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Go Digital! Determinants of Continuance Usage of Mobile Payment Apps: Focusing on the Mediating Role of Gamification

Garima Malik[1,*], Dharmendra Singh[2]

[1,*]Amity Business School, India, gkmalik@amity.edu
[2]Modern College of Business & Science, Oman, dharmendra@mcbs.edu.om

Abstract

Background: *COVID-19 spread over the last two years has been instrumental in shifting physical banking transactions to mobile-based banking transactions. Recently, M-payments have dominated online and point-of-sale (POS) transactions in the Asia-pacific region. Therefore, there was a need to study the factors influencing M-payments. This research has been conducted to determine the significant factors influencing the usage* and continuance usage *of M-payment apps in an emerging country and particularly how gamified features enhance* the usage of M-payments apps.*is study is based on the perspectives of the Unified theory of acceptance and use of technology (UTAUT2) and information system success (ISS) theory, and it adds three new determinants—trust, gamified features, and continued use of mobile payments to better explain and forecast users' behavioral intentions and continued use of mobile payment applications (M-payments apps).*

Method: *The research has employed two studies on sample data from young users of M-payment apps (n=898), the dataset was analyzed through structural equation modelling for mediation and moderation analysis in study one. The second study was grounded through Vignette experiments to analyze the effects of the degree of gamified features on the continued usage of M-payments.*

Results: *The results reported that behavioral intention to adopt, and usage of mobile payments are significantly mediated by gamified features and gamified features are partially mediating continuance usage of M-payments. Trust is the key to enabling continuance usage amongst the users of M-payments. These findings extend the understanding of users' continuance intention in the context of payments apps.*

Conclusion: *This study would be helpful in presenting insights for the M-payments service providers and the associated banks to develop strategy for the continuance usage of mobile payment apps.*

Keywords: M-payments, Gamified Features, Continuance Usage, System, Information Quality.

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Introduction

COVID-19 has devastated the economies and financial markets at the global level and the diffusion of the usage of mobile payments has proved to be the positive side of this pandemic. There are two major reasons behind the enhanced use of mobile payments. Firstly, mobile-based payment systems come with the ease to make transactions during quarantine or lockdown periods and hence can act as an instrument ensuring better social distancing. Secondly, companies offer their major services on online platforms, and consumers are left with no other option but to explore the online payment mode. Special emphasis has been created on the usage of online-based payment systems to avoid physical contact for retail banking operations (Ananda et al., 2020 Giovanis et al., 2018; Mu & Lee, 2022). In the last decade, rapid development in technology has been witnessed, especially in the mobile domain (Shang & Chiu, 2022; Vargo et al., 2021; Verkijika, 2020).

The development of mobile payments(M-payments) has brought notable changes in consumer behavior and the way of doing business. (Anshari et al., 2021; Choudrie et al., 2018; Hossain & Nagai, 2019). M-payments is an aid that provides users with a facility to store credit or debit card information, make payments against their purchases, and transfer money to their contacts or request money from their contacts (Baumann et al., 2005; Chawla & Joshi, 2019; Sinha et al., 2018; Zhou, 2011). However previous studies simply focused on developed economies like the USA (Leong et al., 2020; Shin & Lee, 2021), Japan (Amoroso & Magnier-Watanabe, 2012) Australia (Mondego & Gide, 2020), Germany (Wirth & Maier, 2017) Cameroon. (Wamba et al., 2021). Only a few studies (like Singh & Matsui, 2017; Zhou, 2013) have focused on emerging economies like India and China. Despite this growing trend and the potential role played by M-payments still banking literature lacks integrated models that explain the continuance usage of M-payments in the context of an emerging economy that has different terrains and designs. Gamification is recently a new paradigm to engage customers and motivate them to take part in company-driven activities. Recently, the progress of e-commerce has created interactive and user-friendly websites and applications and enhanced the use of innovative techniques that leverage customers for their active participation through “gamification” (Huotari & Hamari, 2017; Rodrigues et al., 2019). The gamification concept is the use of game mechanics and design elements in the non-gaming context and has become a fast-emerging practice to market products or services (De Canio et al., 2021; Hsu, 2022). In the context of marketing, banking, and digital payment services where a certain degree of persuasion, motivation, and manipulation is required, and thus game design elements have the potential to engage the customers which turns in the continuance usage of services (Abou-Shouk & Soliman, 2021; Harwood & Garry, 2015; Helmefalk, & Marcusson, 2019). This research makes the three unfold contributions. This study first investigates the factors that led to the adoption and continued use of M-payments. Test the impact of trust as a moderator and gamified features as a mediator on the use and continued use of M-payments. To capture the linear-nonlinear and non-compensatory relationships between the exogenous and endogenous components, the study also employs an SEM-Artificial Neural Network (ANN) technique. Multiple regression analysis (MRA) and structural equation modelling (SEM), two common linear statistical techniques, frequently fall short in modelling the complexity of human decision-making processes because they can only consider linear models (Chan et al., 2012; Sim et al., 2014).

According to Leong (2013), the ANN technique may uncover complex non-linear and compensatory interactions in addition to sophisticated linear correlations and can do so without relying on any assumptions about the distribution of data, such as normality, linearity, or homoscedasticity (Leong et al., 2019; Tan et al., 2014). This strategy makes it easier to understand the complexity of consumers' decisions about their resistance to mobile payments. Thirdly, the study added the ISS to the UTAUT2, extending it according to the recommendations on contributions by Bergh (2003). As a result of the extended model's ability to provide a more holistic and comprehensive understanding of what motivates the adoption

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and continued use of m-payments, the effects of service quality and information quality on M-payment adoption may be better understood. Hence, a study is needed to investigate the following research questions:

RQ1. What are the factors influencing the usage and continuance usage of M-payments apps?
RQ2. How do gamified features enhance the usage of M-payments apps?
RQ3. How does 'trust' for M-payments effectively moderate the relationship between the usage and continuance usage of M-payments?

The study has also been structured as follows to contribute to the pool of knowledge in banking and technology: Section 2 explains the literature review and the status of mobile payments in India, and section 3 is about the study's conceptual framework and hypothesis development. In the next section methodology, the various constructs have been discussed and explained. Section 5 highlights the selected research techniques, pretesting process, and results. In the last two sections, there is a discussion, and implications followed by a section on limitations and future research.

Literature Review

Various research has been done on the factors affecting the quick acceptance of new technologies by individuals (Dwivedi et al., 2017; Oliveira et al., 2016). The most popular and widely acknowledged method for embracing new technology is the unified theory of acceptance and usage of technology (Venkatesh et al., 2003). Performance Expectancy (PE), effort Expectancy (EE), social Influence (SI), and facilitating condition (FC) are the four behavioral intentions that were added to the TAM model to create the UTAUT model, which influences user behavior. PE stands for expectations expressed by customers on the performance of the M-payments system, which would increase their frequency of payment by managing their time, money, and effort. The second EE variable measures consumer expectations for the M-payments system's simplification, which is defined as the system's ease of use (Abdinoor & Mbamba, 2017). The third variable SI reflects social influences on customers, such as recommendations from friends, family, and managers, which may affect their attitudes and choices about the adoption of M-payments. The predictive potential of UTAUT has been shown in recent studies on the adoption of information technology platforms, such as online banking (Le et al., 2019); tablets (Magsamen-Conrad et al., 2015); and mobile payments (Chawla & Joshi, 2019).

UTAUT was only discovering the behavioral elements that affected technology adoption intentions but did not consider the environment of consumer use. Venkatesh et al. (2012)'s UTAUT2 considers both organizational and consumer usage contexts, which are crucial for comprehending how technology is adopted. The three new components in UTAUT2 are as follows: Price Value: Users are responsible for the costs, which are not only significant but may also control consumer adoption decisions; Hedonic Motivation: the pleasure or delight experienced in using a technology (Brown & Venkatesh, 2005). The use of technology is directly influenced by habit, and/or the strength of the relationship between BI and technology use is weakened or constrained by habit (Venkatesh et al., 2012). A few major research employ UTAUT2 to gauge participants' intentions to make use of M-payments technology (Sharma et al., 2018; Sivathanu, 2018).

Mobile wallets are a new type of mobile payment system designed to take the place of more conventional forms of payment (Sumathy & Vipin, 2017). According to certain authors in the research, customer trust and transaction security have a major impact on customers' intentions to use mobile payments regularly, or their perception of the payment system's credibility. According to Zhou et al. (2018), integrated security features, a feedback mechanism, and trust were used to investigate customers' ongoing m-payment innovations.

The effect of demographic factors on the adoption of new technologies has been examined in studies (such as Chong, 2013; Shaikh & Karjaluoto, 2015). Mobile payments have been impacted by performance expectancy (PE) and trust, and PE and trust are reliant on the M-payments system's quality (Zhou, 2014). Trust in m-payments transactions may affect trust in the online payment system (Yu & Qian, 2018). The UTAUT2 model has been used successfully to identify the causes of technological adoption (George & Sunny, 2021; Singh et al., 2020; Soodan & Rana, 2020) have recently used the UTAUT2 model to examine the factors affecting the acceptance and usage of m-payments in the Indian setting. DeLone and McLean's (2003) ISS model, which they first proposed, is another widely recognized hypothesis for describing post-stage usage behavior in addition to the UTAUT2. "System quality (SQ), information quality (IQ), IS use, user happiness, individual impact, and organisation impact" are the six factors that make up the IS success model DeLone and McLean (2003) expand the ISS model in subsequent analysis by including one more variable: service quality (SQ). According to earlier research, intelligence and social skills are key determinants of any information technology platform's performance (e.g., Gao et al., 2015; Teo et al., 2008; Veeramootoo et al., 2018). As a result, the conceptual framework of the current study includes the two constructs—IQ and SQ—that are most pertinent in the context of mobile payments. If an M-payments provider offers top-notch data and services, it will encourage a consumer to use M-payments going forward.

Even though India and China account for more than two-thirds of all mobile payment users worldwide, most studies on the uptake of m-payments come from industrialized nations (George & Sunny, 2021). After demonetization on November 8, 2016, internet payments, and particularly m-payments, have significantly expanded in India. Due to the ongoing encouragement and push given by the Indian government to embrace non-cash transaction habits, digital payments have accelerated after demonetization in all major and minor Indian towns. Given that mobile payments are simpler to use than credit or debit cards, middle-class consumers in India like them more. Mobile payments are preferred over other digital payment methods in India due to their convenience, security, and usability. One of the main factors boosting the growth of the mobile payment market in India is the expanding smartphone sales, which coincide with the rising internet penetration (Forecast on Indian mobile payment market, 2022-2027). Because mobile payments are growing more and more popular in India for these reasons—and because so few studies have been published with solid findings—a study on mobile payments seems justified.

Payment security, trust, and grievance redressal mechanisms have been shown to be important in the Indian context for enhancing user satisfaction with electronic payments (Chawla & Joshi, 2019; Kumar et al., 2018). Although the previous research helped to advance our understanding of the primary predictors for the adoption of m-payments in India, there are still a number of additional pertinent factors, such as the quality of the server, the accuracy of the information, and the contribution of gamification techniques to the use and continued use of mobile payments, that warrant further discussion and explanation in the Indian context. Additionally, it is necessary to use sophisticated and reliable statistical methods like structural equation modelling (SEM) and artificial neural networks (ANN) to empirically assess the most important variables influencing the intention and usage of mobile payments in India.

State of Mobile Payment Apps in India

Between 2018 and 2021, digital payments rose by almost 200 percent in India. Cash accounted for 37.1% of all in-store transactions in 2021, followed by digital payments (24.8%). However, by 2023, when they are anticipated to account for 30.8 percent of POS transaction value, digital payments are forecast to surpass cash as the most common in-store payment option (Global Payments Report 2022 by financial products and services company FIS). With the help of a unified payments interface (UPI) and mobile payment apps, India has been ranked as a leader in online payment transactions. 2022) (Benchmarking India's Payment

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Systems). The National Payments Corporation of India (NPCI) is the Reserve Bank of India's (RBI) specialized section that manages retail payments and settlements in India and runs the UPI network there.

The first mobile payment apps in India, like Paytm, provided cashless payment services through e-payments, which required funding rather than a direct bank transfer to the recipient of the funds. A mobile wallet or e-wallet is a digital equivalent of a physical wallet that must be refilled or added to purchase a variety of goods and services. As an alternative, the financial transaction can be carried out by connecting a person's bank account to digital payments. When compared to card-based payments, mobile payment is secure and easy to complete. Mobile wallets are a type of prepaid payment instrument (PPI) that facilitates the purchase of goods and services from third parties. In India, there are three different kinds of mobile wallets: closed M-wallets, semi-closed M-wallets, and open M-wallets. Closed M-wallets, such as Ola Money or Amazon Pay, are issued by businesses to be used exclusively for purchases from those businesses. It does not permit the ability to withdraw cash. Individuals can purchase goods and services from listed retailers and businesses like Paytm and Airtel Money using semi-closed wallets. Open wallets provide all the advantages of semi-closed wallets and allow for money withdrawals from banks and PayPal. Mobile payment users are moving away from payments-based payments to UPI-based mobile payments after the debut of UPI-based payments in India in April 2016 and the launch of the government-supported payment software, BHIM (Bharat Interface for Money), in December 2016. (S & P Global Market Intelligence, 2020). Recent digital payment trends in India show that the UPI platform has been quickly outperforming e-wallets in terms of both value and volume of transactions. Mobile payment apps based on UPI offer an advantage over m-wallets because UPI allows for direct bank-to-bank transfers, whereas m-wallets serve as a middleman between the seller's and the buyer's bank accounts. UPI apps are far superior to wallet-based apps in terms of convenience and security because only one UPI app is required to fulfill a user's need for money transfers into his or her bank accounts or for third-party payments, negating the need to download several banking apps. The main mobile payment apps available in the Indian market include Paytm, PhonePe, Google Pay, BHIM, and Amazon Pay (S & P global market intelligence, 2020).

Theoretical Framework

The acceptance of IT-enabled services has made much enthusiasm from both industry and the scholarly community. To have a detailed understanding of the adoption and utilization of services through the apps and M-payments the different theoretical viewpoints (e.g., “TAM, TRA, TPB, TTF, UTAUT, and ECM”) have evolved. Comparative models and their augmentations were examined for selection and use for internet services and mobile app-based services (Alalwan et al., 2017; Hallikainen et al, 2019). Although previous research has been focused on the adoption of mobile applications (Arora et al., 2020; Kumar et al., 2018; Mehra et al., 2021). However, there is a paucity of literature on the adoption and continued usage of M-payments through gamified customer engagement. Gamified marketing strategies are used by marketers to enhance customer brand engagement and loyalty (Xi & Hamari, 2020). The model proposed in this study is based on the UTAUT2 and ISS theories and explains both the adoption and continued use of M-payments. This study considered the nine important latent factors (Figure 1) that can directly affect consumers' intentions to embrace and use M-payments. Further Gamified features and trust have been added to the model to get a strong theoretical base on examining the adoption and usage of M-payments, which leads to continuous usage.

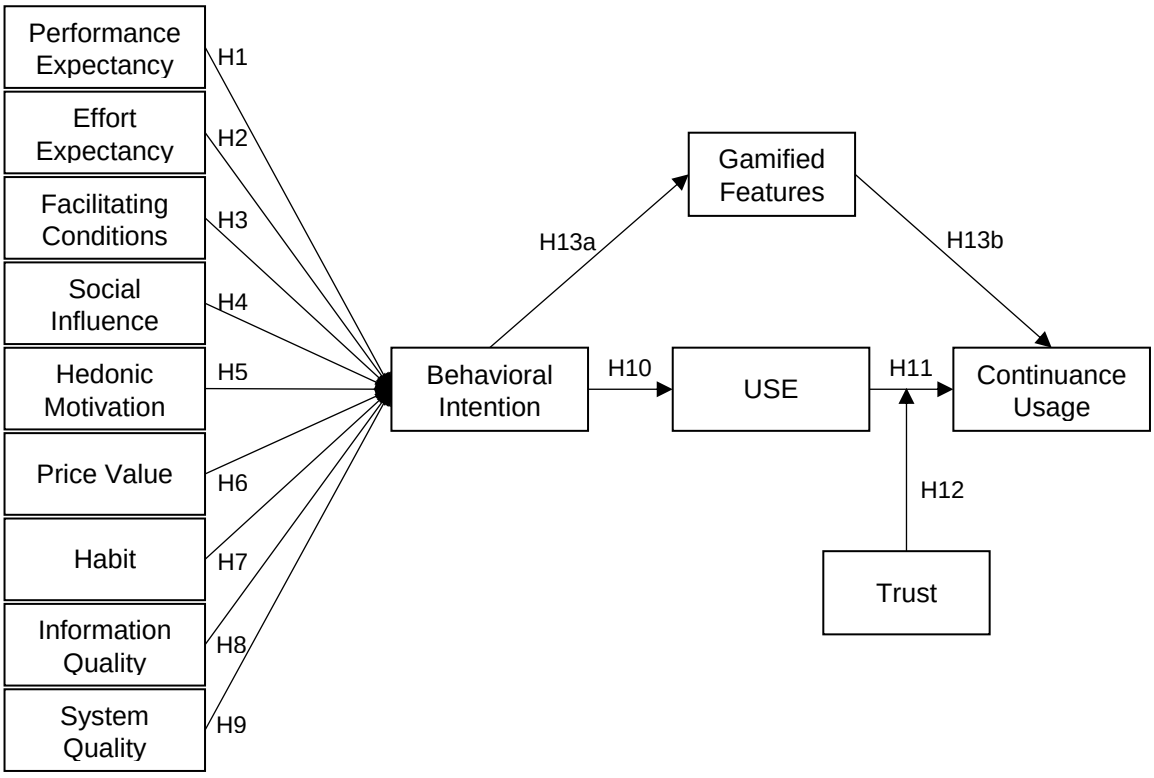

Figure 1 – Conceptual Framework

Hypotheses Development

The conceptual model is designed to express the association between the variables to outline the determinants of acceptance and continuance usages of M-payments. PE is explained as "*the degree to which an individual believes that using the system would help them in improving job performance*" (Venkatesh et al., 2021, p.159). If customers believe a new system will save more time and effort than existing ones do, they are more likely to react favourably and intend to use it. PE has been proven in many studies to have a significant effect on consumers' behavioral intention while considering m-commerce (Dagnoush & Khalifa, 2021; Marinković et al., 2020), mobile internet (Venkatesh et al., 2012) and m –banking services (Thusi & Maduku, 2020). Therefore, the users of mobile payments perceive the benefits of use in the future, they will choose M-payment instead of traditional payment. Thus, the following hypothesis is proposed:

H1: Performance Expectancy is a significant predictor of behavioral intention for adopting M-payments.

EE is defined as "*the degree of ease associated by consumers with the use of technology*" (Venkatesh et al., 2012, p.159). Moreover, effort expectancy presents the same kind of benefits as perceived ease of use in TAM (Venkatesh et al., 2003). In other words, this can be understood as the efforts a user puts to use the apps. The other associated variable for determining effort efficiency are the friendly usage of smartphones and the easy accessibility of the internet. Customers using m-payments must execute all payment processes on their own, without assistance from service providers. Therefore, the degree to which a client believes using M-payments is simple and easy could influence their inclination to utilize them. Effort expectancy is a proven crucial predictor for BI in previous studies such as internet banking (Chauhan et al., 2022; Rahi, et al., 2019), mobile banking (Farah et al., 2018) mobile applications (Iranmanesh et al., 2022), m-payments (Upadhyay, et al., 2022) and smart

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booking apps like ride-hailing and tourism apps (Kameswaran et al., 2018). EE has been an important predictor for BI and thus the following hypothesis has been framed:

H2: Effort Expectancy is a significant predictor of behavioral intention for adopting M-payments.

Facilitating conditions conceptualize as "*the degree to which an individual believes that an organizational and technical infrastructure exists to support the use of the system*" (Venkatesh et al., 2003, p.453). Facilitating conditions dealt with external resources (time, money, and effort) and the technological resources that are needed to facilitate the performance of a particular behavior. Although for getting the accurate and efficient use of M-payments consumers also need a certain type of skills and looking for a supportive infrastructure (Baabdullah et al., 2019; Sobti, 2019). In the case of M-payments to operate the other critical factors are high-speed internet and the android-based smartphone, the absence of which may lead to the non-usage of the said app. To guarantee that customers receive high-quality service, human support is also essential in contact centers, delivery, and customer service. Researchers in information technology and digital marketing have thus discovered that facilitating conditions have a significant influence on customers' actual usage behavior as well as their intended usage behavior (e.g., Khalilzadeh et al., 2017; Verkijika, 2018). Thereby facilitating condition stands as an important construct to get a certain level of infrastructure support and initial phase of training for adopting and using the M-payments services that would be an excellent forecaster of behavioral intention (Alalwan et al., 2017; Chawla & Joshi, 2020). Hence, the following hypothesis was formulated:

H3: Facilitating conditions are a significant predictor of behavioral intention for adopting M-payments.

Social influence (SI) is defined as "*the extent to which consumers of technology perceive that people who are important to them (e.g., relatives, friends) think they should use the technology*" (Venkatesh et al., 2012, p.159). SI indicated the impact of the peer groups that would further be classified as professional, social, and personal on the behavior of an individual (Alalwan et al., 2019; Rana et al., 2015). Two important theories of marketing; the theory of reasoned action (TRA) and the theory of planned behavior (TPB) as developed by Ajzen and Fishbein and Ajzen emphasize on the subjective norm that considers the beliefs of a person that affects the adoption of a system, moreover, is equivalent to SI (Venkatesh et al., 2003). Customers are more likely to return to their social network either to learn more and broaden their awareness or to receive social validation for choosing to utilize a new system (Khalilzadeh et al., 2017; Verkijika, 2018). Previous studies on the adoption of mobile learning adoption (Al-Adwan et al., 2018) and online ticket procurement for low-cost carriers (Jeon et al., 2019) underpinned the positive relationship of SI with behavioral intention, which was proposed and confirmed by Venkatesh et al. (2003). Thus, the following hypothesis is proposed:

H4: Social Influence is a significant predictor of behavioral intention for adopting M-payments.

Hedonic motivation is conceptualized as "*the fun or pleasure derived from using a technology, and it has been shown to play an important role in determining technology acceptance and use*" (Venkatesh et al., 2012, p.161). Therefore, these sensations of enjoyment may be related to how innovative and advanced systems are used (Van der Heijden, 2004; Venkatesh et al., 2012). Indeed, mobile apps increasingly assume a significant role in people's lifestyles globally. The ease of not carrying the cash and payments in the pockets and the easy availability of ready cash as and when required has enabled a lot of fun in using the M-payments. Notably, the difficulty in managing the coins and currency change while paying for nits and bits also has enabled the user to adapt to the M-payments wherein the user can spend and transfer the cash or buy anything without carrying the cash and currency change. In the domain of IT and IT-enabled services, hedonic motivation plays a very important and significant role in terms of creating utility, fun and pleasure for adopting and using the services (Alalwan et al.,

2015; Brown & Venkatesh, 2005; Kameswaran et al., 2018; Khatimah et al., 2019). Thus, as per the above discussion following hypothesis is proposed:

H5: Hedonic motivation is a significant predictor of behavioral intention for adopting M-payments.

The price value (PV) is an important and crucial predictor of the usage of applications and payments (Rabaa'i, 2021). As the customers are price sensitive and the banking body is also governed by the regulatory authority eventually based on the cost and price, customers will usually take the final call to opt for the IT enables services offered by their respective banks. (Zeithaml, 1988). In the present study, PV is defined as "consumers' cognitive trade-off between the perceived benefits of the applications and the monetary cost for using them" (Dodds et al., 1991; Venkatesh et al., 2012). Customers are also expected to examine the costs of using M-payments vs more conventional methods of payment. In the case of M-payments users get an option of getting some cash-back or reward points which encourages the user to use the M-payments for doing any transaction. Moreover, the transaction fees are also not levied to a certain amount when the bank is charging fees for transferring money from one account to another. Here the price value encourages the user to adopt M-payments. In the context of behavioral intention, PV can be positive or negative depending on the assessment of users based on the perception and expectations in terms of monetary value. In UTAUT 2 model facilitate condition consisting of (network, smartphones, Wi-Fi, and the availability of telecom service providers) to run the technologically oriented services could attach customers further financial cost (Baishya & Samalia, 2020) Thus the following hypothesis is proposed:

H6: Price value is a significant predictor of behavioral intention for adopting M-payments.

Habit is conceptualized as "*the extent to which people tend to perform behaviors automatically because of learning*" (Venkatesh et al., 2012, p.161). Habit could be defined as a person's capacity to act impulsively because of their cumulative learning experiences. People are becoming more dependent on their smartphones, and they frequently use the M-payments that go along with them. Thus, a habit can be seen as the spontaneous action/repeated behavior of a person due to accumulated learning experience (Amoroso & Lim, 2017; Limayem et al., 2007). In the present scenario people who are satisfied with the app's experience are showing their habitual behavior towards such mobile apps (e.g., Amoroso & Lim, 2017; Rana et al., 2017; Sun & Chi, 2018). Regarding mobile payments, habit asserts the repeated use of technology (Alalwan et al., 2018; Morosan & DeFranco, 2016) in the future. Thus, the following hypothesis proposes:

H7: Habit is a significant predictor of BI for M-payments.

The ISS model by DeLone and McLean (1992) is the one that first laid forth the metric of information quality (IQ). IQ is described as "*the accuracy, format, completeness, and currency of the information provided by digital technology*" by Setia et al. (2013, p. 268). "*Information correctness, relevance, sufficiency, and timeliness*" are revealed by IQ tests (Gao et al., 2015, p. 254). The degree to which consumers are satisfied is directly related to their ability to get adequate, precise, accurate, current, and reliable information (Teo et al., 2008; Veeramootoo et al., 2018). The original ISS model by DeLone and McLean (1992) contends that the quality of information influences users' pleasure. Users invest a lot of time and energy in looking up product details, the newest deals, or usage instructions via chatbot e-service. Because IQ is one of the most crucial quality components to measure a system's success (DeLone & McLean, 2003), and because it has a positive effect on BI and the information provided by the M-payments apps should be customized, complete, easy to understand, and well-formatted. (Chung & Kwon, 2009). Inaccurate information will result in a bad user experience: if an M-payments app provided irrelevant, inappropriate, and incomplete, or otherwise erroneous,

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users may need to look for information from other sources, which will take more time and effort on their behalf (Gao et al., 2015). Customers may therefore feel that the business is unable to offer them high-quality service, which could lower their level of satisfaction. In contrast, increasing the pleasure of M-payments users can be achieved by service providers who give consumers accurate, timely, and pertinent information. According to the new ISS model, customer happiness is also influenced by the system quality (e.g., Chung & Kwon, 2009; DeLone & McLean, 2003; Veeramootoo et al., 2018). SQ depends on quick replies and individualized care, which may improve users' satisfaction (Chung & Kwon, 2009; Veeramootoo et al., 2018) and reflect the service provider's reputation, competence, and dependability (Chiu et al., 2022; Gao et al., 2015). As per the above arguments, we hypothesize:

H8: Information quality is a significant predictor of behavioral intention for adopting M-payments.

H9: System quality is a significant predictor of behavioral intention for adopting M-payments.

Behavioral intention is defined "*as the degree to which a person is prompt to accomplish certain behavior*". (Davis, 1989, p.320). Besides that, behavioral intention is the immediate antecedent of usage behavior with the subjective probability of carrying out readiness behavior (Venkatesh et al., 2012). Extant research in mobile enables services like banking, travel, and retail (Arenas Gaitán et al., 2015; Mafé et al., 2010) has established that usage intentions are rational indicators of future system users (Kim & Qu, 2014; Luarn & Lin, 2005). Thus, the following hypothesis is derived:

H10: BI has a significant impact on the use of M-payments.

Use is believed as an immediate antecedent of customer satisfaction which leads to the repeated usage of IT-enabled services (Tam & Oliveira, 2016). There is considerable evidence of the significance of customer satisfaction on repeated use viz., continuous usage (Kuo et al., 2009; Moon & Kim, 2001), which is governed by actual use. Indeed, if a customer is not satisfied with actual use, s/he would be unwilling to repeat use (Kuo et al., 2009) they may discontinue the usage of the services. Within the context of banking and financial previous studies highlighted that the positive impact of usage of service would increase repeated usage (Chung & Kwon, 2009; Kim et al., 2009) when overall satisfaction with services is high. Thus, the hypothesis drawn is:

H11: Use has a significant impact on the continuance uses of M-payments.

Moderating Effects of Trust

Previous Literature has studied the importance of trust in electronic banking and established that trust has an important role in determining consumer decisions related to information exchange and banking transactions (Susanto et al., 2016). However, due to its complexity and difficulty to comprehend in continually changing situations, trust has never been properly defined and articulated (Hanafizadeh et al., 2014). In this study, trust is defined as "*the readiness of one party to be vulnerable to the acts of another party based on the anticipation that the other will perform a specific activity significant to the trustor, irrespective of the ability to monitor or control that other party*" (Mayer et al., 1995, p. 712). Trust is an important factor in facilitating user behavior (Hanafizadeh et al., 2014; Singh & Matsui, 2017). Users having favorable and strong trust in their respective banks are expected to try new and advanced M-payments. Conversely, customers with higher perceptions of risk towards availing of M-payments will be careful about using the services because of perceived loss of confidential information or other financial losses and will hesitate to use or continue using M-payments (Susanto et al., 2016). In a banking context, trust creates a platform for the mutual relationship

between customers and banks (Kesharwani & Bisht, 2012). Earlier research confirmed that trust plays an important role in mitigating perceived risks and facilitating the use and the continuance usage of M-Payments (Shareef et al., 2018). Thus, the following hypothesis is posited.

H12: Trust moderates the relationship between the use and continuance usages of M-payments.

Mediating Effects of Gamified features on M-payments

Gamification become a cutting-edge concept in the marketing field. (Huotari & Hamari, 2012). Gamification can increase marketing effectiveness in consumer markets (Hofacker et al., 2016). Furthermore, gamification does provide scope for collaborative innovation practices among multiple actors (Leclercq et al., 2017). In fact, gamification provides an interactive and participatory, and collaborative environment that tends to create high-quality customer interaction through gamification mechanics (Ind & Coates, 2013; Werbach, 2014; Zichermann & Linder, 2013). Gamification mechanics that may potentially increase customer engagement in firm activities encourage customers to share their knowledge with other customers or even prospective customers of the companies (Gupta et al., 2018). Mobile payments service providers have used various gamified features on their apps to enhance the users' engagements like pay from payments and customers will be entitled to get points and badges further this will develop the customer longevity for using the M-payments. Thus, the following hypothesis posits that

H13: Gamified Features of M-payments mediate the relationship between Behavioural intention and Use

Further, we tested the proposed relationship by employing two studies that are based on cross-sectional and two independent vignette-based experiments.

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Research Studies

In this research, two studies have been carried out to achieve the objectives of our research study and to maintain the consistency of results. The first study was a cross-sectional survey of young users of M- payment apps, which provided us with a comprehensive overview of the current usage of the apps. The second study was a grounded Vignette experiment.

Study 1 Measures

The theoretical and conceptual framework adopted in the present study were tested using multi-item scales adopted from previous studies related to UTAUT and carried out in relation to banking services. There were eleven constructs, and these were integrated into the theoretical research model namely, PE, EE, FC, HM, PV, use, repeated use, trust, gamified features, and behavioral intention to use M-payments. A four-item scale was operationalized to measure PE, EE having four items, FC, HMs having three items four items of repeated usage, and the three items of behavioral intention was adapted from Venkatesh et al. (2003). Three items scale of use has been taken from the study of (Curran & Meuter, 2007). Four items to measure trust were taken from Venkatesh et al. (2011), which convey the trust customers have in M-payments. Finally, to measure the usage of M-Payments, the three items were adapted from Moon and Kim (2001). The five items scale was adopted for measuring the gamified features developed by Kim and Ko (2012). Seven items from Teo et al. (2008) that were modified were used to gauge IQ. We used six items from Roca et al. (2006) to measure SQ.The questionnaire is composed of structured questions, broadly divided into two sections, the first section comprises demographic details of the respondents, and the second is on the usage of M-payments. All the responses to the questions in the second section were based on a seven-point Likert scale. To ensure content validity, the questionnaire was shared with the banking and IT experts, followed by incorporating the recommended changes in the questions. A pilot study was also carried out using a limited sample size of 36 respondents who had used M-payments for more than a year. Their responses helped us in improving the language, length, and format of the scales of the instruments.

Data collection and Procedure

The current study has been executed in two stages, in the first stage literature review on the adoption and on continuance usage of M-payments was conducted to develop the conceptual model which was vetted with the help of in-depth interviews with customers and officials of the service provider. In the second stage, a survey was conducted with the help of a structured questionnaire consisting of two sections. In the National Capital Region (NCR) of India, Mumbai, Bengaluru, and Hyderabad are the four major Indian cities with metropolitan areas where the data collection was conducted. Delhi and the neighboring districts are part of the NCR, a coordinated planning zone, and the region is the leader in the mobile phone market (Business Line on May 28, 2013). Additionally, Hyderabad and Bangaluru are IT centers with a strong information technology (IT) industry and start-up culture, while Mumbai is the financial capital of India. Before initiating the process of data collection, six management graduates of the private university of NCR were trained as interviewers so that they fully understood the context and the content of the questionnaire and if require they could solve respondents' doubts. The present study employs a purposive sampling method to collect data through the survey questionnaire since earlier studies of mobile app adoption also confirmed the use of this method, in both developed and developing countries (Püschel et al., 2010; Zhou, 2011). The sample size consisted of 798 young consumers who had been using UPI-based mobile payments of service providers like (Paytm, Google pay, PhonePe, BHIM, and Amazon pay). The respondents were

approached privately and asked to complete the questionnaire. The finalized study questionnaire was distributed to 950 respondents, and 898 of them completed it, with a response rate of 89.66 percent.

Respondents made up 32.02 percent of women and 67.98 percent of men, according to demographic data. The age group between 20 and 35 years represented 54.96 percent of respondents. The respondents' employment position is generally favorable. About 48.7% of respondents belonged to the service class, 31% to the commercial class, and 19.46% and 1.44%, respectively, were students and retired people (Refer to Table 1).

Table 1 – Respondents Demographics

Respondents (n=898)		**Frequency**	**Percent**
Gender	Male	610	67.98
	Female	287	32.02
Age	Above 30	493	43.81
	30 to 45	318	35.41
	45 to 60	89	9.9
	Above 60	8	0.89
Occupation	Services Class	437	48.7
	Business Class	278	31
	Students	175	19.48
	Retired	8	0.89
Income (Indian Rs.)	Upto 10,000	101	11.24
	10,000-20,000	213	23.71
	20,001-30,000	169	18.81
	30,001-40,000	67	7.4
	Above 40,000	348	38.75

Normality Assessment & Common Method Bias (CMB)

The presence of outliers always leads to biased results; therefore, it is always advisable to ensure the normality of the data (George, 2011). In this regard, the value of the skewness was calculated, and it was found to be between -1 and +1. In this study, Harman's single-factor test was carried out to analyse common method bias. The analysis revealed that a single factor only explained 34.61% of the total variance, which is well below the threshold value of 50%. This result indicates that the data is free from the problem of CMB. Further, Table 2 shows that the values of skewness and kurtosis are within the acceptable range (skewness < ±3 and kurtosis < ±10) (Hair et al., 2016).

Measurement Model

The suitability of the outer model was assessed by the two key metrics; reliability and validity (Hair et al., 2016). The results obtained certified the overall model fit. Moreover, the standard Root Mean Square Residual (SRMR) was also in the range of recommended threshold of 0.08 (Hu & Bentler, 1999) indicating an accepted model. In the paper, Cronbach's alpha, average variance extracted (AVE), and composite reliability (CR) were used to measure the reliability and validity of each construct. As displayed in Table 2, all the values of Cronbach alpha were above their suggested value of 0.7, and AVE for all the constructs was above their threshold value of 0.50 (Hair et al., 2009). All the standardized regression weights were found to be above the cut-off value of 0.6 and were statistically significant with a p-value less than 0.001 (Hair et al., 2009).

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Table 2 – Measurement Model Results		
Construct and measures	**Standardized loading**	**VIF**
PE (AVE=0.73, CR=0.92, α=0.91, Skewness = 0.056, Kurtosis = 0.077)		
"I find M-payment apps useful in my daily life."	.83	2.131
"Using M-payment apps through app increases my chance of achieving things that are important to me"	.87	1.456
"Using M-payment apps helps me accomplish things more quickly"	.81	2.164
"Using M-payment apps increases my productivity"	.79	1.105
EE (AVE=0.74, CR=0.92, α=0.91, Skewness = -1.019, Kurtosis = 1.399)		
"Learning how to use M-payment apps are easy for me"	.84	1.741
"My interaction with M-payment apps is clear and understandable"	.89	1.812
"I find M-payment apps is easy for me"	.89	1.511
"It is easy for me to become skillful at using M-payments"	.80	1.611
SI (AVE=0.75, CR=0.9, α=0.9, Skewness = -0.732, Kurtosis = 0.901)		
"People who are important to me think that I should use M-payments"	.87	1.525
"People who influence my behavior think that I should use M-payments"	.87	1779
"People whose opinion I value prefer that I use mobile booking for M-payments"	.86	1.366
FC (AVE=0.67, CR=0.89, α=0.88, Skewness = -0.607, Kurtosis = 1.155)		
"I have the necessary resources to use M-payments"	.77	1.232
"I have the necessary knowledge to use M-payments"	.86	1.353
"M-payment apps are compatible with the other technologies which I use"	.85	1.149
"I can get help from others when I have difficulties using M-payment apps"	.78	1.467
HM (AVE=0.75, CR=0.9, α=0.9, Skewness = -1.272, Kurtosis = 1.112)		
"Using M-payment apps is fun"	.89	1.236
"Using M-payment apps is enjoyable"	.89	1.581
"Using M-payment apps is very entertaining"	.82	1.763
PV (AVE=0.78, CR=0.91, α=0.91, Skewness = -0.496, Kurtosis = 0.922)		
"M-payment apps is reasonably priced"	.84	1.362
"M-payment apps is a good value for the money"	.89	1.348
"At the current price, M-payment apps provides good value"	.91	1.242
CU (AVE=0.74, CR=0.92, α=0.92, Skewness = -0.713, Kurtosis = 0.654)		
"The use of M-payment apps has become a habit for me"	.83	1.398
"I am addicted to using M-payments"	.83	2.678
"I must do the booking through M-payments"	.90	1.941
"Using M-payment apps has become natural to me"	.88	1.591
Behavioral intention (AVE=0.76, CR=0.9, α=0.9, Skewness = 0.121, Kurtosis = -0.239)		
"I intend to continue M- Wallets in the future"	.83	1.482
"I will always try to M-payment apps in my daily life"	.89	2.151
"I plan to continue to M-payment apps frequently"	.88	1.678
Trust (AVE=0.74, CR=0.92, α=0.92, Skewness = -0.192, Kurtosis = 0.407)		
"I trust on M-payment apps and service providers"	.85	2.134
"M-payment services in my best interest"	.88	1.457
"M-payment apps offers access to sincere and genuine payment services"	.88	2.478
"M-payment apps performs its role of providing banking services well"	.82	1.458
Price Value (AVE=0.74, CR=0.92, α=0.92, Skewness =-0.671, Kurtosis =0.506)		
"I would like to prefer to buy low-price-level products via M-payment apps"	.85	1.456
"Quality of low-price-level products is not necessarily bad"	.90	1.234
"I'll pay more attention to low-price-level M-Wallet"	.86	2.347
"I usually end up with buying low-price-level products"	.83	1.651
Use (AVE=0.76, CR=0.9, α=0.91, Skewness =-0.761, Kurtosis =0.671)		
"I intend to continue using M-payment apps rather than discontinue its use"	.86	1.392
"My intention is to continue M-payment apps than use alternative means"	.87	2.391
"If I could, I would like to discontinue my M-payment apps services"	.88	1.367
Gamified Feature (AVE=0.73, CR=0.87, α=0.85, Skewness = 0.236, Kurtosis =0.561)		
"Using Gamified Features on M-payment apps is fun"	.78	1.321
"Contents shown in M-payment apps seem interesting. "	.88	1.423

"Conversation or opinion exchange with others is possible through gamified features of M-payments"	.91	1.278
"Using Gamification on M-payment apps is very trendy"	.89	1.827
"Gamified Features offers customized information search"	.81	1.753
Information Quality (AVE=0.67, CR=0.78, α=0.89, Skewness = 0.134, Kurtosis = 0.136)		
"M-payment apps provides sufficient information"	.87	2.186
"Through M-payments, I get the information I need on time"	.88	1.789
"Information provided by M-payment apps is in a useful format"	.91	1.887
"Information provided by M-payment apps is clear"	.78	1.677
"Information provided by M-payment apps is accurate"	.83	1.941
"Information provided by M-payment apps is up-to-date"	.89	2.321
"Information provided by this chatbot is reliable"	.87	1.645
System Quality (AVE=0.73, CR=0.87, α=0.91, Skewness = 0.678, Kurtosis = 0.178)		
"The M-payment apps has a modern-looking interface"	.83	1.678
"The M-payment apps provides the right solution to my request"	.86	1.938
"The M-payment apps gives me a prompt response"	.89	1.784
"The M-payment apps has visually appealing materials"	.78	2.138
"The M-payment apps gives me individual attention"	.84	1.940
"The M-payment apps has an excellent interface to communicate my needs"	.89	1.379

Note: PE=Performance Expectancy, EE=Effort Expectancy, SI=Social Influence, FC=Facilitating Conditions, HM=Hedonic Motivation, PV=Perceived Value, CU=Continuance Usage.

The study has adopted Fornell and Larcker (1981)'s criteria for investigating the discriminant validity of the constructs. Table 3 displays the values and shows that there is a clear distinction between the latent constructs and the data is fit for further analysis.

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Table 3 – Discriminant Validity

	Mean	Std. Dev	AVE	CR	PE	EE	SI	FC	HM	PV	Trust	IQ	SQ	BI	USE	GF	RU
PE	16.23	2.74	0.73	0.92	0.95												
EE	16.07	2.79	0.74	0.92	0.81	0.86											
SI	11.71	2.36	0.75	0.90	0.68	0.74	0.86										
FC	16.15	2.82	0.67	0.89	0.67	0.81	0.82	0.91									
HM	11.73	2.44	0.75	0.90	0.54	0.60	0.69	0.68	0.86								
PV	11.76	2.48	0.78	0.91	0.24	0.34	0.41	0.37	0.40	0.88							
Trust	15.14	3.49	0.78	0.92	0.65	0.68	0.78	0.70	0.67	074	0.86						
IQ	12.65	2.87	0.67	0.78	0.78	0.73	0.65	0.56	0.34	0.67	0.37	0.88					
SQ	11.76	2.19	0.73	0.87	0.61	0.92	0.28	0.46	0.55	0.79	0.64	0.54	0.79				
BI	11.83	2.29	0.76	0.90	0.80	0.83	0.85	0.80	0.65	0.64	0.84	0.87	0.57	0.87			
USE	15.99	2.92	0.74	0.92	0.68	0.76	0.75	0.79	0.64	0.54	0.77	0.86	0.86	0.86	0.88		
GF	15.92	2.94	0.74	0.92	0.74	0.72	0.75	0.73	0.70	0.41	0.82	0.84	0.84	0.84	0.84	0.86	
RU	11.86	2.36	0.76	0.90	0.73	0.80	0.77	0.80	0.62	0.79	0.83	0.85	0.85	0.85	0.83	0.85	0.87

Note: PE=Performance Expectancy, EE=Effort Expectancy, SI=Social Influence, FC=Facilitating Conditions, HM=Hedonic Motivation, PV=Perceived Value, BI= Behavioural Intention; GF= Gamified Features; RU= Repetitive Use diagonal values; in bold represent square root of AVE, off diagonal values are inter-construct correlations.

Multicollinearity was also calculated through the Variance Inflation Factor and the value of each indicator has been reported in Table 3.

Structural Model

Further, bootstrapping was used to assess the significance of the path coefficients at a 5% level of significance. For the path coefficients to be significant, the t -value should be above 1.96 at a 5% significance level. The empirical model proposed for the study inspects the association between dependent variables (Behavioural intention, use of M-payments, and further leads to continuance usage) and the nine antecedents namely, PE, EE, FC, SI, HM, PV, HB, IQ, and SQ. The results of hypotheses testing, and the significant level observed for each hypothesis path are shown in Table 4. All the research hypotheses ("H1, H3, H4, H6, H5, H6, H8, H9, H10, and H11") were supported (Figure 1), except H2 and H7.

Table 4 – Hypothesis Test Results of the Test Mode

Hypothesis	Path Relationship	β value	p value
H1	PE → BI	.166	***
H2	EE → BI	.130	.121
H3	FC → BI	.795	***
H4	SI → BI	.320	***
H5	HM → BI	-.049	***
H6	PV → BI	.296	***
H7	HB → BI	.016	.761
H8	IQ → BI	.296	***
H9	SQ → BI	.318	***
H10	BI → Use	.445	***
H11	Use → CU	.418	.002

Note: PE=Performance Expectancy, EE=Effort Expectancy, SI=Social Influence, FC=Facilitating Conditions, HM=Hedonic Motivation, PV=Perceived Value, HB= Habit, IQ= Information Quality, GF= Gamified Features, SQ= System Quality, BI= Behavioural Intention, CU=Continuance Usage; *** p < 0.001

Mediation Analysis

Bootstrapping is done to confirm the type of mediation effect and aid non-normal data and allow assessing the stability of parametric estimates. Using the approach of Barron & Kenny (Rosha & Kaur, 2017), behavioral intention on repeated usage through gamified features shows an impact and there is an increase in the beta value (0.718 to 0.4 06) which shows that there is partial mediation. Using bootstrapping approach (Cheung & Lau, 2008), the indirect effect has been confirmed and the value of bootstrap (.566) clearly indicates that there is a partial mediation on repeated usage through actual use at a 90% confidence level. Furthermore, the results of PLS-SEM were then compared through an artificial neural network (ANN) analytical process, revealing the consistency of the model.

Moderating Effect of Trust

The product-indicator approach with standardized data and the two-stage approach produces highly similar results. Using the product-indicator approach with unstandardized data produces highly divergent results. In the context of the interaction effects of the moderator, the trust significantly moderates the relationship between the use and continuance usage of M-payments as the p-value is (0.22).

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Artificial Neural Networks (ANN)

The final phase of the analysis of the customer data set was the application of the Artificial Neural Networks Technique in SPSS. The training of these Artificial Neural Networks is done through the Multi-Layer Perceptron (MLP) method training algorithm. The precision of the network's model is checked by values of root mean square error (RMSE) values. Ninety percent of the data was used for training the ANN model and ten percent for testing the accuracy of the trained model. ANNs should be evaluated by changing the count of hidden nodes from one to ten (Wang & Elhag, 2007) thus 10 cross-validations were conducted in the analysis. The exogenous variables that came out significant in the SEM analysis were taken as covariates in the ANN model. Seven covariates, PE, FC, SI, PV, IQ, SQ, and Use, the output layer of the model had CU as the dependent variable. Table 5 displays the results of RMSE of the 10 validations.

Table 5 – RMSE values through Neural Networks for Distributor Study

Network	Training Model	Testing Model
ANN1	0.553	0.466
ANN2	0.501	0.431
ANN3	0.512	0.470
ANN4	0.443	0.517
ANN5	0.475	0.551
ANN6	0.503	0.597
ANN7	0.553	0.529
ANN8	0.477	0.581
ANN9	0.473	0.593
ANN10	0.521	0.570
Mean	0.5011	0.5305
SD	0.0336	0.0554

Further Table 6 depicts the sensitivity analysis results in the NN model. Sensitivity Analysis brings out the average importance of each variable in predicting the repetitive usage of M-payments.PE came out to be the most important antecedent for the continuance usage of M-payments, followed by SI, PV, IQ, FC, SQ, and the Use of M-payments.

Table 6 – Sensitivity Analysis

Constructs	Relative importance
PE	0.2263
SI	0.2116
PV	0.1886
IQ	0.1756
FC	0.1813
SQ	0.1678
Use	0.0936

Note: PE=Performance Expectancy, SI=Social Influence, FC=Facilitating Conditions, PV=Perceived Value, IQ= Information Quality, SQ= System Quality; *** $p < 0.001$

Study 2

The hypotheses have been tested by applying independent vignette-based experiments which are suitable to the manipulation of varying levels of gamification and on behavioural intention, usage, and continuance usage of M-payments, due to better control offered to researchers (McCollough et al., 2000). In Study 2 we manipulated gamification and continuance usage of M-payments.

Setting for Study

In a vignette-based experiment, we asked participants to assume that they are using gamified features of M-payments. We manipulated the gamification features at two levels (low and high) by allowing customers to customize various options, such as challenges, points, badges, leader boards, and other features used by the M-payments service providers (like Heidenreich et al., 2015; Sugathan et al., 2017). We also manipulated the usage condition of M-payments by asking the participants about their overall experience of using M-payments as good or bad.

Pre-test

A pre-testing was done to ensure the face validity and strength of the manipulations. M-payments users were asked to recollect the conditions when they interacted with the gamified features of M-payments while using and exploring it. Participants were also asked to share their good and bad experiences on which they will decide the continued usage of M-payments. These kinds of descriptions are helpful to respondents in familiarizing them with the situations of experiments that are also provided in the vignette. We observed stronger manipulations after the changes were done based on pre-testing.

Sample

Participating in the study were 180 banking customers from different banks, including public, private, and foreign banks (35% women and 65% men). A2 (experience of continuance usage: bad vs. good; manipulated) ×2 (gamification features: low vs. high; manipulated) between-subjects design was employed (the two factors were not significantly correlated: $r=0.23$, $p > .10$).

Manipulation

Under the simulated experimental conditions, the effectiveness of the manipulations used was assessed. On the experience scale, participants with the positive experience scenario scored higher than those with the negative experience scenario (mean=5.02, $F(1, 102) =79.73$, p .001, Cohen's d=3.61). Additionally, we discovered that participants in the high gamification scenario scored significantly better on the gamification measure (mean=5.66) than those in the low gamification scenario (mean=3.98, $F(1,102) =54.98$, p .001, Cohen's d=4.03).

Results

A two-way analysis of variance (ANOVA) was performed to test hypotheses H13. The analysis revealed a significant interaction effect (Figure 1) between the degree of gamification and the behavioural intention for using of M-payments, supporting H13a ($F(1, 100) =4.27$, $p=.054$, $\eta2=0.022$). This implies that an increase in the degree of the gamified feature of M-Payments positively implies continuance usage. Further, In the low state of gamified features state, the effect of customer continuance usage of M-Payments was found to be not significant H13b ($F(1, 52) =0.15$, $p > .7$, $\eta2=0.07$). Taken together, the results suggest that the gamified features of M-payments play a strong role in influencing continuance usage of M-Payments.

Demographics Differences

A one-way ANOVA was run for each of the chosen demographic categories to analyse and understand whether there is any difference in the adoption of M-payments among various groups by age, education, income, and gender. Levene's test for homogeneity of variances is not significant for all four variables: age, occupation, education, and gender as $p > 0.05$. As a result, it is safe to say that each group's population variances are roughly equal.

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Table 7 – ANOVA between Demographics characteristics and Intention to M-payments					
Age	**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	150.337	3	50.112	10.147	.000
Within Groups	2059.354	417	4.938		
Total	2209.691	420			
Occupation	**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	28.566	3	9.522	1.820	.143
Within Groups	2181.125	417	5.231		
Total	2209.691	420			
Education	**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	96.640	3	32.213	6.357	.000
Within Groups	2113.051	417	5.067		
Total	2209.691	420			
Gender	**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	52.427	1	52.427	10.183	.002
Within Groups	2157.264	419	5.149		
Total	2209.691	420			

To determine whether there are any significant differences between customer usage intentions by age, occupation, education, and gender, the One-way ANOVA analysis was performed. Thus, it can be inferred from Table 7 above that, apart from m-payment customers' occupations, there is a considerable difference in adoption and usage intentions among groups of age, gender, and education.

Discussion

M-payments existed in the economies with the dawn of digital technologies, but these got triggered after the demonetization of the economy and government policy to go cashless. Paytm, one of the M-payments was not known amongst Indians, but after the 2016 demonetization, most Indians got acquainted with Mobile payments. Moreover, the governmental policy insisted adoption of digital payment systems and on becoming a cashless economy led to the rise of many Mobile payments in India. Coupled with this there was a boom in high-speed internet services and an increase in the usage of smartphones. Further the pandemic and the major restrictions like social distancing and working from home have marked the adoption of M-payments, research has shown that M-payments are among the most effective tools to satisfy consumers (Conyette, 2012; Gupta et al., 2018). Adoption and factors influencing the adoption and usage of M-payments have been previously studied by researchers (Antunes & Amaro, 2016; Moura et al., 2017; Yang, 2013). However, these studies have not addressed the issue of continuous usage of these apps. The present research is therefore intended to make contributions to the issues of continuous use of M-payments driven by gamified features of payments. The integrated UTAUT2 model with ISS theory provided the theoretical basis for all the aspects that can influence consumer intention to adopt and uses M-payments. This was validated since all the hypotheses from H1 to H11 are accepted, except H2 and H7, for the adoption of M-payments. All constructs that have been used in the study, except EE and HM, were majorly affecting behavioral intention to use M-payments. This is in corroboration with the earlier studies (Gupta & Arora, 2020; Kumar et al., 2018; Singh & Matsui, 2017; Thanigan et al., 2021).

PE (β =0.166, $p < 0.05$), SI (β =0.320, $p < 0.05$), FC (β =0.795, $p < 0.05$), and PV (β =0.296, $p < 0.05$, HM (β =0.145, $p < 0.05$), IQ (β =0.139, $p < 0.05$) and SQ (β =0.213, $p < 0.05$) are statistically significant in explaining behavioral intention to adopt M-payments, thus confirming that these are influential factors for the Indian consumer, which is in alignment with literature that was previously examined and approved. Whereas EE (β =0.130, $p > 0.05$), and HB (β =0.049, $p > 0.05$) are not found to be statistically significant, Previous studies have shown that

the adoption of M payments is restricted to the internet services in the country (Thanigan et al., 2021) which corroborated to the facilitating conditions have a significant impact on behavioral control (Abdullah et al., 2012) in order to successfully adapt the M-payments. Therefore, if respondents are provided with good conditions to make the use of latest M-payments then they are more likely to be inclined towards using the same.

In the case of M-payments users get an option of getting some cash-back or reward points which encourages the user to use the M-Payments for doing any transaction. Moreover, the transaction fees are also not levied to a certain amount when the bank is charging certain fees for any transfer of money from one account to another account. Here the price value encourages the user to adopt for M-Payments (Kaur et al., 2020; Madan & Yadav, 2016). Gamification has been widely accepted in marketing, and many marketers believe that it boosts user engagement and application usage. With an emphasis on the M-Payments experience, this study empirically examines the effects of gamified components in non-game scenarios. Although attention has recently been placed on the beneficial impact of gamification on consumer behavior in marketing and banking literature (Hamari et al., 2014). This study examines the gamification process that occurs when a multifunctional M-payments system uses social mechanics and games to engage its users. In this study, gamification has been considered as a mediating factor and it was found that the features of gamification have full mediation behavioral intention, usage, and continuous usage. Trust has been pointed out by many authors as a very vital factor in the money transaction, in this study trust has been considered as a moderating factor but trust doesn't have a moderating effect on the intended usage and continuous usage

Theoretical Implications

In various aspects, this study advances the theory around the acceptance and application of M-payments. First, this study is one of the earliest attempts to examine the acceptance and continued usage via the lenses of the ISS theory (DeLone & McLean, 1992, 2003) and UTAUT 2 (Venkatesh et al., 2003). To better understand the factors that influence the acceptance and use of M-payments services in developing nations like India, these two models (UTAUT2 and ISS) are combined into a single, more straightforward conceptual model. Secondly, the current study that is based on the UTAUT2 and ISS theory also focuses on the moderating variable trust which is predominant in any monetary transaction and the mediating impact of gamified features has also been studied. To elaborate, the study adopted an additional construct (which adds a new dimension to the adoption model, increasing the prediction of consumer usage of M-payments) to examine the effects on intention to adopt use-behavior of customers leading to repeated usage for M-payments. The use of M-payments indicated that gamified features of payments have a direct impact on user behavior and repeated usage of M-payments. The mobile payments sector, therefore, must recognize that these are major concerns for customers while continuing to use M-payments leading to repeated usage. Therefore, the mobile payments sector must ensure that M-payments have a good price value proposition to ensure repeat usage of M-payments, this implies that M-payments should enable more cash-back and discounts which acts as a price value proposition ensuring the repeated use of these payments. The use of gamification may again be one of the strategies to encourage continuance usage to say, for instance, games like spinning to get more discounts and online quizzes for promotion can also encourage the next usage of M-payments.

Managerial Implications

This study has several implications for working managers and companies that offer mobile payment services. The epidemic and the digitalization of banking services have shown the importance of digital financial services. In the current environment, where the banking sector is leading the way in technological innovation and mobile payments are quickly becoming the preferred payment method, M-payments service providers are thinking about using customer-

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centric technology to achieve a competitive edge. To incorporate gamified mechanics into their apps in the current digital era, M-payments service providers should add game mechanics by difficulty levels, much as what happens in video games. The goal is to capture the customer's attention and attempt to keep them interested for a longer amount of time so they will continue to use M-payments. Based on this result, service providers are encouraged to meet consumers' fundamental demands, including PE, FC, SI, HM, IQ, and SQ, to maximize the PV of their M-payments. This would increase their chances of success in the cutthroat market. The flexibility, convenience, interaction, and engagement of M-payments can then be increased when gamified components are added. Finally, because the social impact and the effect of family and relatives are so significant to Indians, it is essential for digital players to establish gamification and marketing tactics that are consistent with one another. Gamification is part of a larger organizational strategy to enhance platform-user interaction, and the platform should implement social and gamified cues consistently for a demonstrable impact on users. If not, gamification could distort market strategy. This study also highlights the significance of comprehending how users' perceptions of technology's trust impact their continuous use of mobile payments, offering a fresh perspective on how to comprehend the behavioral effects of technology-based consumer interfaces. Service providers should thus run awareness campaigns and other marketing campaigns to spread the word about the value of M-payments.

This research also presents a great opportunity for IT and M-payments service providers, as it has the potential to cater to the ever-increasing demand for mobile payments across the world and in particular Asia Pacific region. In the Asia-Pacific region, digital wallets are the most used payment method for both e-commerce and point-of-sale (POS) payments across the region. It is forecast that digital wallet payments will amount to three-quarters of e-commerce payment methods and over half of POS payments in the Asia-Pacific region by 2025 (Report on Digital Payments in Asia Pacific Region). With its innovative products and services, like gamified tools & techniques can tap into the potential market and benefit from the rapid growth in the payments market. Additionally, game design and elements offered by the companies to their existing customer base can leverage the base in the Asia Pacific region. With its state-of-the-art technology and focus on customer satisfaction, Gamification is well-positioned to capture the potential market in the Asia Pacific region and become a leader in the mobile payment market.

Limitations and Future Research

The study is focused on Indian mobile payment users and data was collected from NCR which is the heart of India where the major mobile payment service providers are available. Mobile payment service providers operating in this region are very well equipped with technological services supported by well-trained employees. In India, a larger population, around 68% of the Indian population, lives in suburbs and remote areas (India, 2001). In future research, the study could consider other regions, basically semi-urban areas, for understanding the adoption behavior of M-payments. Furthermore, in the present research customers' perspective is taken to understand the adoption and continuance usage of the M-payments and the impact of gamified features. However, it has not considered the service providers' perspective to encourage the adoption and usage of the apps. Hence, the present study may not provide a clear understanding of the major determinants important for the successful execution of M-payments from the perspectives of service providers.

Demographic variables such as age, technology experience, and gender, have not been considered to reflect the levels of roles of social influence on BI (Algharabat et al., 2017; Constantiou et al., 2009; Venkatesh et al., 2003). Hence, the moderation influence of demographic variables on social influence and BI can draw interest for further studies. The third and last limitation of the study is related to additional constructs of the UTAUT2 model. The study considered two constructs namely gamified features and trust leading to repeated

usage, to understand M-payments users. Future research could be focused on the usage of other variables such as brand- image, features of the apps, and perceived security, which could have an impact on the adoption of M-payments for customers. In the context of future research, demographic, cultural, and socio-economic variables such as education, status, attitude towards adoption of new technology etc., can be considered since the difference in these dimensions can vary the perception of consumers towards adoption of new technology. Further, since background factors affect consumers' continuance intention in the context of M-payments over a longitudinal time frame, it calls for more research.

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About the Authors

Dr. Garima Malik is a doctoral scholar of Marketing at Xavier School of Management, XLRI Jamshedpur, India. She has more than Eighteen years of academic experience. She is also associated with Amity Business School, Noida, India. Her area of research includes banking, gamification, acceptance of technological services, and customer relationship management. Her research papers are published in various leading journals such as International Journal of Bank Marketing, Tourism Analysis, Event Management, Information Technology & Tourism International Journal of Healthcare Management Journal of Global Marketing, Innovative Marketing, Pacific Asia Journal of the Association for Information Systems, Journal of Science and Technology Policy Management among others. She can be reached at r17002@astra.xlri.ac.in

Dr. Dharmendra Singh is an Assistant Professor at Modern College of Business and Science, Muscat (Oman). He possesses a rich professional experience of over 20 years in the field of finance. He holds a Ph.D. (Finance), professional certifications like Certified Financial Planner (CFP), associate diploma (life insurance) from Insurance Institute of India, and CFA. He has published a number of articles & research papers in various reputed international and refereed journals indexed in ABDC and Scopus. His research area includes banking, corporate finance, and financial markets. He also serves as a reviewer for select journals. He is a member of the Financial Planning Standard Board (FPSB), Indian Econometric Society, and Insurance Institute of India. Email: dharmendra@mcbs.edu.om