



# Moderating and mediating effect of perceived experience on merchant's behavioral intention to use mobile payments services

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## Abstract

The current study aims to determine the factors influencing the behavioral intention of merchants to use mobile payment services (MPS). The study surveys 215 Indian merchants from a personally administered online survey process. The study includes six factors, namely: perceived ease of use, perceived usefulness, perceived experience, perceived cost, perceived trust, and word of mouth learning to measure the merchant's intention with mobile payment service. The study also tested the mediating and moderating effect of perceived experience in the relation between word-of-mouth learning and the merchant's intention. Perceived usefulness of MPS influences perceived experience, followed by perceived ease of use. The result concludes that the perceived experience is the most influencing variable, followed by word-of-mouth learning to influence merchant's intentions to use MPS both directly and indirectly (significant mediating and moderating effect). The study offers few implications to banks, finance companies, payment companies to understand factors driving merchants' intention to use MPS.

**Keywords** Mobile payments · Merchants · Perceived experience · Word of mouth · Intention · India · TAM

## Introduction to mobile payment services (MPS)

COVID 19 pandemic has enhanced the relevance of technology to many industries including financial services and retailing (Moghavvemi et al. 2021). As a result, the use of digital technologies like online payment services has been forced to increase due to lockdown and other social restrictions at retail level (Cao 2021; Talwar et al. 2021; Zhao and Bacao 2021). A mobile payment service is a kind of payment service, which is done by a mobile phone. We have various categories of mobile-based payment services available both for distant and traditional cash payments (Cao 2021). Use of MPS is surging and making a significant impact on existing and new customers. Data show a growth of 98.5

percent in total digital retail payments in the year 2020–2021 in comparison with previous year growth of 97 percent<sup>1</sup>. This growth is may be due to COVID 19 pandemic led behavioral shift in users and digitalization of retail stores in both organized and unorganized sectors. Digitalization of retail business is not new. According to Singh et al. (2020), use of digital payment systems has increased at the retailer level after the launch and implementation of Unified Payments Interface (UPI)-based systems and other digital apps such as Bharat Interface for Money (BHIM) with small retailers and unorganized Kirana shops (neighborhood) in 2016. UPI is a new technology system in which retailers can perform peer-to-peer (P2P) transactions by connecting his ADHAAR, which is a unique identification number to the retailer's bank, or can collect payments from his customer online and offline mode.

Moreover, we have witnessed several governments announced financial aids, waivers and incentives in few recent years, for example: 15 percent waiver in the service tax for doing digital transactions worth INR 2000, a few waivers related to tickets booking, tax payments, and shopping to merchants for going digital. Adoption of digital

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<sup>1</sup> <https://www.indianretailer.com/article/technology/digital-trends/rise-of-digital-payment-methods-in-retail-in-india.a7430/>.



services has been amplified at retailer level during COVID 19 pandemic as consumers demand for digital payment services like MPS has increased due to fear of using cash in pandemic times (Majumdar and Pujari 2021; SUNARJO et al. 2021; Zhao and Bacao 2021). It has now become vital for retailers to go digital for high revenue growth (Singh and Sinha 2020; Moghavvemi et al. 2021; Tripathi et al. 2021). In pandemic context, few articles or reports indicate significant restructuring at retailer level for integrating their traditional payment processes with digital technologies for gaining the benefits of current consumer's attitude, convenience of financial technologies (Fintech) and growing relevance in the mobile payment space during COVID 19 (Cao 2021; Majumdar and Pujari 2021). The findings of present study may find important in this context.

Mobile payment technology binds retailers and customers in a close-fitting network. Literature confirmed merchants emphasis on delivering the best shopping experience to their consumers (Hayashi 2012b; Moghavvemi et al. 2021). According to Singh and Sinha (2020), merchants are redesign their services, payment processes to provide convenience and good shopping experience to their consumers while emphasizing on the services provided during crisis times. A retailer may get influenced with the good experience when using mobile payments during pandemic times, which offer services like online service interface, flexibility in operations, online convenience, real time information of customers, and numerous discounts and rewards while doing online transactions (Cao 2021; Tripathi et al. 2021).

However, the adoption of technology has commenced at the retail level but still considered at an emerging stage before and after the pandemic (Jiang et al. 2021). Zhao and Bacao (2021) confirmed that merchants still prefer physical access to various transactions and ask their consumers to pay in cash for convenience, which they do not find in digital payment services. Lack of awareness, habit of using cash, system complexities, perceived installation and investment cost, data privacy, etc., are the few other barriers identified in the previous studies (Gupta 2018; Jiang et al. 2021; Moghavvemi et al. 2021). Trust and cost are important factors that are discussed in past studies on merchants and emerged as important barriers to MPS adoption (Tajvidi et al. 2017; Altwairesh and Aloud 2021; To and Trinh 2021). Few mobile applications which are offered by third parties are uncertain about who owns the right to customer data. This may bring more uncertainty at retailer level. Also, there is processing and investment cost that retailers have to pay on the adoption of MPS and considered vital for merchants. Few significant studies also shared the importance of users' experiences and feedbacks to MPS through word of mouth (To and Trinh 2021). When a merchant experience is good with digital payment services, he/she spreads positive feedbacks. When negative word of mouth is shared, user will

have negative perceived experience with technology. Prospective merchants assess these responses or feedbacks to select or reject technology for their business process (Shaw 2014; Altwairesh and Aloud 2021). All these factors affect merchant's perceptions and adoption intention. Therefore, understanding of these variables and its impact on behavioral intention is crucial. The present study explores these variables.

After reviewing these previous studies, a few research gaps were identified as follows: First, majority of the studies are based on consumer's intention to adopt a technology (Santosa et al. 2021; Rafdinal and Senalasarri 2022). Very limited studies are available on merchants, particularly in pandemic context (Altwairesh and Aloud 2021; To and Trinh 2021; Singh and Sinha 2020; Li, 2018) and limited studies in India (Sinha and Singh 2019). Second, online perceived experience has been one of the important variables to inspire a user to switch to a digital mode of payment. Many consumer-based studies discussed the perceived experience with technology and found its impact on behavioral intention (Duarte et al. 2018). But how and why merchants' perceived experience is important is still underway in the literature. Third, the mediating effect of perceived experience is discussed in a few consumer studies (Biswas & Biswas 2004; To and Trinh 2021). But both the moderating and mediating effect will provide deeper understanding of the variable and its impact on intention and recommendations that currently lack in the literature. Fourth, study extends technology acceptance model (TAM) with few variables perceived experience, trust, cost and word of mouth of learning, perceived relevant for understanding merchants' behavior. Finally, word-of-mouth learning is a wide research topic (Shaw 2014). However, the variable is limitedly explored in the payment services adoption literature and not reviewed in the context of merchants. The present study discusses these gaps and proposes the following research themes:

RT1: To understand the impact of TAM variables on the perceived experience of merchants.

RT2: To determine the association between trust, cost, and word of mouth learning on merchants' intention to use MPS.

RQ3: To assess both the direct and indirect (mediating) effect of the perceived experience of merchants on intention to use MPS.

RT4: To determine the moderating effect of perceived experience on word-of-mouth learning of merchants that eventually enhance merchants' intention to use MPS.

The study develops a conceptual model to answer these research questions. Note, "Merchant's intention" and all other alternative forms of these words have the same meaning in the entire manuscript. The present study contributes to existing MPS- and TAM-based literature by extending its findings to assess the drivers of merchants' behavioral



intention. The study discusses the antecedents of perceived experience of merchants and its influence on the association between variables word of mouth and intention. The study also explores perceived cost and trust of merchants while using MPS. The present work suggests payment companies and banks to review these factors and keep in mind while designing payment services and promoting to merchants. The study also emphasis on the perceived experience of merchants that may influence word of mouth feedbacks during pandemic times.

We classified the sections into five parts. The initial part discusses the introduction and rationale of the work. Next, it explains the conceptual models, literature review, conceptual model, and development of hypotheses. In the third part, the study discussed the methodology techniques used, development of scales, and analysis. The fourth part includes the discussion part with highlighting the contribution and limitations of the study. Lastly, the fifth part includes the list of references reviewed in the study.

## Literature review

### Use of Mobile payment services during COVID 19

COVID-19 pandemic has increased the need of digital technologies including payment services to consumers that impact business models of various industries including retailing (Moghavvemi et al. 2021). (Cao 2021; Talwar et al. 2021; Zhao and Bacao 2021). Several recent studies revealed the increased use of mobile payment services during the pandemic and recognized a sharp shift in consumer attitude and adoption of online and mobile based payment services when compared with pre COVID 19 (SUNARJO et al. 2021; Shankar et al. 2021). According to Shankar et al. (2021), mobile payment services create an opportunity to retailers to enhance their capabilities in terms of delivering online services and developing online payment support for customers during these tough times. Technology services are the growth providers for the pandemic suffering economies (Jiang et al. 2021). They are helping retailers in performing business online as they are perceived safe and convenient by consumers. Zhao and Bacao (2021) talked about the convenience and reliability of mobile payment services to users which are useful to reduce physical contacts in transactions. They confirmed the significant impact of technological and behavior factors on MPS adoption during pandemic. In a similar study by Jiang and Stylos (2021), it has been discussed that MPS is preferred by consumers as it consists of online convenience that saves user's time and efforts with minimum physical interaction. Seeing the pace at which use of digital payment services is increasing at retail level, recent studies seek an understanding of various

drivers of adoption (Cao 2021; Lin and Xu 2021). However, these works exist majorly on consumers, and perception of merchants about MPS is still explored limitedly.

## Theoretical background

The adoption and perception of new technology have been extensively studied and reviewed in the previous and recent pandemic literature (Liébana-Cabanillas et al. 2021; Zhao and Bacao 2021; Rafdinal and Senalasarri 2022). Technology Acceptance Model (TAM), (UTAUT2) Unified Theory of Acceptance and Use of Technology, Planned Behavior theory, Diffusion Theory of Innovation (DOI) are the few widely used models that are used to assess the performance of MPS and related user's outcomes (Slade et al. 2015; Singh et al. 2020; SUNARJO et al. 2021; Zhao and Bacao 2021). These studies suggested various drivers and antecedents of adoption including effort expectancy, innovativeness, performance expectancy, perceived compatibility, and included a few new variables like trust, fraud risk, perceived cost, consumer's experience, perceived value, etc., that influence behavioral outcomes of a user. Lin and Xu (2021) assessed several research papers on the adoption of information technology services; they established that TAM is the most used foundation theory of these studies; easiness and usefulness are the best-influencing factors to measure behavioral intention. Few previous studies have been reviewed, where both TAM and UTUAT are used as a base model in the context of merchants (Singh and Sinha 2020; Cao 2021; Moghavvemi et al. 2021).

Slade et al. (2015) reviewed several past studies available on the use of mobile payment systems and concluded that TAM is better suited for individual adoption behavior, whereas UTAUT is more favored in organizational settings. UTAUT is known as an extension of TAM by including two variables social influence and facilitating conditions (Cao 2021). The present study does not include the UTAUT model as variable facilitating conditions are more relevant in the organizational context (Lin and Xu 2021). Further social aspects of the adoption are already covered and discussed under word-of-mouth learning as a variable in the current study. Therefore, the UTAUT model was not essential in the present context. Additionally, in respect to merchants' intention which is limitedly explored in the literature, understanding of individuals' (merchants) perception towards technology's usability and convenience is more crucial and required presently. Therefore, TAM is found highly relevant and sufficient to measure these aspects by including perceived ease of use and perceived usefulness. Further, merchant's requirements are different from end-users and possess complicated relationships with various determinants (Singh and Sinha 2020), therefore, the study integrates TAM with variables



**Table 1** Evaluating studies in the mobile payment technology

Variables	Authors
Self-Efficacy, Perceived Convenience, Perceived Value, Costs, WOM, Perceived Risks	Li (2018)
Knowledge, payment cost, installation cost, critical mass, standardization, operability	Mallat & Tuunainen (2008)
Performance expectancy, infrastructural issues, the impact of demographics	Możdżyński 2018
Merchants, brick and mortar retails, socio-economic variables, knowledge, regrets	Ullah and Sepasgozar (2020)
Merchants, brick and mortar retails, business factors, technological competence, social influence	Huynh et al. (2021)
Retailers, data privacy, trust, data rights, usefulness	Willis et al. (2021)
Merchants, Technology Value, personality traits, regulatory bodies, innovativeness, convenience	Mishra et al. (2022)
Merchants, word of mouth, cost, risk, privacy	Talwar et al. (2021)

perceived experience, perceived cost, trust, and word of mouth learning.

Ullah and Sepasgozar (2020) showed that merchants have increased their involvement and investment in digital payment services and use online transaction mode of payments during COVID 19. This shift is observed due to increase in consumers' demand for digital payment services (SUNARJO et al. 2021; Zhao and Bacao 2021). However, they indicated the slow growth in adoption due to complexities related to investment cost, data privacy issues and other behavioral factors (Khan et al. 2021). Similarly, Mishra et al. (2022) discussed merchants' views on MPS adoption especially in the framework of unorganized Indian retailers and revealed merchants' opinions as an opportunity to connect with bottom of the pyramid users post pandemic. In a recent study by Chen (2021), various incidents were recognized, where retailers avoid using payment services in their business due to high investment cost, time-consuming process, consumer's cash habits, low convenience, and low flexibility in online mode (Duarte et. al. 2018; Zhao and Bacao 2021). The current study highlights these gaps and identifies factors influencing the behavioral intention of merchants. Table 1 includes a few recent studies on factors influencing merchant's intention before and during COVID 19.

Hayashi (2012b) reviewed various macro- and micro-variables affecting the adoption of a mobile payment service; they stated that contingency factors are external factors, which are related to policies changes, infrastructural issues, legal issues, regulatory barriers, social influence, and are outside the control of users and firms. On the other hand, inner factors are competitive factors namely: perceived experience, trust, usefulness, compatibility, and affect the behavioral intention of a user such as a consumer and a merchant. These factors can be influenced by the effectiveness and quality of technology and increase the user's acceptance. The present study emphasis on inner factors of mobile payment adoption. Several studies review these variables and identify them as motivators and barriers to MPS adoption during pandemic (Ullah and Sepasgozar 2020; Huynh et al. 2021; Mishra et al. 2022). Huynh et al. (2021)

studied technological competence and business-related factors including trust and cost associated with the adoption of mobile payments by small medium enterprises in COVID-19; they stated that a technology, which is perceived competent and trustworthy, is generally preferred and used.

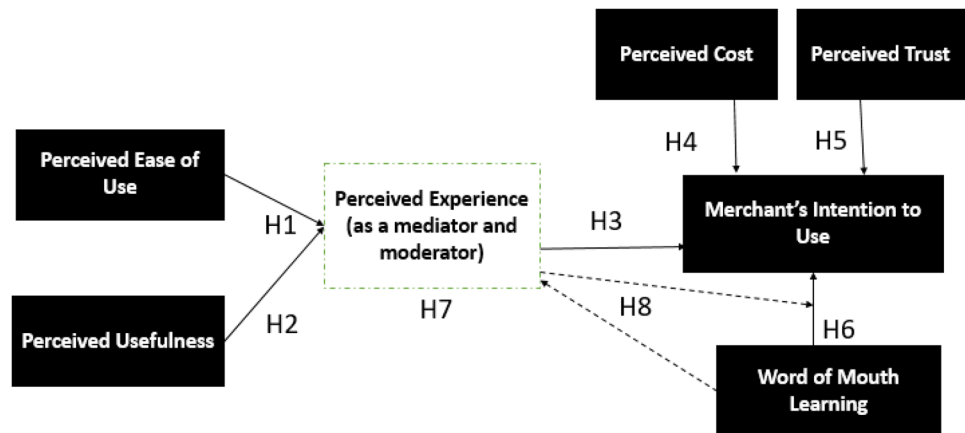
Extensive research is available in India as well as other countries' contexts on the behavioral intentions of consumers before and during the pandemic (Singh et al. 2020; Cao 2021; Rafdinal and Senalasar 2022; Sinha and Singh 2022). In addition, we have a few important studies, where merchant's perception was also evaluated on the acceptance of a payment technology (Możdżyński 2018; Huynh et al. 2021; Mishra et al. 2022). However, we identified lack of research on Indian merchant's intention to use mobile payments during COVID 19 (Mishra et al. 2022).

There are a few other factors, which are found important to understand in the Indian context. One such variable is perceived trust. Perceived trust is used as a key antecedent to measure user's intention in various past researches (Mallat and Tuunainen 2008; Singh et al. 2020; Altwairesh and Aloud 2021). Consumer data security and perceived trust are closely associated; a merchant may or may not have the access to consumer personal information that affect their perception (Tajvidi et al. 2017; Willis et al. 2021). Lin and Xu (2021) have highlighted risk and trust issues related to mobile payment services that direct to lower intention and higher resistance towards a new technology. Other variable, which is important to adopt a technology, is perceived cost. A very few past studies have included price value as a construct (To and Trinh 2021) as there is no direct monetary cost to a user with the mobile payment adoption. However, the cost is important in the context of merchants, as they need to undergo processing costs of payments and other costs related to infrastructural investments, fraud costs, and overall operating costs to accept mobile payments (Hayashi & Bradford 2014). Merchants operating in low-profit margin stores prefer low-cost systems as compared to big departmental stores (Willis et al. 2021).

The tremendous growth in mobile payment services has extended the worth of informal learning through WOM on



**Fig. 1** Conceptual Model *Note: dotted arrows denote moderating and mediating effect while weights arrows are included to represent direct effects*



technology usage (Duarte et al. 2018; Khan et al. 2021; Talwar et al. 2021). Learning through WOM is a new medium to share positive and negative feedbacks of new and existing users of a technology service (Ali Qalati et al. 2021). Various studies confirmed the significance of the physical and automated word of mouth communication on user buying judgments (Duarte et al. 2018; Ali Qalati et al. 2021; Talwar et al. 2021). Word-of-mouth learning is largely used to predict the behavioral intention of a user (Bermes 2021; Khan et al. 2021). In pandemic context, Bermes (2021) confirmed the negative influence of informal learning, fake news and feedbacks that effect consumer's attitude and experience with the service. Similarly, Talwar et al. (2021) stated the negative effect of WOM that impact user's intention and decreases the recognition of new technology. Therefore, we consider word of mouth as an important construct that may influence merchant's intention.

### Conceptual model

The theoretical model of the study is demonstrated in Fig. 1. The proposed conceptual model aims to find out the associations between various hypotheses derived from past studies. In the first step, we propose the effect of perceived ease of use, perceived usefulness on perceived experience which finally lead to the merchant's intention. In the second step, we analyze the influence of other factors that are perceived cost, perceived trust, and word of mouth learning on intention. Finally, we establish the mediation and moderation effect of the perceived experience of a merchant in the connection between word-of-mouth learning and the merchant's intention. This study will be considered as an extension of several previous models on technology adoption and measure the merchant's intention to use, which has not been studied adequately in past studies.

### Statement of hypotheses

#### Perceived Ease of Use and Perceived Usefulness

Ease of use is described as an uncomplicated process of using a technology conveniently and effortlessly. Moreover, the usability of MPS is measured on the user's expectation of the performance and usefulness of a specific task while using MPS (Singh et al. 2020). These technologies can be mobile commerce, or mobile payment services such as mobile payments. Rafdinal and Senalasar (2022) used both the constructs and found them crucial to influence user's intention to use MPS during pandemic; their findings discovered that users are inclined to use MPS as it requires minimum physical interaction and found useful to provide positive online experience to users. This establishes a positive influence of both the constructs on the perceived experience of a user (Singh and Sinha 2020). Various past studies have found the significance of both the constructs and influence perceived experience of users (Phong et al. 2018; Altwairesh and Aloud 2021; To and Trinh 2021).

Liébana-Cabanillas et al. (2021) established the significant and optimistic influence of both factors on technology adoption; they found that consumers have a positive experience if technology is effortless and easy to handle. Puriwat and Tripopsakul (2021) used Expectation Confirmation model and suggested the strong impact of perceived usefulness on consumer experience with payment service that eventually enhance the adoption. In the context of merchants, Ali Qalati et al. (2021) stated that the usefulness of a service might be considered essential if it adds value to the service and provides the best experience to a retailer. In a few recent studies on the adoption of technology during COVID-19, factors such as technology usefulness and convenience are found relevant to improve merchant's experience and behavioral intentions (Khan et al. 2021; Talwar





et al. 2021; Mishra et al. 2022). Hence, we propose our first two hypotheses as follows.

**H1:** There is a relationship between perceived ease of use and perceived experience.

**H2:** There is a relationship between perceived usefulness and perceived experience.

### Perceived Experience

Nowadays, merchants have become smarter and more sensible with the use of digital payment services. They are inclined to high-quality products and services and focus on the perceived experience (Chou et al. 2015; Mishra et al. 2022). Efficiency of payment services has become critical for merchants in order to provide effective and safe online services to their customers during pandemic (Devanesan et al. 2021). This improves merchant's experience with payment services when handling customers and doing such transactions (Singh and Sinha 2020). Perceived experience is defined as the complete user's benefits and shopping experience, which is received based on the features and effectiveness of a product and services (Jiang and Stylos 2021). This also states the complete involvement of merchants, which is based on the overall performance of a service (Devanesan et al. 2021). Perceived experience shows a crucial role in assessing the performance and popularity of a technology (Talwar et al. 2021). Chou et al. (2015) explained that merchants' perceived experience is derived from their perception and motivation to spread feedback and share understanding, which enhances the value of technology service. Various researchers have included perceived experience in their study to measure the user's intention and perception about a technology; these experiences are based on the retail environment and in-store experiences of merchants (Devanesan et al. 2021). User experience has a direct association with his preference and influences his decision to adopt technology for payments and other transactions. According to Chowdhury et al. (2020), there is a direct association between a technology service and merchants' intention. During COVID 19, retailers used technology services to reduce complexities related to suppliers' payments, credit facilities and other physical dealings issues, MPS assists merchants to visualize information and make purchase decisions. Hence, mobile payment technology plays an important role to enhance the perceived experience of a merchant (Jiang and Stylos 2021).

Merchants have integrated the concept of perceived experience with their business goals and explored several opportunities to use smart online technologies to enhance their perceived experience. Jiang and Stylos (2021) stated that better experience is the most desirable objective to merchants when using payment services. However, it is far

more than simply understanding a new technology; payment companies need to understand the desire of a merchant and various challenges and issues, which affect the perceived experience. Therefore, it is key to recognize the perceived experience and assess the merchant's behavioral intention associated with it.

**H3:** There is a relationship between perceived experience and a merchant's intention.

### Perceived cost

Merchants perceive the cost as an important criterion to implement an online payment system in their business. We define cost as the charges related to processing payments of consumers, investment cost to integrate mobile payment system in the business model, and a few other costs related to operating and security-related factors. Few recent studies clarified that retailers have to bear several costs before and after the adoption of a technology in the business process; these costs are related to specific software installation, arrangements of a wireless system, NFC setup, and other training and development cost of employees to learn about new technology (Huynh et al. 2021; Willis et al. 2021). According to Ullah and Sepasgozar (2020), costs involved in the installation of mobile technology services significantly affect the merchant's intention to use technology.

Moreover, merchants look for a system, which can control payment costs and attract more customers to use the cost-effective method of payments. Hayashi (2012a) and Singh and Sinha (2020) confirmed that earlier merchants were found resistant to motivate their customers to switch to a digital mode of payments, as traditional payment process involve cash with no surcharges. However, due to COVID 19 outbreak and with few recent developments in legal policies and regulations in the processes, merchants are now attracted with greater flexibility in online payment process, contact less and online procedures (Cao 2021; Lin and Xu 2021). This will eventually lead to merchant's inclinations to use technology in their business such as mobile payments. Past literature confirmed the strong association between perceived cost and merchants' inclination to use technology (Hayashi & Bradford 2014; Lin and Xu 2021). Merchants always desire to lower their transactions processing costs while using mobile payments; they prefer low cost. Also, investment cost related to software and the use of POS terminals and equipment; merchants perceive that this cost can also be reduced by using mobile payments over other technologies (Sinha and Singh 2020).

Overall, the cost is the highest priority among the merchants belonging to all categories, including low-profit-margin traders of small grocery stores, and high profit-margin stores such as department stores due to slow economic



growth in pandemic (Moghavvemi et al. 2021; SUNARJO et al. 2021). Therefore, we propose:

**H4:** There is a relationship between perceived cost and a merchant's intention.

### Perceived trust

Perceived trust is considered very significant to measure and influence technology adoption and behavioral intention of a user (To and Trinh 2021). Perceived trust is explained as an emotional state in the previous studies that motivate one user to trust others based on the satisfaction received. Various past literature highlighted that trust has a major impact on the intention and adoption of a system (Tajvidi et al. 2017; Gupta 2018; Liébana-Cabanillas et al. 2021; Sinha and Singh 2022). Further, studies based on merchant's adoption behavior considered the use of digital technologies very important to the business but raised concerns related to data privacy and trust issues in the system (Lin and Xu 2021; Sinha and Singh 2019; Talwar et al. 2021).

In the last few years, researchers have highlighted the significance of trust to measure users' intention in the adoption of technology services; findings explained that users' trust positively influence behavioral intention and increase the acceptance of a service (Huynh et al. 2021; Singh et al. 2022; Willis et al. 2021). Cao (2021) indicated trust as the most agreed barrier to the adoption of mobile payment services by retailers during COVID 19 outbreak. They confirmed that consumers do not trust mobile payment services and find it difficult to operate. Moreover, few recent studies also stated that merchants cannot secure transactions and payment process completely that restrict mobile payment system to be perfect for users (Altwairesh and Aloud 2021; To and Trinh 2021). To further explore, the following hypothesis has been proposed.

**H5:** There is a relationship between perceived trust and a merchant's intention.

### Word of mouth learning

Lack of Awareness about the use of technology is considered as the main barrier in various developing countries like India (Gupta 2018). The usability of a technology is determined by understanding the benefits and effectiveness of a technology (Talwar et al. 2021). Recent studies showed merchants belief on word-of-mouth communication is positive as it enhances awareness among the users and influence their perception to adopt a technology for digital transactions during COVID 19 (Altwairesh and Aloud 2021; SUNARJO et al. 2021; Zhao and Bacao 2021). According to (Talwar et al. 2021), WOM is defined as favorable or unfavorable statements of existing

users about their perception of a product or service. Shaw (2014) found the strong influence of word-of-mouth learning on users' perception and finally effect his intention to use technology; their findings suggested that merchants who are unaware about technology, are concerned with the loss of their personal data and avoid high use of technology. This in return spreads negative WOM and affects others intend to use technology such as mobile commerce.

According to Verkijika and Neneh (2021), low awareness of a user and lack of informal learning negatively influence his perception about a technology. It is observed that online users review the experiences, both positive and negative feedbacks of existing and new customers before using mobile payment services. They further confirmed that positive feedbacks eventually lead to potential customers and high usage of a service. Wang et al. (2021) established the strong link between merchants' experience and word of mouth learning. They indicated the positive impact of emotionally framed announcement of food retailers on consumer's word of mouth communication during pandemic times. Studies confirmed those have a good experience with the service are more likely to spread positive information and feedback through word of mouth or vice-versa (Talwar et al. 2021; Verkijika and Neneh 2021). For various online transactions and services, WOM is considered as a main source of information to spread feedbacks and information about a technology (Altwairesh and Aloud 2021). Hence, we propose the influence of learning through word of mouth on intention.

**H6:** There is a relation between word-of-mouth learning and a merchant's intention.

### Perceived experience as a mediator

Mediator variable explains the process through which two variables are interlinked. On the other hand, moderator variable influences the association between two variables<sup>2</sup>. We tested the mediating and moderating influence of perceived experience on a merchant's intention to use MPS to offer new insight to the literature on mobile payments in a developing market like India.

Word of mouth is an informal message about a product's benefits and characteristics, which influences merchants' decision-making process (Nilashi et al. 2022). Such communication is shared by an existing user to a potential user about his/her experience with a service. Recent studies confirmed that consumer's word-of-mouth recommendations

<sup>2</sup> <https://www.scribbr.com/methodology/mediator-vs-moderator/#:~:text=What's%20the%20difference%20between%20a,and%20direction%20of%20that%20relationship>



are based on their perceived experience with a product or service attributes that influence their intentions to use such services (Chen et al. 2021). In the context of COVID-19,

several studies discussed user's experience in using online and contact less services (Kuppelwieser et al. 2021; Gian-tari et al. 2021; Sosanuy et al. 2021). Findings showed that information and learnings received through word-of-mouth communication by existing users build perceived experience of new users; more positive word of mouth would lead to better perceived experience and behavior intentions (Nilashi et al. 2022). On the contrary, negative WOM about a product or service affect user's expectation and perceived experience that affect adoption of a service adversely.

The linkage between perceived experience and word of mouth promotion of a technology has been explored in several previous studies by including the indirect influence of perceived experience (Kuppelwieser et al. 2021; Verkijika and Neneh 2021). It has been revealed that both word of mouth recommendations and perceived experience influence users behavioral outcomes. Limited work is done on merchants in the context of COVID-19 (Chen et al. 2021). We propose that WOM learning enhances the merchant's awareness about technology and positively influences the merchant's behavioral intention. However, if merchants have a bad opinion and share negative word of mouth feedbacks, perceived experience will be poor that finally affect intention and resist other users to use a technology for payments. Therefore, we propose:

**H7:** Perceived experience mediates the relation between WOM learning and merchant's intention.

### Perceived Experience as a moderator

User's experience affects various decision-making process and moderate's user's perception and the process by which perception is formed (Lee 2019; Saxena et al. 2021). According to Hernández et al. (2010), user's experience influences the strength of the relationship between user's perception and intention to use such services between high perceived experience versus low perceived experience user. This explains that when a user has high perceived experiences of service, he/she spread mores positive and overwhelming word of mouth about the service to. Such feedbacks increase others' willingness to adopt such services. Similarly, low perceived experience users will not be sure about the efficacy of the service that will affect their recommendations to others (Kang et al. 2021; Talwar et al. 2021). Similarly, Song and Noone (2017) confirmed the positive association between user's perception that influence positive recommendations (Singh et al. 2020) and intention, relation is found strong for consumer with high perceived experience than low perceived experience.

Various studies indicated that due to pandemic outbreak, user's expectations have been changed and they now demand online and mobile based payment services due to the fear of COVID 19 (Altwaresh and Aloud 2021; To and Trinh 2021). This influences their feedbacks and recommendation to digital services (Cao 2021; Talwar et al. 2021; Zhao and Bacao 2021). In this context, few studies confirmed that user's review existing user's experiences and feedbacks on the service attributes and select a service based on his own and others' perceived experiences (Kang et al. 2021; Saxena et al. 2021).

The moderating effect of the variable may suggest the importance of high and low perceive experience of two group of merchants on spreading word of mouth recommendations to use MPS during pandemic times. It is assumed that when users receive a service as expected, positive experience is observed that influence the relationship between information sharing (through word of mouth) and intention to use MPS. Therefore, we propose that users with high perceived experience will share more positive word of mouth than users with low perceived experience to use MPS.

**H8:** Perceived experience moderates the relation between WOM learning and merchant's intention.

## Research methodology and result analysis

### Scale description

Perceived ease of use, perceived usefulness and behavioral intention scales of TAM model was modified in the context of merchants and adapted from Singh et al. (2020). Similarly, perceived cost and Perceived trust scales were adaption from Singh and Sinha (2020). Perceived experience scale was adapted from Lee (2019). Finally, word of mouth scale was adapted from the study of Shaw (2014).

### Sampling frame and descriptive analysis

We have used a systematic data collection process in the present study. Before finalizing a questionnaire, a detailed review of past studies was performed. Based on the findings, a semi-structured questionnaire was proposed by including all the important factors suggested by the recent and relevant studies on technology adoption (See Appendix I). A series of informal group discussions were conducted with different groups of merchants offering different products categories, belong to different income and experience levels by using the semi-structured questioning route. These questions aimed to determine the opinions and perceptions of merchants about factors influencing mobile payments adoption. After that, the second round of the literature review was done based on the recommendations. Next, to ensure content





**Table 2** Respondent's demographic descriptiveness

		Frequency	Percentage
Gender	Males	182	84.65
	Females	33	15.34
Age	20–30 years	54	25.11
	31–40 years	75	34.88
	41–50 years	57	26.51
	Above 50 years	29	13.48
Business Monthly Income (INR):	10,000 or less	24	11.16
	11,000 to 50, 000	36	16.74
	51,000 to 150, 000	50	23.25
	151,000 to 300,000	52	24.18
	301,000 to 500,000	31	14.41
	More than 501, 000	22	10.23
Do you currently use Mobile payment services	Yes	195	90.69
	No	20	9.30

validity, the instrument was sent to a few experts including academicians, mobile payment professionals, a few merchants, bank managers, for their feedback. Few statements were slightly modified to improve the understanding of the variables based on the feedback received from experts. The final questionnaire was created with three categories: demographics, controlled questions, and a few questions related to the research objectives. The study explained the purpose of the research via email to the merchants. Respondents were assured about the safety of their data and were informed that maximum time involved in completing the questionnaire is between 7 and 10 min.

A pilot testing on the final version of the questionnaire was conducted on 100 merchants situated in Delhi and the NCR region in India. The objective was to measure the degree of acceptance, reliability, scalability, and validity of the chosen behavioral scales. We selected merchants in the Delhi and NCR regions in India. Based on world urbanization prospects 2018 by United Nations, the NCR region is considered the world's largest urban agglomeration and going to become the most populous city by 2028.<sup>3</sup> NCR has the highest share of inter-state migrants from all over India belonging to varied demographics, traditional and religious backgrounds (Singh et al. 2020). Hence, the sample may be considered representative of the country. A survey invitation email was sent to a large group of 400 merchants on July 1, 2018. These merchants were also requested to spread the email among their network and business partners. In the span of 3 months, we have received responses from 220 retailers, and 215 complete survey forms were used for the

present study. The current sample of 215 was considered sufficient to conduct the analysis, since the ratio of sample size to number of items (215/27) is found 7.96. This exceeds the minimum threshold (5:1) as suggested by Bentler and Chou (1987). Hence, sample size is justified. Table 2 describes the demographic information of the participant's merchants.

### Validity and reliability

We used SPSS 20 and AMOS 18 to perform data analysis in the current study. In the first step, we performed exploratory factor analysis to measure the item's loading and selected factors with higher loadings. Exploratory factor analysis (EFA) was conducted to decide the number of factors by examining the eigenvalues (preferable greater than 1) and factor loading (greater than 0.6) using principal component matrix. EFA is used to check the internal validity and assess the development of factors (Williams et al. 2010). Even in the case of established scales, studies have used EFA as these instruments have been proven valid in different settings or context. Thus, EFA is beneficial to provide the structure based on the current responses collected (Podsakoff et al. 2012). We used rotation technique to maximize high loading and minimize low loadings to arrive at best factor structure. EFA results show few errors in the statement coding and low factor loading of 5 items (less than 0.6). These 5 items were removed from the final questionnaire. We used a non-probabilistic convenience sampling technique to collect the responses from those people who has most convenient access. This method is considered effective as it is easy to use and cost effective in comparison with other probabilistic sampling techniques (Singh et al. 2020). Non-probabilistic sampling is appropriate as a technique and found useful when research is conducted on a specific group of respondents, merchants in the present case.

<sup>3</sup> <https://economictimes.indiatimes.com/news/politics-and-nation/delhi-could-be-the-worlds-most-populous-city-by-2028-but-is-it-really-prepared/articleshow/68027790.cms?from=mdr>.



**Table 3** Reliability and confirmatory factor analysis

Constructs (AVE, CR, MSV, ASV)	Items	Cronbach's Alpha	FL
Perceived Ease of Use (PEUSE)(0.51; 0.75; 0.32; 0.24)	Mobile payment services are easy to use	.793( $p < 0.01$ )	.67–.76
	Mobile payment processes are clear and understandable to me		
	Mobile payment transactions save my time and efforts		
Perceived Cost (PCOS) (0.51; 0.76; 0.49; 0.39)	Mobile payment service looks very convenient to me	.750( $p < 0.01$ )	.61–.83
	Mobile wallets installations cost is high		
	My daily transactions expenses will reduce by the use of mobile payments		
	Mobile payment service reduces the cost of processing my consumer payments		
Word of Mouth learning (WOM) (0.59; 0.85; 0.47; 0.31)	Use of mobile payment offers me several cashback and discounts, hence it is worth my money	.810( $p < 0.01$ )	.75–.78
	I always read online consumer reviews and feedbacks about mobile payment services		
	I read recommendations of consumers about mobile payment services		
	Consumers and other merchants strongly recommend to use mobile payment services for daily transactions		
	Consumers and other merchants speak favorably about mobile payment services		
Perceived Trust (PTRU) (0.59; 0.85; 0.47; 0.32)	I trust that mobile payment service is safe and reliable	.866( $p < 0.01$ )	.61–.85
	I trust the mobile payment apps and transactions done from it		
	I trust mobile payment service secures my consumer personal and financial data		
	I trust mobile payment service is secure from frauds		
Perceived Usefulness (PUSE) (0.51; 0.81; 0.52; 0.36)	Mobile payment service is very useful to perform daily transactions	.873( $p < 0.01$ )	.65–.88
	I can access mobile payment services anytime and anywhere		
	My payments are processed quickly through mobile payment services		
	The mobile payment app is perceived very useful		
	Mobile payment service improves my business experience		
Perceived experience (PEXP) (0.56; 0.86; 0.36; 0.29)	Mobile payment app enhances the effectiveness of my business by using the app	.884( $p < 0.01$ )	.68–.89
	The more I use the app the more I become experienced with it		
	Mobile payment allows me to receive all relevant information related to my business		
	I have a plan to use mobile payment services for my business		
	I always try to use payment-related services of the app in my daily life		
Intention to Use (INTN) (0.54; 0.77; 0.49; 0.29)	I plan to switch my payment related works to mobile apps	.71( $p < 0.01$ )	.66–.87
	I intend to increase my usage of mobile payment services for consumer service		

Source: Authors' Survey, FL = Factors Loadings

Cronbach's alpha factor of each factor is also determined to measure the reliability of the variables and appropriateness for confirmatory factor analysis (Table 3). Kaiser–Meyer–Olkin value was 0.884 which is above the accepted level of 0.70. The test of sphericity was found to be very small (0.000). We have used covariance-based

SEM (CB SEM), which is suitable for large samples (100+ respondents) and normally distributed data. In the second step, we used a single factor suggested by Harman to confirm the presence of frequent or common method bias (CMB). All the items were evaluated by using EFA technique. We have adopted all the items around one variable



**Table 4** Fornell-Larcker criterion: correlation matrix of constructs and HTMT results

	PEUSE	PCOS	WOM	PTRU	PUSE	PEXP	INTN
PEUSE	<b>.715</b>	0.890	0.604	0.691	0.658	0.77	0.64
PCOS	0.565	<b>.719</b>	0.54	0.514	0.696	0.595	0.754
WOM	0.45	0.513	<b>.770</b>	0.800	0.798	0.533	0.514
PTRU	0.33	0.664	0.691	<b>.770</b>	.675	0.574	0.549
PUSE	0.457	0.615	0.651	0.432	<b>.719</b>	.661	.513
PEXP	0.501	0.575	0.454	0.6	0.579	<b>.757</b>	0.689
INTN	0.569	0.707	0.434	0.508	0.345	0.435	<b>.734</b>

Fornell-Larcker criterion (below the main diagonal) and heterotrait-monotrait ratio (HTMT) (above the main diagonal). Main diagonal: in bold square root of the AVE

and found a variance of 29.53 percent, which is very less than the recommended level of 50 percent (Yang et al. 2012). Hence, no CMB was observed in the study. Moreover, to reduce common or frequent method bias, we aimed to avoid extreme or midpoint referencing styles and kept the questions as simple as possible. Also, we switched up the format of various questions using different response format, for example: 5-item and 7-item Likert scales. All these techniques helped us to control the problem of CMB (Podsakoff et al. 2012).

Next, to measure convergent, discriminant validity, and composite reliability, we calculated average variance extracted (AVE), maximum shared squared variance (MSV), composite reliability (CR) and average shared squared variance (ASV) for all the determinants (Table 3). The values show that AVE of all variables are higher than 0.5 and composite reliability are higher than 0.7 which confirmed the convergent validity of the model (Hair et al., 2010). Moreover, for each variable CR is larger than AVE. To measure the discriminant validity, both Fornell-Larcker criterion and HTMT methods are used (Table 4). First, using Fornell-Larcker criterion AVE values for each factor were compared with MSV and ASV values. In the case of all variables, AVE is greater than MSV and ASV; hence, the discriminant validity has been confirmed. The square root value AVE is greater than its corresponding correlation coefficients value. Values also explain the correlation between each factor and the square root of AVE for each variable. Next, to calculate the heterotrait-monotrait ratio of correlations (HTMT), we used the below formula in excel<sup>4</sup>:

$$HTMT = \frac{A}{\sqrt{B} * C}$$

Both the method confirmed and established discriminant validity of the factors with HTMT values less than 0.8 (Hair et al., 2010).

Model fitness results are explained in Table 5. The value  $\chi^2/df$  of both models is within the acceptable range from 2 to 5. The values of AGFI, GFI, NFI, and CFI indices exceed the threshold of 0.9, and RMSEA values are less than 0.08 (Hair et al. 2010).

## Findings and analysis

We measured the significance of the effect of perceived ease of use and perceived usefulness on the perceived experience of a merchant, as well as the influence of the perceived experience of a merchant, perceived cost, perceived trust, and word of mouth learning on merchant's intention to use (Table 4). The study describes the acceptance of six out of eight hypotheses effects. Firstly, the analysis confirmed the significant impact of perceived ease of use and perceived usefulness on the perceived experience of a merchant, which supported hypotheses H1 and H2. While both the variables appeared as significant, the influence of perceived usefulness is higher ( $\beta = 0.502, p < 0.001$ ). This suggests that the

**Table 5** Fit indices of structural model

Fit Indices	Measurement Model	Structural Model	Recommended Value
$\chi^2/df$	2.842	2.857	< 5
GFI	.990	.989	> 0.90
AGFI	.929	.913	> 0.80
NFI	.989	.976	> 0.90
CFI	.993	.986	> 0.90
RMSEA	.07	.06	< 0.08

NFI should be as low as 0.80 (Hooper et. al., 2008)

<sup>4</sup> A=the mean of all pairwise correlations between items of first constructs and items of second constructs.

B=the mean of all pairwise correlations between items of first constructs.

C=the mean of all pairwise correlations between items of second constructs.

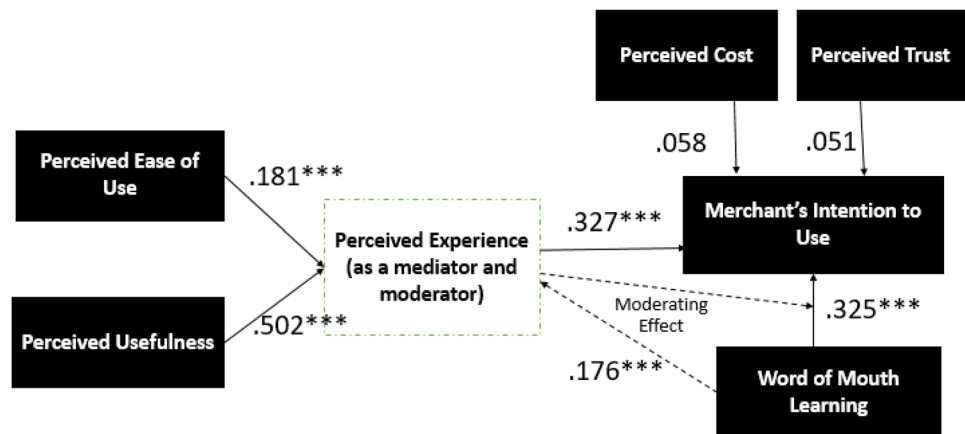


**Table 6** Hypothesis testing results

Hypotheses	Standardized Path Coefficients	t value	P-value	Supported
H1: PEUSE—> PEXP	.181	4.072	.000	Yes
H2: PUSE-> PEXP	.502	9.457	.000	Yes
H3: PEXP-> INTN	.327	5.783	.000	Yes
H4: COS-> INTN	.058	1.174	.240	No
H5: PTRU-> INTN	.051	.953	.341	No
H6: WOM-> INTN	.325	5.397	.000	Yes
H8: WOM*PEXP> INTN	-.667	-2.059	.020	Yes

Source: Authors' Survey

**Fig. 2** Interactive plots



perceived usefulness of technology plays an important role in the perceived experience of a merchant. In the second step, we measure the drivers of intention to use; findings indicate that the effect of perceived experience on intention to use a mobile payment system is higher ( $\beta = 0.327$ ,  $p < 0.001$ ).

This shows that a user's perceived experience inspires him to adopt and use technology like mobile payments. This confirmed our hypothesis H3. The second most influencing variable that appeared as significant is word of mouth learning on intention to use ( $\beta = 0.325$ ,  $p < 0.001$ ), which confirmed H6. Word of mouth learning is the main source of spreading feedbacks about technology use; consumers are made aware of the benefits and cost of technology through personal and virtual word of mouth learning. The influence of perceived cost ( $\beta = 0.058$ ,  $p = 0.24$ ) and perceived trust ( $\beta = 0.051$ ,  $p = 0.341$ ) were confirmed insignificant. Hence, the hypotheses H4, H5 were rejected. Retailers using mobile payments are mostly young business people and familiar with the cost and benefits of digital technologies. They might be confident about their skills and experience to avoid fraud services. They might also trust that mobile payment services have some features to protect users' security and save their processing and investment-related costs. Hence, the merchant's intention with mobile payments is directly and indirectly

**Table 7** Effect of perceived experience as a mediating variable

Perceived Experience as a mediator	Without mediator	With mediator	Supported
H7: WOM-> INTN	.328( $p < 0.01$ )	.325( $p < 0.01$ )	Yes

Source: Author's Survey

influenced by some other factors, such as perceived ease of use, perceived usefulness, perceived experience, and word of mouth learning. We also assessed the mediating effect of perceived experience on the relationship between word-of-mouth learning and intention to use (Table 7). Firstly, we tested the effect without including a mediator, and word of mouth learning positively influences the merchant's intention to use ( $\beta = 0.328$ ;  $p < 0.001$ ). In the second step, model was run with perceived experience as a mediator with standardized direct effect ( $\beta = 0.325$ ;  $p < 0.001$ ) and standardized indirect effect ( $\beta = 0.057$ ;  $p < 0.001$ ) on intention to use. This accepted our hypothesis H7 and supported the perceived experience of a merchant, as a mediator with variance accounted factor (VAF) calculated as 15%. Here we conclude that the perceived experience mediates the impact of word-of-mouth learning on a merchant's intention to use by 15 percent variance.



**Table 8** Effect of perceived experience as a moderating variable\*

Effect	PEXP LOW (n = 123)			PEXP HIGH (n = 188)			t-Student	Differences
	BETA	S.E	p	BETA	S.E	p		
H8: WOM->INTN	.191	.111	.032	.576	.065	.000	-4.27	Yes

\*Chin (2000) developed a multi-group analysis according to the following formulation

Furthermore, to examine the moderating effect of perceived experience, we followed two approaches. At first, we calculated the interaction effects of perceived experience in the relationship between WOM and intention ( $\beta = -0.667; p < 0.05$ ). This confirms the significant moderating impact of perceived experience between WOM and intention (See Table 6). The moderating effect of perceived experience is further explained with the help of an interactive plot (See Fig. 2). The result explains that the positive effect of WOM learning on merchants' intentions can be reduced with a bad experience. An existing user with poor experience spreads negative word of mouth about a service which will affect merchants' perception to use the service in the long term (Li 2018) (Table 7).

To further confirm the moderating effect of perceived experience, we used an improved student's t-test for independent samples and performed a multi-group analysis (Lee et. al., 2000). The findings of the result are explained in Table 8. The result shows that there is a moderating effect of perceived experience on word-of-mouth learning and eventually influences a user's intention to use. In this case, significant differences are observed between a higher level of perceived experience ( $\beta = 0.576; p < 0.001$ ) and with a lower level of perceived experience ( $\beta = 0.191; p < 0.05$ ). Hence, the level of perceived experience does moderate the suggested relationship; this implies that with high-perceived experience, users will spread more positive word of mouth feedback about mobile payment services and will be more intended to use and adopt them. This accepted our hypothesis H8 and supported previous studies' findings (Duarte et al. 2018; Liébana-Cabanillas et al. 2021). Figure 3 explains the results of all the proposed hypotheses.

$$H_o : B_1 = B_2$$

$$t = \frac{B_1 - B_2}{\sqrt{SE_1^2 + SE_2^2}}$$

where  $B_i$  represents path weights and  $SE_i$  is the standard error of the structural model path.

## Discussion and conclusions

### Discussion of the results

As proposed, perceived ease of use and perceived usefulness have a significant positive influence to measure the perceived experience with mobile payment services. The findings support the existing literature on MPS that confirmed high influence of perceived ease of use and perceived usefulness on user's perceived experience to use MPS (Singh et al. 2020; Khan et al. 2021; Mishra et al. 2022). According to Singh et al. (2017), Indians are multitasking and always look for innovative and value-added services. When they find a technology that improves their efforts, provide convenience and best shopping experience, they are likely to use it (Talwar et al. 2021). This supports our hypotheses H1 and H2. The results are in line with studies on the use of mobile payment services in both developed and developing market contexts including the USA, Spain, Malaysia, India, and China (Tan et al. 2017; Liébana-Cabanillas et al. 2021; Singh et al. 2020; Sinha and Singh 2019). Also, recent studies have shown the high usage of MPS during pandemic times due to lockdown and other physical services restrictions (Moghavvemi et al. 2021; SUNARJO et al. 2021; Tripathi et al. 2021). Next, the study confirmed the strong positive influence of perceived experience on variable intention, confirming H3. According to Phong et al. (2018), perceived experience has a direct association with behavioral intention, which is developed on in-store user's experience and services offered by a merchant. The results are consistent with the findings of Hayashi & Bradford (2014) study that was

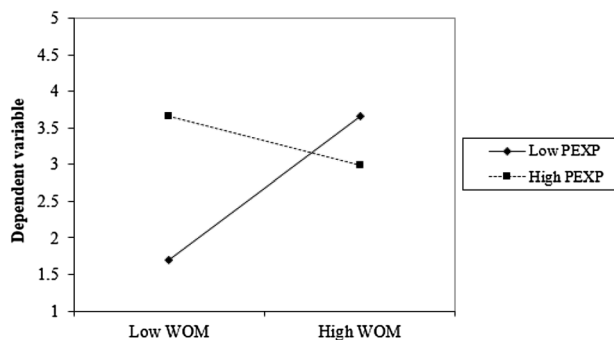


Fig. 3 Structural model





conducted in USA using 20 large and midsize merchants. In COVID context, few significant studies indicated that mobile payments help merchants to create deals, collect feedbacks compare prices, collect product information and feedbacks online that eventually increases user's experience (Giantari et al. 2021; Sosanuy et al. 2021). Hence, merchants are likely to adopt mobile payments to receive online convenience (Mishra et al. 2022; Zhao and Bacao 2021).

The findings of the study indicate the non-significance of perceived cost and perceived trust, rejecting hypotheses H4 and H5. According to Ullah and Sepasgozar (2020), perceived cost is vital for merchants during the implementation of an online service. The cost impact gets reduced after the implementation of technology. Moreover, in few recent years, government has offered numerous discounts and waivers to merchants for using the digital mode of transactions before and post COVID 19 (Mishra et al. 2022), that makes adoption of MPS economical to the merchants (Gupta 2018; Willis et al. 2021). Further, Ho et al (2017) explained that trust is not an issue but refers to user's perception and tendency to take the risk. Tan et al. (2017) stated that the trust issue disappears when a user gains sufficient information and experience to handle a service and avoid fraud transactions. This also enhances user's confidence to take risk and to be less concerned with trust issues when using a new technology (Huynh et al. 2021; Lin and Xu 2021). Few previous studies have showed that cost and trust are not the major concerns for the merchants (Altwairesh and Aloud 2021; To and Trinh 2021).

Remarkably, word of mouth learning was significant on a merchant's intention to use, which supported our hypothesis H6. Various earlier researchers have examined the significance of word of mouth on user's experience with mobile payment services (Mallat & Tuunainen 2008; To and Trinh 2021; Wang et al. 2021). Talwar et al. (2021) found a strong association between the word of mouth and intention to adopt a payment technology during COVID-19 pandemic outbreak. The results highlighted that both existing and new users of a particular technology use word of mouth communication for sharing their views, listening and reviewing the opinions of existing users and discuss feedbacks that influence behavioral outcomes and decision making. Verkijika and Neneh (2021) discussed about the positive and negative impact of word-of-mouth communication that is influenced by user's experience and awareness about a service.

In the current study, the outcome of word-of-mouth learning was significant and was mediated and moderated by the perceived experience of a merchant. The role of a moderator is to understand which subgroups (high or low perceived experience merchant's groups) are profited by the association, while a mediator helps us to understand the impact of perceived experience as an intervention in the association between word of mouth and intention. With regard to the

mediating effect of perceived experience, the study confirmed the significant mediation of perceived experience in the relationship between word of mouth and intention. This indicates that positive or negative feedbacks influence good or bad perceived experience of users respectively, which is crucial for the adoption a service (Kuppelwieser et al. 2021). Few recent studies indicated the intervening effect of perceived experiences on intention to use a technology (Kuppelwieser et al. 2021; Sosanuy et al. 2021). This implies that along with word-of-mouth learning, perceived experience also influences behavior intention of users. Moreover, few studies also suggested that perceived experience is through word-of-mouth recommendations; such recommendations improve perceived experience of consumers that influence intention (Mukerjee 2018; Giantari et al. 2021).

Finally, moderating results show that the influence of word-of-mouth learning on intention is stronger for high perceived experience merchants than low perceived experience. These findings are consistent with extant literature on users experience and revealed that user with high perceived experience spreads more positive word of mouth about technology than a user with low perceived experience, which motivates merchants to adopt it (Altwairesh and Aloud 2021; Kang et al. 2021). According to Roy et al. (2017), user's experience level (low or high) has a direct influence on attitude that improves feedbacks and information sharing. These recommendations are referred by existing and new users that influence their adoption intention of a technology (Saxena et al. 2021). Similarly, Lee (2019) indicated the lower influence of risk and higher influence of feedbacks in the high usage experience group in comparison to low usage experience group.

## The conclusion of the study

Retailers understand the need for mobile payment services by consumers for convenience and a great shopping experience, which in turn increase consumer's engagement and loyalty to the retailers. This leads to the intensity to realize the motivation to use mobile payments to shop at the retail point. In conclusion, the study proposed a unique cohesive model by including TAM-based psychological factors and integrating with variables perceived experience, perceived cost, perceived trust, and word of mouth learning on the merchant's perception. The findings of our conceptual model confirm that the perceived experience is the most substantial variable that influences a merchant's acceptance. Word of mouth learning is the second most important construct, which highlights the relevance of user's feedback and opinions to others to adopt a technology. An additional impact of the study is the importance of perceived experience and its mediation and moderation effects in the relationship between word-of-mouth learning and merchant's intention.



Merchants are willing to adopt mobile payment services due to their high perceived experience while doing the business. The current study identifies factors, which are important to motivate merchants to incorporate mobile payment services in the business process and this will help practitioners to increase the adoption of services in the coming future.

### Theoretical and managerial implications of the study

The current study confirms that the extended model is relevant to the study of merchants' behavioral intentions on the use of mobile payments (Huynh et al. 2021; Willis et al. 2021). The study contributes by including word of mouth learning and the perceived experience in the same model. With this, we can outline the moderating and mediating result of perceived experience on the influence of word-of-mouth learning on the merchant's intention to use mobile payments. Various past studies have used constructs like word of mouth and perceived experience, but there has not been a study in which they were used together in the context of merchants (Shaw 2014; Roy et al. 2017; Altwairash and Aloud 2021; Kang et al. 2021). By inclusion of both mediating and moderating effects of perceived experience, a study provides a better illustration of the construct because mediation result shows the intervention and moderation effect determines the influence of low and high perceived experience of merchants on their behavioral outcomes to use MPS. The indirect influence of perceived experience can be further explored to various groups of users. The study used the covariance SEM method and used important techniques like common method bias, the variance accounted factor, multi-group analysis to confirm the results in the adoption of mobile payment services.

From the managerial perspective, a better understanding of variable perceived experience which is influenced by factors perceived ease of use and usefulness will help payment companies to redefine their marketing strategies and offer a system, which is convenient and perceived as valuable to the merchants. Next, moderating and mediating effects perceived experience between word-of-mouth learning and intention also offers few important implications. Nowadays, mobile companies are using various social platforms to promote and enhance the use of mobile payments (Chen et al. 2021). They must think of promotional strategies using word of mouth referral programs, creating informal learning groups by using online and offline social platforms (Shaw 2014). This will help merchants to be aware of the services and benefits of service through WOM by existing and new users. The findings will increase the adoption of technology by merchants. Also, along with word-of-mouth recommendations, perceived experience of users should be considered by firms and payment providers when promoting MPS. In

fact, perceived experience can be enhanced through WOM recommendations, firms need to focus on these areas.

Mobile payment technologies are gaining acceptance among the small and big retailers as they are used and preferred by the consumers (Jiang and Stylos 2021; Santosa et al. 2021). The study suggests payment firms review existing payment applications and their features. These features need to be reviewed based on the feedback of existing users and compared with competitors to develop more customized and personalized services for enhancing perceived experience (Kang et al. 2021). In addition, the study offers few implications to policymakers and the government. The study suggests designing favorable government policies including incentive plans, subsidies, cashless payment infrastructure, user's penetration framework, financial inclusion policy, and other initiatives for merchants to run a sustainable business with low cost. No significant impact of cost and trust indicate less concern of merchants about these dimensions, and this can be used by firms for the promotion of MPS to new users during crisis times.

### Limitations and future scope of research

The study offers a few suggestions for future researches. First, we conducted the study in the context of India and hence, may not apply to other countries as business situations are dependent on the national laws, procedures, and government regulations. Future studies may compare different business environments prevailing in different countries and the role of payment technologies may be determined. Second, the current study lacks in reviewing the nature and size of the business in which merchants are operating, which may influence the implementation of mobile payment services. This allows future researchers to find out the effect of the nature and size of business on the suitability of mobile payment applications (Tan & Ooi 2018). The study showed the significant impact of the perceived experience of a merchant; however, the study lacks in comparing the perceived experience of consumers and merchants with mobile payment services. We suggest conducting a comparative study on both parties to discuss the results in detail (Hayashi & Bradford 2014; Xu & Du, 2018; Mishra et al. 2022). Future studies may differentiate between personal and virtual word of mouth and their effect can be measured on the adoption of technology services (Talwar et al. 2021). The future study may also review the effect of demographics such as gender, age, income, business size by the number of stores or employees, nature of business, etc. with a large sample of respondents to refine the results. Also, to further refine the findings of common method bias, future studies may use techniques such as time lag survey, using latent marker variable (MLMV) technique, social desirability scale, VIF values and others.



## Appendix I

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Do you like to use technology services in your business?

Do you feel that the consumers prefer mobile payments? Why do you think they like to use it?

Can you identify some factors, which may affect consumers' mobile payment adoption?

Are these factors important to you as well?

You like to invest in mobile payments usage and adoption. Why do you like it?

We have created a list of factors; please identify the most important factor(s) according to you

Are those factors mentioned by you are influencing the technology adoption strongly?

Mention few other factors, which you think are important from user's perspective

What is your experience with mobile payment services (if any)?

What generally you hear (good or bad) about the use of mobile payments?

*Few key semi-structured questions asked in the discussion*

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