# Analysis of Factors Affecting Use Behavior towards Mobile Payment Apps: A SEM Approach 

<br>${ }^{1}$ Department of Business Management, C P and Berar College, Nagpur University, Nagpur, India<br>${ }^{2}$ Department of Commerce, Seth Kesarimal Porwal College of Arts and Science and Commerce, Kamptee, Nagpur, India<br>${ }^{3}$ Department of Commerce Manoharbhai Patel Arts, Commerce and Science College, Sakoli Dist, Bhandara 441802, Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur, Maharashtra, India<br>${ }^{4}$ Department of Management, Kebri Dehar University, Kebri Dehar, Ethiopia<br>Correspondence should be addressed to Mahesh Singh; drmaheshsingh@kdu.edu.et

Received 26 December 2022; Revised 24 February 2023; Accepted 27 February 2023; Published 22 March 2023
Academic Editor: Zheng Yan
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#### Abstract

The main aim of this research study is to examine the impact of five independent variables viz. performance expectancy, effort expectancy, social influence, facilitating conditions, and hedonic motivation on behavioral intention to use mobile payment apps. This study is further aimed at investigating the influence of behavioral intention on the use behavior of mobile payment app users. This study strives to investigate the use behavior of people who have already used mobile payment apps like Google Pay, PhonePe, and PayTM previously for making payments for the products and services they have purchased from various sellers. The researchers used the UTAUT2 theory to examine the relationship between the independent and dependent variables mentioned above. The data was collected from 618 mobile payment app users from Vidarbha, M.S., India. Availability sampling and purposive sampling techniques were adopted for the final selection of the respondents. A structured questionnaire was designed by the researchers for collecting the required primary data. The six proposed hypotheses were tested by using SMART-PLS 3.3 .5 software. The results indicated support for all six proposed hypotheses. The proposed model explained a substantial amount of variance in behavioral intention ( $R^{2}=71.8 \%$ and $R^{2}=76.5 \%$ ) in use behavior towards mobile payment apps explained by independent variables. Facilitating conditions exhibited the strongest effect on behavioral intention.


## 1. Introduction

The first hand-held mobile device was introduced in 1973 [1]. Today, mobile phones have become an indispensable part of our modern lives [2]. Recently, the use of mobile devices has increased in daily life as compared to the use of any other device [3]. According to Malik et al. [4], today's modern society is determined by growing technological changes and mobility in terms of smartphone usage. Mobile devices are also innovating the ways of making payments [5]. According to the Organisation for Economic Cooperation and Development (OECD, 2012), payments made via mobile phones are called mobile payments. In this, the payment data and instructions are made via mobile. It also
includes internet payments made by using a mobile device and through mobile network operators $[1,6]$ and mobile wallet (i.e., an application of mobile payment) which is used as an additional mode of a conventional wallet. According to Dahlberg et al. [7], mobile payment started in 1997. According to Xin et al. [8], in mobile payment, payment data and instructions are piloted through a mobile phone or personal digital assistant [9]. Mobile payments are enabling online as well as offline purchases of goods and services, payment of various bills, etc. There are many mobile payment systems available that can be used on iOS and Android devices. Customers have to link their bank account to a mobile payment account before using mobile payment apps for transaction purposes [5].

Mobile payment has gained popularity in many regions [5]. It is believed that the number of people using mobile payment apps is increasing. $61 \%$ of the world's developing countries are using mobile payment services [10]. According to eMarketer research tracking and estimation, in 2018, $34.9 \%$ of retail payments were made by using a mobile payment system [11]. PayTM, GooglePay, BHIM app, PhonePe, and Amazon pay are a few prominent digital payment apps in India. 25.5 billion digital transactions were made in India in 2021 and 15.7 billion transactions in China in the same year [12]. Alqudah [13] pointed out that the main users of mobile payments are consumers utilizing in paying payment bills, products, and services [14]. In recent years, due to the emergence of smartphones, mobile payment systems have got-important technological support [15]. There has been incredible growth in the use of mobile phones all over India. Rashid and Elder [16] stated that India and China have more mobile phones than North America and Europe combined. Mobile payments are the key to driving economic development in developing countries [17]. Gupta and Yadav [18] pointed out that the Indian government has a mission to make a cashless, faceless, paperless economy. Mobile payment is a new payment method, and it is setting a new trend of making payments electronically [19].

Pal et al. [20] found that the review on mobile phone payment adaptation includes frequent use of existing models like TAM, UTAUT, and IDT. In the opinion of Oechslein et al. [21], UTAUT2 deals with new opportunities for exploring the acceptance of consumer technologies. There are many studies [22-28] which have attempted to examine the factors affecting usage behavior towards digital payment apps utilizing the UTAUT2 model. With this backdrop, it becomes imperative to study the usage behavior of the users towards mobile payment apps in a developing country, i.e., India to gain some understanding of how people are perceiving them.

### 1.1. Theoretical Framework and Hypothesis Formulation

1.1.1. UTAUT2 Model. In the opinion of Tamilmani and Rana [29], extended unified theory of acceptance and use of technology UTAUT2 is the most widespread model which explains individual technology acceptance and use. While retracing the origin of UTAT, it was found that [25], before UTAUT, Technology acceptance model (TAM) was popular among the researchers studying acceptance of mobile payment. It has certain limitations. To tackle these limitations, some new theories were developed. The most widely accepted was the UTAUT model developed by Venkatesh, Morris, and Davis which is based on a review of eight dominant technology adoption models. Slade et al. [30] stated that UTAUT asserts that performance expectancy, effort expectancy, and social influence affect behavioral intention, which, together with facilitating conditions, affect users' behavior.

Venkatesh et al. [31] mentioned that UTAUT2 has added three new constructs over its previous version viz. hedonic motivation, price value, and habit. In comparison to its predecessor, UTAUT2 emphasized hedonic value (intrinsic motivation) rather than utilitarian value (extrinsic motivation).

Mahfuz et al. [32] has stated that the UTAUT2 model is the most effective and perfect model used for analyzing information technology acceptance. In the opinion of Indrawati and Putri [33], the reasons for using the UTAUT2 model are its updated version and its highest prediction power among others. Based on this literature, the researchers have adapted the UTAUT2 model as their conceptual model.
1.2. Performance Expectancy. In the view of Junadi and Sfenrianto [34], performance expectancy is the perception of the consumer regarding the superiority of digital payment systems in terms of speed, security, and convenience. A study by Davis [35] indicates that customers' behavioral intention changes according to their beliefs about performance. It further states that users adopt the digital payment system whose performance is superior. The study conducted by Doa et al. [36] collected data from two hundred Cambodian users. It was found that users' behavioral intention changes when their performance exceeds the user's requirements and demand.

In their research, Al-Okaily et al. [37] attempted to analyze the acceptance of Jordan towards JoMoPay system usage. The results indicate that behavioral intention to use the JoMoPay system is positively and significantly affected by performance expectancy. The study was conducted in Taiwan. 307 samples aged from 17 to 55 were surveyed. The study is aimed at the young generation and how they adopt mobile payment services. The results indicate that apart from the social influence performance expectancy plays a crucial role in the adoption of digital payment systems. Wei et al. [38] study was undertaken to determine the acceptance of mobile payment by retailers. There were several factors which were scrutinized regarding their significance in the adoption of mobile payment apps. It was found that performance expectancy was the primary criterion which influence retailers' behavioral intention to adopt mobile payment apps [39]. The studies [40-47] have also studied the relationship between performance expectancy and behavioral intention. With this backdrop, the following hypotheses were formed:

H1: there is no impact of performance expectancy on behavioural intention to use mobile payment applications.
1.3. Effort Expectancy. According to Venkatesh et al. [48], effort expectancy is the level of ease which is related to the use of that particular system. According to Venkatesh et al. [31], effort expectancy includes TAM and TAM2's perceived ease of use. In the research conducted by Alalwan et al. [49], three hundred forty-three respondents were surveyed. It was found that among many factors' effort, expectancy proved to be a significant factor for mobile banking behavioral intention. Many research studies [50-54] show similar findings. In research conducted by Alshare and Lane [55], it was revealed that there is a strong relationship between effort expectancy and the behavioral intention of customers. The studies [40-47] have also evaluated the relationship between effort expectancy and behavioral intention. The above discussion led to the formulation of the following hypothesis:

H 2 : there is no impact of effort expectancy on behavioral intention to use mobile payment applications.
1.4. Social Influence. According to Šumak et al. [53], social influence refers to the degree to which an individual's perception is influenced by the important people in his life. According to the UTAUT model, social influence is 'the extent to which an individual perceives that the things important to others believe he or she should apply the new system' [31]. In the opinion of Cao and Niu [56], a person is always susceptible to the opinion of people who are very close to him which mainly include friends and colleagues. In the research carried out by Yang et al. [57], a research model reflecting the characteristics and use of mobile service was empirically tested on 483 potential adopters and 156 current users of mobile service. It was found that behavioral beliefs together with social influence and personal traits are significant. Liébana-Cabanillas et al. [58] believe that, in the future, mobile payment systems will be strongly influenced by external people rather than by technology. On the other hand, Akturan and Tezcan [59] found that perceived social risk is one of the significant factors in the adoption of mobile banking. The risk of social neglect plays a dominant role in their study. Many other researchers $[9,25,58,60,61]$ have attempted to analyze the impact of social influence on behavioral intention under the UTAT model. The studies [41-44, 46, 47] have also studied the relationship between social influence and behavioral intention. The above discussion has brought forward the following hypothesis:

H3: there is no impact of social influence on behavioral intention to use mobile payment applications.
1.5. Facilitating Conditions. According to Venkatesh et al. [48], facilitating conditions are the degree to which an individual believes in the capability of a firm's organizational and technical infrastructure in supporting its technology. The meaning of facilitating conditions in an educational context refers to the conditions made of human, organizational, and technical support for using the learning system [62]. The exploratory research in Kenya carried out by Micheni et al. [63] and analyzes the impact of transaction cost and facilitating conditions on the adoption of mobile money in Kenya. The results indicate that facilitating conditions impact positively the adoption of mobile money services. A similar study was conducted in Indonesia [64]. They used the extended unified theory of acceptance and use of technology (UTAUT) model. Their sample size was hundred, and data were analyzed using the PLS-SEM. Their result shows that facilitating condition is equally significant along with performance expectancy and social influence in explaining behavioral intention. Similar research was conducted by Sivathanu [53], Malik et al. [4], Šumak et al. [28], and Ozkan et al. [65]. The results show that there is a significant relationship between facilitating conditions and behavioral intention to use mobile payments to perform online transactions. The studies [42-44, 46, 47] have also evaluated the relationship between facilitating conditions and behavioural intention. Hence, the researchers propose the following hypothesis:

H 4 : there is no impact of facilitating conditions on behavioral intention to use mobile payment applications.
1.6. Hedonic Motivation. According to Venkatesh et al. [48], hedonic motivation is related to the fun or pleasure derived from using technology. Hedonic motivation plays an important role in defining technology acceptance. It was also reported that hedonic motivation, price value, and habit were added as the new constructs to formulate UTAUT2. The research was conducted [66] using UTAUT2 to substantiate the usage and adoption process. 276 samples of current and ex-students of various management colleges were surveyed in Delhi. The results indicate that consumers give a lot of importance to the hedonic aspect. Similar results were seen by Chau et al. [67], Nikolopoulou et al. [68], and Semiz and Semiz [69]. On the other hand, an empirical study by Handoko [70], and Alfansi and Daulay [71] shows hedonic motivation does not affect behavioral intention. The studies [40, 42, 47] have also studied the relationship between hedonic motivation and behavioral intention. This debate urged researchers to formulate the following hypothesis:

H5: there is no impact of hedonic motivation on behavioral intention to use mobile payment applications.
1.7. Behavioral Intentions. According to Patil et al. [25], behavioral intention is an essential part of the UTAUT2 model. Behavioral intention is related to both action planning and coping with planning significantly [72], whereas, in the opinion of Goode and Harris [73], behavioral intention is a person's conscious plan to apply efforts to carry out a particular behavior with intentions. In the opinion of Shin [6], UTAUT considers behavioral intention as an attitude towards a particular behavior. It is nothing but an individual's positive or negative feelings about performing a certain behavior. In the study carried out by Goode and Harris [73], strong links are shown between a number of hypothesized ancestors and behavioral intentions. In this study, they gathered data from two hundred and ninety-six respondents. Several other studies such as $[6,74,75]$ have also witnessed a strong association between behavioral intention and the use of mobile payment systems. The studies [41, 44, 47, 76] have also evaluated the impact of behavioral intention on actual use behavior. Thus, the next hypothesis was formulated:

H6: there is no impact of behavioral intention to use mobile payment applications on the use behavior of the users.
1.8. About the Present Study. The main aim of this research study is to examine the impact of five independent variables viz. performance expectancy, effort expectancy, social influence, facilitating conditions, and hedonic motivation on behavioral intention to use mobile payment apps. This study is further aimed at investigating the influence of behavioral intention on the user behavior of mobile payment app users. This study strives to investigate the use behavior of people who have already used mobile payment apps like Google Pay, PhonePe, and PayTM previously for making payments for the products and services they have purchased from various sellers. The researchers have used the UTAUT2 theory to examine the relationship between the independent and dependent variables mentioned above.


Figure 1: The research model [31].

The proposed research model and the hypothesized relationships are presented in Figure 1. The study proposition is that use behavior is determined by a behavioral intention to use a mobile payment app. In turn, the behavioral intention is determined by five factors viz., performance expectancy, effort expectancy, social influence, facilitating conditions, and hedonic motivation in the context of mobile payment apps.

## 2. Methodology

2.1. Sampling. This study is conducted in Vidarbha. Vidarbha is a geographic region in Maharashtra State, India. There are 11 districts in Vidarbha viz. Yavatmal, Akola, Amravati, Wardha, Buldhana, Washim, Nagpur, Chandrapur, Bhandara, Gadchiroli, and Gondia. While reviewing the literature, the researchers found that there are a few such studies conducted at a macrolevel, i.e., India and few other parts of India. But such study evaluating the behavior of the UPI payment app users was not found to be conducted earlier at a microlevel, i.e., this specific geographic region, Vidarbha. With a view to contribute to the available stock of literature available on this topic, the researchers decided to plug in this existing gap in the literature. In this study, a sample survey of 618 mobile payment app users was conducted to collect the relevant data on the chosen variables. The profile of the samples is presented in Table 1.

The researchers used two techniques of nonprobability sampling viz. availability sampling and purposive sampling for the final selection of the samples. As the defined target population is infinite, it was not possible to procure a detailed source list of participants using UPI payment apps. Unlike probability sampling, the researchers can use their judgement for selecting the samples in purposive sampling. The researchers decided to include only those participants in the survey who have already used UPI payment apps. This set of criteria helped researchers to achieve a true representation of the population in the sample. The researchers intentionally excluded those people who had never used UPI payment apps. This justifies the selection of purposive sampling technique for conducting this research study.
2.2. Measure. This research study is based predominantly on primary data. Primary data was collected by administering a well-structured questionnaire. A structured questionnaire was designed by the researchers incorporating all the variables specified in the research model. A total of 29 items were used to measure seven constructs. All the items were adapted from the existing literature. The items used in the measurement scales and their sources are presented in Table 2.

The respondents were asked to indicate their level of agreement for each item based on a five-point scale ranging from 1: strongly disagree to 5 : strongly agree. Five-point Likert scale ('strongly disagree' to 'strongly agree') was used

Table 1: Sample characteristics.

| Characteristic | Choices | No. of respondents ( $n=618$ ) | \% |
| :---: | :---: | :---: | :---: |
| Gender |  | 335 | 54 |
|  | Female | 283 | 46 |
| Age | 18 to 30 years | 357 | 58 |
|  | 31 to 45 years | 183 | 30 |
|  | 46 to 60 years | 73 | 11 |
|  | Above 60 years | 05 | 01 |
| Education | HSSC | 64 | 10 |
|  | Graduate | 166 | 27 |
|  | Postgraduate | 233 | 38 |
|  | Above PG | 155 | 25 |
| Occupation | Students | 318 | 51 |
|  | Unemployed | 24 | 04 |
|  | Salaried | 236 | 38 |
|  | Pensioner | 07 | 01 |
|  | Business | 33 | 06 |
| Monthly household income | <Rs. 25,000 | 250 | 40 |
|  | Rs. 26,000-50,000 | 141 | 23 |
|  | Rs. 51,000-75,000 | 91 | 15 |
|  | >Rs. 75,000 | 136 | 22 |
| Marital status | Married | 261 | 42 |
|  | Single | 357 | 58 |
| Experience of using mobile payment app | Less than a year | 110 | 18 |
|  | 1 to 2 year(s) | 178 | 29 |
|  | 2 to 3 years | 126 | 20 |
|  | 3 to 4 years | 67 | 11 |
|  | 4 to 5 years | 60 | 10 |
|  | $>5$ years | 77 | 12 |

for the items measured in all seven constructs. The reliability measure Cronbach's alpha was computed. The alpha values for all the constructs were found to be greater than the threshold of 0.7 . The items used to measure the seven constructs shown in the conceptual framework were adapted from the UTAUT2 theory and supported by prior relevant research studies.
2.3. Data Collection. The researchers used two methods for gathering the required primary data viz., self-administration of the questionnaire and online survey. The researchers administered the questionnaire by visiting the places like colleges, offices, and respective residences of the potential respondents. The questionnaire was also transformed into an electronic Google survey form. This Google form was subsequently circulated through WhatsApp--a social media platform.

## 3. Results and Discussion

Structural equation modelling (SEM) was performed to test the research model. The data were analyzed in four steps. First, data cleaning was done by removing missing values.

In the second step, descriptive statistical measures were computed for various sociodemographic variables. In the third step, the measurement model is tested by applying confirmatory factor analysis (CFA). Then finally, a structural model (SEM) is examined by testing the hypotheses.
3.1. Descriptive Statistics. The primary data was collected from 618 mobile payment app users. Preliminary analysis revealed that the sample consisted of more males (54\%) than females ( $46 \%$ ). In terms of age, more than half ( $58 \%$ ) of the sample consisted the young customers belonging to the age group of 18 to 30 years. There were $30 \%, 11 \%$, and $1 \%$ users in the age group of $31-45,46-60$, and above 60 years, respectively, in the sample. In terms of education, there were $38 \%$ postgraduate, $27 \%$ graduate, $25 \%$ above PG, and 10\% HSSC users in the sample. As far as occupation is concerned, the maximum respondents ( $51 \%$ ) were students, $38 \%$ were salaried employees, $6 \%$ businessmen, $4 \%$ unemployed, and $1 \%$ pensioners in the sample. The sample constituted of $40 \%$ of respondents having below Rs $25,000 /$, $23 \%$ having 26,000 to 50,000 , $22 \%$ having above Rs 75,000 , and $15 \%$ having $51,000-75,000$ monthly incomes. The majority of the respondents (58\%) were

Table 2: Measurement scales and their sources.

| Construct and alpha | Code and items | Supporting literature |
| :---: | :---: | :---: |
| Performance expectancy (PE) $(\alpha=.928)$ | I find mobile payment app useful in my daily life <br> I find the payment transaction (i.e., shopping, purchases, and transfers) is easy to make with mobile payment app <br> Using mobile payment app helps me accomplish transaction (i.e., shopping, purchases, and transfers) more quickly <br> Using mobile payment app improves my overall payment performance | [77] [25] |
| Effort expectancy (EE) $(\alpha=0.937)$ | I find it easy to learn how to use a mobile payment app <br> I feel the mobile payment app user interface is easy to understand <br> I feel the mobile payment app is user-friendly <br> I quickly become proficient (skillful) in using a mobile payment app <br> I find mobile payment systems easy to use <br> I do not have any doubts about what I am doing when I am using mobile payment app | [77] <br> [25] <br> [78] |
| Social influence (SI) $(\alpha=0.809)$ | People who are important to me suggest that I have to use a mobile payment app People who have an influence on my behavior believe that I have to adopt a mobile payment app <br> The people that influence me use mobile payment app | [77] [78] |
| Facilitating conditions $\begin{aligned} & \text { (FC) } \\ & (\alpha=0.898) \end{aligned}$ | I have the resources necessary to use mobile payment app <br> I have the knowledge necessary to use mobile payment app <br> The technology (e.g., android) I use is compatible with the mobile payment app <br> I have proper network signal strength to complete UPI transaction | [25] <br> [77] <br> [78] |
| Hedonic motivation $\begin{aligned} & (\mathrm{HM}) \\ & (\alpha=0.890) \end{aligned}$ | Using a mobile payment app is fun <br> Using a mobile payment app is enjoyable <br> Using a mobile payment app is very entertaining | [77] |
| Behavioural intention (BI) $(\alpha=0.922)$ | I am willing to keep using the mobile payment app in the future <br> I intend to use a mobile payment app on a daily basis <br> I plan to keep using the mobile payment app regularly <br> I plan to use mobile payment app frequently <br> I will recommend others to use mobile payment app | [77] [25] |
| Actual usage (AU) $(\alpha=0.918)$ | I use mobile payment app <br> I pay for purchases using mobile payment apps <br> I use mobile payment apps for transferring money to my family, friends and/or other contacts <br> I use mobile payment apps when doing online shopping | [25] |

unmarried, and $42 \%$ of the respondents were married. There were $33 \%$ of respondents cumulatively who were using mobile payment apps for more than three years (Table 1).

The researchers have included only those participants in the study who have used UPI payment apps previously for making payments for the products and services they have purchased from various sellers. If we refer to the demographics of India, we can say that India is a young country because approximately half of its population is under 25 years of age [79]. Moreover, the younger population happens to be more techno-savvy and they are more adept to use digital payment apps with ease. Typically, college students are found to indulge in buying things using UPI payment apps quite often. Incidentally, when the link to the Google survey form prepared for this study was circulated through social media platforms, the college students participated in the survey voluntarily and
enthusiastically. Hence, there are more younger participants in our sample than the other groups viz. unemployed, pensioners, and businessmen.
3.2. Measurement Model. As depicted in the conceptual model (Figure 1), there are five exogenous variables viz. performance expectancy, effort expectancy, social influence, facilitating conditions, and hedonic motivation and two endogenous variables viz. behavioral intention and use behavior. The six proposed hypotheses were tested by using SMART-PLS 3.3.5 software. For estimating the measurement model, confirmatory factor analysis (CFA) was performed. The results of CFA including factor loadings, average variance extracted, Cronbach's alpha, and composite reliability are presented in Table 3.

Cronbach's alpha ( $\alpha$ ) and composite reliability values were computed for determining the reliability of each scale.

Table 3: Factor structure and reliability analysis.

| Construct | Items codes | Factor loadings | AVE | Cronbach's $\alpha$ | CR |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Performance expectancy | PE:1 | 0.924 | 0.764 | 0.928 | 0.928 |
|  | PE:2 | 0.871 |  |  |  |
|  | PE:3 | 0.839 |  |  |  |
|  | PE:4 | 0.859 |  |  |  |
| Effort expectancy | EE:1 | 0.854 | 0.716 | 0.937 | 0.938 |
|  | EE:2 | 0.867 |  |  |  |
|  | EE:3 | 0.900 |  |  |  |
|  | EE:4 | 0.903 |  |  |  |
|  | EE:5 | 0.824 |  |  |  |
|  | EE:6 | 0.713 |  |  |  |
| Social influence facilitating conditions | SI:1 | 0.857 | 0.587 | 0.809 | 0.808 |
|  | SI:2 | 0.703 |  |  |  |
|  | SI:3 | 0.730 |  |  |  |
|  | FC:1 | 0.835 | 0.692 | 0.898 | 0.899 |
|  | FC:2 | 0.845 |  |  |  |
|  | FC:3 | 0.897 |  |  |  |
|  | FC:4 | 0.741 |  |  |  |
| Hedonic motivation | HM:1 | 0.808 | 0.733 | 0.89 | 0.891 |
|  | HM:2 | 0.954 |  |  |  |
|  | HM:3 | 0.797 |  |  |  |
| Behavioral intention | BI:1 | 0.893 | 0.706 | 0.922 | 0.923 |
|  | BI:2 | 0.829 |  |  |  |
|  | BI:3 | 0.870 |  |  |  |
|  | BI:4 | 0.768 |  |  |  |
|  | BI:5 | 0.836 |  |  |  |
| Use behavior | UB:1 | 0.907 | 0.739 | 0.918 | 0.919 |
|  | UB:2 | 0.839 |  |  |  |
|  | UB:3 | 0.877 |  |  |  |
|  | UB:4 | 0.811 |  |  |  |

$N=618$.

These indices shown in Table 1 indicate that all seven constructs have very good reliabilities. Factor loadings and average variance extracted (AVE) indices were estimated to test the convergent validity of the constructs [80]. The results show that each factor loadings of indicators in each construct were statistically significant. The factor loadings are sufficiently high for testing the structural model. The outer loading of all the indicators exceeds the threshold value of 0.7 as shown in Table 3. According to Fornell and Larcker [80], the latent construct has a reliable measurement structure when the value of the average variance extracted is over 0.50. In this study, the values of AVEs for the seven research constructs ranged from 0.587 to 0.764 . This indicates that all seven constructs achieved internal consistency among the indicators to measure the latent constructs.

Discriminant validity was also determined by comparing the square root of AVE and the intercorrelation coefficients of constructs. In the present research, discriminant validity was calculated on the suggestions of Fornell and Larcker
[80]. As per this criterion, we compare the diagonal upper values which are the square root of AVE with the below values. The diagonal upper value (square root of AVEs) should be greater than the other below values in the same column and row. Table 4 shows that the standardized criteria of discriminant validity are fulfilled by this study. As the indicators' loadings are higher than their cross-loading, which satisfies the criterion of discriminant validity, the results of discriminant validity are illustrated in Table 4 [80].
3.3. Structural Model. Standardized root mean square residual (SRMR) and normed fit index (NFI) are the two common measures of determining measurement model fit. The researchers have used both these measures to determine the overall model fit. The thresholds for these measures are $\mathrm{SRMR}<0.08$ and $\mathrm{NFI}>0.90$ [81]. The model fit results show that the SRMR is 0.045 which is less than the threshold criteria, and the estimated NFI is 0.93 which is greater than the threshold criteria. Both these criteria

Table 4: Discriminant validity.

|  | BI | EE | FC | HM | PE | SI | UB |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| BI | $\mathbf{0 . 8 4 0}$ |  |  |  |  |  |  |
| EE | 0.779 | $\mathbf{0 . 8 4 6}$ |  |  |  |  |  |
| FC | 0.788 | 0.811 | $\mathbf{0 . 8 3 2}$ |  |  |  |  |
| HM | 0.588 | 0.553 | 0.550 | $\mathbf{0 . 8 5 6}$ |  |  |  |
| PE | 0.748 | 0.849 | 0.788 | 0.464 | $\mathbf{0 . 8 7 4}$ | $\mathbf{0 . 7 6 6}$ |  |
| SI | 0.708 | 0.716 | 0.690 | 0.564 | 0.665 | 0.641 | $\mathbf{0 . 8 5 9}$ |
| UB | 0.875 | 0.795 | 0.832 | 0.460 | 0.792 | 0.3 |  |

Note: BI: behavioral intention; EE: effort expectancy; FC: facilitating conditions; HM: hedonic motivation; PE: performance expectancy; SI: social influence; UB: use behavior. The diagonal elements (in bold) represent the square root of AVE.


Figure 2: Structural model with path coefficients and outer loadings.
values assure the fitness of the measurement model for further analysis.

After establishing adequate structural model fit indices, path analysis was conducted to test the proposed hypotheses using Smart PLS 3.3.5 software. The researchers formulated six hypotheses to examine the relationships between independent and dependent variables. The final model exhibited in Figure 2 displays the path coefficients for each relationship with outer loadings and squared multiple correlations
$\left(R^{2}\right)$ for each endogenous construct. The results indicate support for all six proposed hypotheses (Table 5).
(1) H1 evaluated the impact of performance expectancy on behavioral intention. The result revealed that there is a significant positive impact of performance expectancy on behavioral intention of mobile payment app users $(\beta=0.165, t=3.64$, $p<0.01$ ). Hence, H1 is supported (Table 5)

Table 5: Results of structural model path coefficients.

| Hypotheses | Relationship | $\beta$ | t-value | $p$ values | Remark |
| :---: | :---: | :---: | :---: | :---: | :---: |
| H1 | PE-> BI | 0.165 | 3.640 | <0.01 | Supported |
| H2 | EE- $>$ BI | 0.187 | 3.890 | <0.01 | Supported |
| H3 | SI- $>$ BI | 0.169 | 4.569 | <0.01 | Supported |
| H4 | FC-> BI | 0.312 | 5.094 | <0.01 | Supported |
| H5 | HM- > BI | 0.141 | 4.254 | <0.01 | Supported |
| H6 | BI- > UB | 0.875 | 44.181 | <0.01 | Supported |
|  | $R^{2}$ | $Q^{2}$ |  | $f$-square |  |
| Behavioral intention | $0.718^{\text {a }}$ | 0.487 | PE-> BI | 0.024 |  |
| Use behavior | $0.765^{\text {b }}$ | 0.519 | EE- $>$ BI | 0.025 |  |
|  |  |  | SI- $>$ BI | 0.042 |  |
|  |  |  | FC- $>$ BI | 0.097 |  |
|  |  |  | HM- > BI | 0.044 |  |
|  |  |  | BI- $>$ UB | 3.258 |  |

Note: ${ }^{\text {a predictors (constant): PE: performance expectancy; EE: effort expectancy; SI: social influence; FC: facilitating conditions; HM: hedonic motivation. }}$ Dependent variable: BI: behavioral intention. $p<0.01$. ${ }^{\text {b }}$ Predictor (constant): BI: behavioral intention. Dependent variable: UB: use behavior; $p<0.01$.
(2) H2 evaluated the impact of effort expectancy on behavioral intentions. The results revealed that there is a significant positive impact of effort expectancy on behavioral intentions ( $\beta=0.187, t=3.89$, $p<0.01$ ). Hence, H2 is supported (Table 5)
(3) H3 evaluated the impact of social influence on behavioral intentions. The results revealed that there is a significant positive impact of social influence on behavioral intentions ( $\beta=0.169, t=4.569$, $p<0.01$ ). Hence, H3 is supported (Table 5)
(4) H 4 evaluated the impact of facilitating conditions on behavioral intentions. The results revealed that there is a significant positive impact of facilitating conditions on behavioral intentions ( $\beta=0.312, t=5.094, p<0.01$ ). Hence, H4 is supported (Table 5)
(5) H5 evaluated the impact of hedonic motivation on behavioral intentions. The results revealed that there is a significant positive impact of hedonic motivation on behavioral intentions $(\beta=0.141, t=4.254$, $p<0.01$ ). Hence, H5 is supported (Table 5)
(6) H6 evaluated the impact of behavioral intentions on use behavior. The results revealed that there is a significant positive impact of behavioral intentions on use behavior $(\beta=0.187, t=44.181$, $p<0.01)$. Hence, behavioral intention served as a significant positive predictor of use behaviour by mediating the effects of the abovementioned exogenous variables and thus confirm H6 (Table 5)
(7) The proposed model explained a substantial amount of variance in behavioral intention ( $R^{2}=71.8 \%$ ) explained by independent variables
(8) The proposed model also explained a substantial amount of variance in the final dependent variable, i.e., use behavior ( $R^{2}=76.5 \%$ ) explained by all the independent variables
(9) Facilitating conditions exhibited the strongest effect on behavioral intention
(10) The predictive power of behavioral intention model is found to be high $\left(Q^{2}=48.7 \%\right)$; similarly, the predictive power of use behavior model was also found to be high $\left(Q^{2}=51.9 \%\right)$ (Table 5)

## 4. Discussion and Conclusion

The outcome of this study is in accordance with [37]. The results indicated that the intention to use digital payment systems is significantly and positively influenced by performance expectancy, social influence, price value, security, and privacy, which together explain 0.612 of the variances of behavioral intention. However, the total variance explained by performance expectancy, effort expectancy, social influence, facilitating conditions, and hedonic motivation is found to be slightly better at 0.718 . Similarly, the results of [25] revealed that performance expectancy, intention to use, and grievance redress a significant positive predictors of consumer use behavior towards mobile payment. Moreover, the intention to use was significantly influenced by attitude, social influence, and facilitating conditions. These results are in accordance with the present study at hand. Incidentally, the results of [77] show that effort expectancy, social influence, hedonic motivation, and perceived risk in digital wallet adoption do not significantly affect the behavioral intention to adopt the digital wallet. However, the impact of effort expectancy, social influence, and
hedonic motivation on the intention to adopt mobile payment apps is found to be significant.

The present study investigated the impact of performance expectancy, effort expectancy, social influence, facilitating conditions, and hedonic motivation on behavioral intention of the users using mobile payment apps. This study also examined the impact of behavioral intention on use behavior of the users making payments using mobile payment apps for making payments for the products and services they have purchased from various merchants. The researchers have used UTAUT2 theory to test the proposed research model. The results of this study revealed a significant impact of all the five independent variables viz. performance expectancy, effort expectancy, social influence, facilitating conditions, and hedonic motivation on behavioral intention. The relationship between behavioral intention and use behavior was also found to be significant. Facilitating conditions were found to have the strongest effect on behavioral intention.
4.1. Social and Policy Implications for Marketers. The study has utilized the original UTAUT model to check its applicability in the field of e-wallets. The researchers tested this model empirically. The results of all the constructs and their relationships in the model are found to be significant. These results contribute to the application of the extended UTAUT theory in the field of marketing technology development.

In terms of its practical applications, the results provide insights into the behavior of the users of various digital payment apps viz. Google Pay, PhoenPe, and PayTM in India. The results can serve as a guideline to various digital app marketers in India to get an understanding of their users' behavior. It will help them to improve and reframe their marketing strategies. The results may also help budding entrepreneurs contemplating to venture into this industry to understand the behavior of the users of their services. The results of this study will also help the existing businessmen in the sector to understand their users' wants and needs.
4.2. Recommendations. Hedonic motivational aspects could be added to the digital payment apps so as to attract customers to use e-wallets. The results of this show that there is a significant impact of performance expectancy on the intention to use digital payment apps. The users are finding these apps very easy to use. The diversified utility of these apps in making payments for various types of purchases can be highlighted in the advertising campaigns.
4.3. Future Research. The study was confined to the mobile payment app users in Vidarbha only. Future studies could involve some other target groups in various geographic areas with various sociodemographic characteristics. This study included only five factors affecting intention to use mobile payment apps, future studies may include a few more factors so as to get more insights into the factors affecting intention.

## Data Availability

The data used to support the findings of the study can be obtained from the corresponding author upon request.

## Conflicts of Interest

No potential conflict of interest was reported by the authors.

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