallet providers provide trustworthy services, this will encourage customers to develop their loyalty toward mobile wallets. Lastly, from the positive result of the moderating impact of the trust variable, it is inferred that when mobile wallet providers offer acceptable service quality and emphasize promoting customer trust, they will acquire higher customer loyalty.

Overall, our results emphasize that customer loyalty among mobile wallet users is directly affected by service quality and trust. In addition, the link between service quality and customer loyalty is moderated by customer trust. The results further suggest that customer loyalty can be improved by enhancing privacy- and security-related issues. Since loyal customers are profitable, mobile wallet service providers should work to cultivate customer loyalty through quality customer service, trust enhancement, privacy protection, and security measures. In a competitive business environment, the key to success is setting goals that focus on customers.

7. Limitations

This paper has some limitations that would drive further research. First, as the study was conducted in India, its outcomes could not be generalised to other countries with dissimilar cultures. Thus, the model and results of the study could be examined in other nations to broaden the body of knowledge. Second, there may be other constructs besides those mentioned in this study that could directly affect customer loyalty toward mobile wallet, such as information quality and user satisfaction. Also, this study considered the trust construct as a moderator. In future studies, investigators could examine other moderators such as gender, age, social influence, and habits. Additionally, future research should also consider the impact of mediators and the impact of each mediator on the other mediators. Such constructs could be used in future research to examine further extensions of the research model used in this study. Third, the present study examined customer loyalty in the mobile wallet sector, how does "customer loyalty" look in other sectors? For example, how does "customer loyalty" look like in the video game sector (pre- and post-COVID)? Fourth, the current study used a quantitative method to collect data; future research should include qualitative methods like interviews for in-depth findings. Last, larger sample size may yield different results, as other unnoticeable matters may emerge as the sample size increases.

Data Availability

Data is available by the corresponding author upon request.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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