FACTORS AFFECTING M-PAYMENT ADOPTION IN MILLENIALS – TESTING EXTENDED UTAUT2 MODEL

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Abstract

M- Payment seems to be one of the most preferable services to adopt by the customers, which can provide the customers with a better service to enhance the effectiveness of transactions. As the progression of M-Payment is directly proportional to the adoption of M- Payment. The purpose behind this research paper is to acknowledge the assimilated factors affecting the adoption of M- Payment and validate the effect of the same with the integrated variables of the Unified Theory of Acceptance and Use of Technology (UTAUT2 extended and expended model on the parameters of Behavioral Intentions and Use Behavior. In the present study, we acknowledged a sample of 163 consumers from Raipur, Chhattisgarh, and applied 'Structure Equation Modelling (SEM)' technique to examine the research objective. Furthermore, factor analysis, model fit, and regression techniques are applied to acquire the result. The results mainly showed that behavioral intention is positively and significantly influenced by facilitating conditions and perceived credibility, whereas behavioral intention, in turn, has a significant influence and impact on the use of behavior. An M- Payment system can work more effectively by concentrating more on credibility and facilitating conditions. The present study can also be useful for service providers and regulators in developing effective M-payment implementing strategies and designs. Finally, in the last section, we discussed the research limitations and future research scope.

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1. Introduction

Building up the payment and the settlement framework online is the need of the hour. The banking and mobile companies have previously understood this need and enabled themselves towards this millennial shift (Kladkleeb and Vongurai, 2019). Versatile business is developing quickly in substance and administration concerning the availability of the internet and services (Baptista and Oliveira, 2015). The moderate accessibility of the internet on mobile phones is the critical need for the telecom sector. Indeed, the present scenario of the internet is one of the breakthroughs, and the versatile procedure will prompt the presentation of the different components, which will improve the interface progression (Mohammed and Ward, 2006). The introduction of innovative, smart, and novel technologies in the telecom sector is the priority of the telecommunication sector, which includes the M- Payment system at the first place (Alalwan et al., 2017). The successful implementation of internet business is the standard requirement and includes providing a wide range of services over mobile devices with the internet's help. Beyond the need for using M-Payment, we are also analyzing the profitability and intrinsic feelings (Palau-Saumell et al., 2019). M-Payment has been characterized by a digital exchanges procedure with a money-related value that can be accessed through the mobile telecommunication network. This payment technique includes different channels, i. e., banking, applications, and the media transmission network (Shaw and Sergueeva, 2019). Presently, this system replaced the traditional banking system and the automated teller machine and facilitated transactions through online platforms (Al-Saedi et al., 2019).

To contact the millennials who are up to this point immaculate by this concept, which includes the utilitarian benefit and the consumer's hedonic benefit. Consumer adoption behaviour is an important factor in providing accurate information to the managerial information to develop the M-Payment system (Gao and Waechter, 2017). M-Payment's adaption requires its validity in various parameters like performance expectancy, effort expectancy, social influence, habits, behavioral intentions, facilitating conditions, etc. (Moorthy et al., 2019). The sheer idolum of ease and hassle-free availability of monthly payments, delivery of clothing or food, ticketing, or simply transferring of money are a few reasons for this dynamic change in the payment methods and developing M-Payments (Moorthy et al., 2019; Rosnidah et al., 2019). In a study by Al-Saedi et al. (2019) in the context of M-Payment, they said that 'perceived risk' and 'perceived trust' are regarded as the frequent factors in adoption and also that the students (i.e., millennials) reflect the large amount of contribution in M-Payment. In their study, Johnson et al. (2018) said that M-Payment's introduction has proliferated companies significantly like Amazon, Apple, PayPal, and Google. Initially, some virtual exchange universes are exceptionally vulnerable to information interception and hacker attacks which makes the adaptability objectionable for the particular range of segment, along with mobile network work with limited bandwidth and may create potential problems, may have slow and less stable connections (Gao and Waechter, 2017). The intention of using or opting for M-Payment depends on behavioral intentions and user intentions working as dependent variables.

This model includes five (5) predictors: Ease of use, Usefulness, Security, Attitude towards mobile services, and Compatibility. These parameters supported the elements presented by Venkatesh et al. (2011) in their examination of the UTAUT model. Therefore, it is essential to comprehend the viability of conduct uses and conduct over a few extended parameters. As these studies already established the role of the parameter

mentioned above, a more comprehensive study can explain various parameters for M-Payment appropriation. However, different models have been confined to anticipating the selection and utilization of innovation. Venkatesh et al. (2011) suggested a technology acceptance model in an organizational setting called the Unified Theory of Acceptance and Use of Technology (UTAUT) and its range of 8 varied parameters/ models: Motivational Model, Theory of Planned Behavior (TPB), Theory of Reasoned Action, Technology Acceptance Model (TAM) , Combined TPB & TAM, Model of PC Utilisation (MPCU), Social Cognitive Theory, and Innovation Diffusion Theory.

Along with it, this theory suggests four (4) factors that influence intention and usage of IT (Information Technology): Performance Expectancy (PE), Effort Expectancy (EE), Facilitating Conditions (FC), and Social Influence (SI). The framework used will be determined by the degree of level of the above variables. In this manner, the comprehensive acknowledgment of UTAUT by Venkatesh et al. (2011) have incorporated three other constructs; namely, hedonic motivation, price value, and habit, and called it as UTAUT2/ extended UTAUT model. The broadened UTAUT model delivered a great improvement in social expectation and innovation, from 56% to 74%, and from 40% to 52%, respectively. Based on the above studies, this research was conducted to stir extended behavioral intentions and search for the answer to the question that routes the question from user's behavior intentions to impact of use behaviour in M-Payment adoption. Thus, as per the research question, the objective is to validate the extended UTAUT2 model to adopt m-payments.

The rapid growth of digitalisation is growing more and more popular, and the market is reacting to it correspondingly. Soon, your own hand replaces your wallet, and so do the businesses picking up the trend. M-payment has replaced the traditional ways and integrates seamlessly with WooCommerce. The paper has studied the extended UTAUT2 model and analysed FC and HM with both BI and UB. Along with that, the impact of BI is also measured with UB. The remaining factors: PE, EE, SI, HBT, PV, and PC are also restrained by BI. This gives scope to the study more in the context of the behavioral intention of adopting the technologies in the use pattern. (Oliveira et al., 2016). This work can assist the company to understand the various aspects to be considered by the service providers, and further additions can be made, which expresses the novelty of the work.

The research design is descriptive, and the questionnaire is designed based on the UTAUT2 model, though a few items were reframed according to the purpose of the study. The questionnaire of the study contains 36 questions, 33 of which are from different factors of the UTAUT2 model, and the remaining three questions were from the demography of the respondents. The questionnaire was partitioned into two areas, viz. The prior art consists of the respondent's demographic, followed by the contribution of various factors to the adoption of M-Payment. The target population of this study is the millennials of Raipur, Chhattisgarh State. Respondents are picked by non-probability judgmental sampling; what is more, they requested that they rate the survey in understanding/difference on a five-point Likert scale running from strongly disagree (1) to strongly agree (5). For the study, samples from 200 millennial respondents were collected. After excluding outliers, a total of 163 usable respondents were retained. To analyze the collected data, Confirmatory Factor Analysis (CFA) and Structural Equation Modelling (SEM) are applied to it. This paper primarily reviewed the literature of related published articles to analyze the research gap and propose the hypothesis. Subsequently, we analyzed the quoted hypothesis through the research mentioned above methodology. Finally, we closed the investigation with discoveries and constraints.

2. Review of Literature

2.1 Performance Expectancy (PE)

A comprehensive investigation of conduct aims and use conduct offers the possibility to delineate the correct reception of the M‑Payment system in carrying out day‑to‑day work and to attain the objective. The background adopted from useful measures of perceived motivation, extrinsic motivation, job joy?, outcome expectations (Social Cognition theory), and relative advantages were used (Koenig-Lewis et al., 2015; Venkatesh et al., 2011b). The study led by Min et al. (2008) said that the root of perceived motivation depends on the degree to which the client trusts it to be liberated from exertion, which is controlled by perceived usefulness and ease. In another study (Hwang and Kim, 2007; Sharma and Bansal, 2013), it was suggested that extrinsic motivation is an instrumental perception of achieving valuable outcomes apart from the activity itself. This variable is one out of six variables of the Technology Acceptance Model (TAM) (Magsamen-Conrad et al., 2015). Rosnidah et al. (2019) said that outcome expectations have relatively more advantages towards the system's performance expectancy; this is directly related to the consequences of consumer behavior. Positive outcome expectations increase the effectiveness of the job and boost the potential of performance expectancy. Accordingly, the following hypothesis is proposed:

H1: Concerning M‑payment adoption in millennials, Performance Expectancy has a significant impact on Behavioral Intention.

2.2 Effort Expectancy (EE)

Effort Expectancy (EE) is linked with the degree of simplicity of using a system. According to Eckhardt et al.'s (2009)'s theory, effort expectancy has a direct and positive effect on adopters' or non‑adopters' behavioral intention to use. When it comes to the combination of genders, as suggested by Dewan and Chen (2005); Venkatesh et al. (2011) that this variable is significant for women more, it is also believed that the effort expectancy feature is more vital in its early stages as compared to later ones (Venkatesh et al., 2012). The effort expectancy has been checked based on three parameters by Venkatesh et al. (2012) the simplicity of use (Davis et al., 1989), the apparent ease of use, and complexity (Reed and Thompson, 1991). Ease of use refers to the impact of innovation on its difficulty in use, which the client trusts to be liberated from the exertion controlled by perceived ease of use. This feature will also fetch detailed expectations of the response amongst age, gender, and experience to work (Demographic Condition). Accordingly, the following hypothesis is presented:

H2: Concerning M‑payment adoption in millennials, Effort Expectancy has a significant impact on Behavioral Intention.

2.3 Social Influence (SI)

When other individuals' opinions influence the perceived intention, it directly impacts the user' behavioral intention. As per Curran and Meuter's (2007) 's study, the impact of a new product trials is harmful as it is considered novel. Also, the positive

influence of social influence is useful in the initial days of usage. Primarily, three factors are working as root constructs for social influencing, i.e., Social factors refer to the interference of peer groups, family, and friends (Reed and Thompson, 1991); Subjective norms means the impact of most essential people upon the subjective features (Davis et al., 1989); Picture is the last factor which is straightforwardly identified with the status of one's social system (Crosse, 1999). This factor is usually utilized to expand the Technology Acceptance Model (TAM) (Dennis and Jayawardhena, 2010). Right now, attempt to relate the effect of social impact to Behavioral Intentions (BI). In light of the hypothesis, we propose:

H3: Concerning M-payment adoption in millennials, Social Influence has a significant impact on Behavioral Intention.

2.4 Facilitating Conditions (FC)

This condition will, in general, accept that a hierarchical and specialized foundation exists to help the utilization of the system—the importance of facilitating conditions increases in the absence of effort expectancy. Accordingly, it tends to be said that the nearness of both Performance Expectancy (PE) and Effort Expectancy (EE) will affect the constructs of facilitating conditions trivial (Baabdullah et al., 2014; Indrawati and Putri, 2018; Owusu Kwateng et al., 2019; Shaw and Sergueeva, 2019). Venkatesh et al. (2012) said that facilitating conditions is a core component in perceived behavioral control. Perceived behavioral control encompasses the impact of technology and resources' facilitating conditions and the self-efficiency to deal with them. Rosnidah et al. (2019) studied that facilitating conditions serve as a guide, assistance, and training when the system is ready to be used. In comparison, compatibility is the degree of matching between needs, values, and experience among potential millennial adopters (Di Pietro et al., 2015; Keramati et al., 2012). Accordingly, the construct mentioned above presents:

H4: Concerning M-payment adoption in millennials, Facilitating Condition has a significant impact on Behavioral Intention.

2.5 Hedonic Motivation (HM)

It is related to the enjoyment gained from using technology; it is also important in the acceptance and use of technology (Chen et al., 2014). The hedonic benefit is the new construct introduced by Venkatesh et al. (2011) in the extended UTAUT model, i.e. UTAUT2. This new endeavor is more buyer-centered and could likewise be thought of as a strong predictor for adopting a system. Jakkaew and Hemrungrote (2017) studied the relationship between hedonic motivation and behavioral intention and saw it as positive, and the effect is significant. Khan et al. (2017) believed that the rate of acceptance of online technologies is directly proportional to the entrainment provided by the technology. Venkatesh et al. (2011) said that the collaboration system and hedonic motivation are considered necessary to expand the belief set. A study by Sivathanu (2019) suggested that the component of hedonic benefit and utilitarian impact of consumer buying behavior is associated with attributes like sensory and experimental products. When technology is pleasurable to use, the consumer enjoys using technology, as

explained by Kladkleeb and Vongurai (2019). Accordingly, the following hypothesis is proposed:

H5: Concerning M‑payment adoption in millennials, Hedonic Motivation has a significant impact on Behavioral Intention.

2.6 Price Value (PV)

Another added variable of the UTAUT extended model is the price value, which significantly differentiates between organizational use and consumer use settings. Regarding the utilization, the shopper consistently relates it to the consumer's bearable cost (Laukkanen et al., 2008; Palau‑Saumell et al., 2019). Sharma and Bansal (2013) suggested that the consumer considers it a perceived benefit and influences the user to adopt the system. Khan et al. (2017); Palau-Saumell et al. (2019) defined price value as a cognitive trade-off between the consumer's perceived benefit and its association with a monetary cost. Value esteem is accepted to positively affect the aim of embracing the M-Payment system (Oliveira et al., 2016). Accordingly, the following hypothesis is presented:

H6: Concerning m-payment adoption in millennials, Price Value has a significant impact on Behavioral Intention.

2.7 Habit (HBT)

An individual's inclination to automatically implement behavior is explained by Jakkaew and Hemrungrote (2017). A habit is defined as doing something routinely, frequently, and consistently as repeated behavior (Venkatesh et al., 2011b). This variable is presented in the UTAUT model's augmentation and is considered an essential behavioral use component. Zhang (2010) has concluded that habit has a significant impact on the use of innovation as a social goal and has positively affected conduct expectations in M-Payment. However, Dahlberg et al., (2007) found the habit that has a negative effect on behavioral intentions. Accordingly, the following hypothesis is proposed:

H7: Concerning M‑payment adoption in millennials, the habit has a significant impact on Behavioral Intention.

2.8 Perceived Credibility (PC)

The construct of perceived credibility was introduced by Palau‑Saumell et al. (2019) as an addition to the UTAUT2 model. The construct of perceived credibility is particularly useful for assessing user acceptance towards M‑Payment as this variable is directly proportional to the safety and security of using technology. Akinci et al. (2004) accepted that apparent believability has a substantial and direct effect on intentions. It is also considered to be a significant service quality dimension (Gan et al., 2006). Seeing believability is viewed as the immediate fix to distinguish the effect on behavioral intentions (Al-Saedi et al., 2019). Accordingly, we propose the following hypothesis:

H8: Concerning M-payment adoption in millennials, Perceived Credibility has a significant impact on Behavioral Intention.

2.9 Facilitation Condition (FC) & Habit's (HBT) Impact on Use Behavior

As discussed earlier, the edge of encouraging condition and propensity significantly affects the consumer's social aim (Venkatesh et al., 2012). In our current study, we examine the effect of encouraging conditions and propensity on the system's use behavior. The external source link required for facilitating behavioral intention and use behavior is provided by facilitating conditions (El-Masri and Tarhini, 2017). In the present study, the purpose is to establish a relationship between facilitating conditions regarding the use of behavior and habits regarding behavior (Baptista and Oliveira, 2015; Raman and Don, 2013). Accordingly, we propose the following hypothesis:

H9: Concerning M-payment adoption in millennials, Facilitating Condition has a significant impact on Use Behavior.

H10: Concerning M-payment adoption in millennials, the habit has a significant impact on Use Behaviour.

2.10 Behavioral Intention's (BI) Impact on Use Behavior

El-Masri and Tarhini (2017) believed that trust works as an antecedent to behavioral intentions when adopting a system. Venkatesh et al. (2012) kept the parameters mentioned earlier in the context of behavioral intentions and relied on them to have a positive and significant relationship whereas Behavioral Intention is considered a significant input for use behavior as well. Behavioral intention is considered the best predictor for an individual's behavior pattern (Raman and Don, 2013). As a result, it is commonly assumed that social expectations directly affect use behavior regarding the system's adoption in millennials. Accordingly, the following hypothesis is proposed:

H11: Concerning M-payment adoption in millennials, Behavioral Intention has a significant impact on Use Behavior.

Consequently, we expect that all the previously mentioned parameters to have a direct/noteworthy/positive effect on the behavioral intention and the use behavior, and accordingly, the theoretical model is framed. The proposed look into the model can be seen in Figure 1, in light of which we propose the following hypothesis:

Figure 1: Proposed Research Theoretical Model
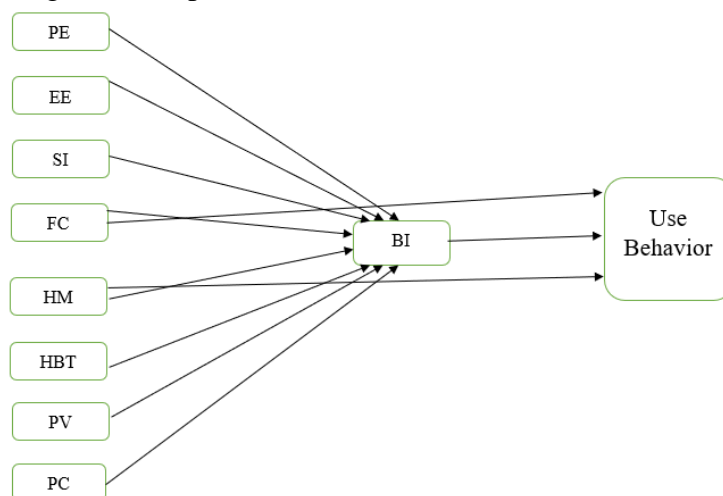
Source: Alalwan et al., 2018; Venkatesh et al., 2011b

3. Methodology

3.1 Participants and Procedures

As our current study is designed to evaluate and examine the factors impacting the millennials' intention and adoption of the M-Payment system, the present study's sample frame comprises the millennials residing in Raipur, Chhattisgarh state, who are the potential and actual users of M-Payment. To test the assumption, a developed set of 33 questionnaires is adopted from the Venkatesh et al. (2012) UTAUT2 model, which is considered an extensive model of UTAUT. The questionnaire was framed in English and circulated through mail and web page links. The questionnaire frame is composed of various factors introduced by UTAUT and UTAUT2 models: performance expectancy, effort expectancy, social influence, facilitating conditions in the context of behavioral intention and use behavior, hedonic motivation, price value, habit in the context of behavioral intention, perceived credibility, facilitating conditions regarding the context of use behavior, habit in the framework of use behavior, and behavioral intentions in the context of use behavior. The authors tried to achieve the framed objectives using the methods mentioned further. The below mentioned table will summarize all the hypotheses:

H1	Concerning M-payment adoption in millennials, Performance Expectancy has a significant impact on Behavioral Intention.
H2	Concerning M-payment adoption in millennials, Effort Expectancy has a significant impact on Behavioural Intention.
H3	Concerning M-payment adoption in millennials, Social Influence has a significant impact on Behavioural Intention.
H4	Concerning M-payment adoption in millennials, Facilitating Condition has a significant impact on Behavioral Intention.
H5	Concerning M-payment adoption in millennials, Hedonic Motivation has a significant impact on Behavioral Intention.
H6	Concerning M-payment adoption in millennials, Price Value has a significant impact on Behavioral Intention.
H7	Concerning M-payment adoption in millennials, the habit has a significant impact on Behavioral Intention.
H8	Concerning M-payment adoption in millennials, Perceived Credibility has a significant impact on Behavioral Intention.
H9	Concerning M-payment adoption in millennials, Facilitating Condition has a significant impact on Use Behavior.
H10	Concerning M-payment adoption in millennials, the habit has a significant impact on Use Behavior.
H11	Concerning M-payment adoption in millennials, Behavioural Intention has a significant impact on Use Behavior.

Indeed, three hundred questionnaires were distributed to obtain the essential data, yet only two hundred and two (i.e., 67% of the total distributed questionnaires) were returned. After excluding the outliers, only one hundred and sixty-three were found valid for further analysis. The fraction of 163 respondents is 92 (56.4 percent) were male, and 71 (43.6 percent) were female. The majority of respondents, i.e., 106 (65 percent) of the respondents, belonged to the age group between 18 and 25 years, and the rest of the 57 (35 percent) respondents belonged to the age group between 25 and 33 years. The profile of the respondents is below in Table 1.

Table 1: Profile of the Respondents

Demographic Variables	Category	Percentage (%)
Gender	Male	56.4
	Female	43.6
Age (Years)	18-25	65
	25-33	35
Experience	≤ 3 Years	50.1
	>3 Years	49.1

Source: Author's Calculation.

3.2 Instrument

In our proposed research, the model was adopted from Venkatesh et al. (2012) work on UTAUT2 Model. We added another parameter introduced by Palau-Saumell et al. (2019): perceived credibility. In our present study, we understand the validation of UTAUT2 in the adoption of M-Payment among millennials. We checked behavioral intention compatibility with model expectancy, effort expectancy, social influence, hedonic motivation, price value, facilitating conditions, habit, and perceived credibility. Along with it, the impact of perceived credibility (PC), facilitating conditions (FC), habit (HBT), and behavioral intention (BI) on use behavior (UB) is compared.

3.3 Measurement Model

Anderson and Gerbing (1988) suggested Structure Equation Modelling analysis (SEM) as a two-stage approach in their research. A similar approach is used in the current research. Our study is primarily analysed twofold through Confirmatory Factor Analysis (CFA) (Anderson and Gerbing, 1988; Davis et al., 1989) monitored by testing the Structure Equation Modelling (SEM), which has covariance and variance-based two approaches (Henseler et al., 2010).

The reliability of the scale was checked with the help of Cronbach alpha (α) values, and the excellent range is considered to be above 0.7 (Hair et al., 2013, 2012), i.e., Cronbach's Alpha (α) coefficient. The dimension of Cronbach's Alpha (α) coefficient lies between ranges of 0.805 – 0.934. The Cronbach's alpha (α) coefficient values of each factor on the scale were: Performance Expectancy – 0.913, Effort Expectancy – 0.936, Social Influence – 0.930, Facilitating Conditions – 0.947, Hedonic Motivation – 0.895, Price Value – 0.879, habit – 0.917, Perceived Credibility – 0.931, and Behavioral Intention – 0.912. Moreover, the combined alpha (α) coefficient value of all 33 items used is 0.961, representing the scale's good reliability. A high combined alpha (α) value confirms the convergent validity of the scale developed as well.

3.3.1 Confirmatory Factor Analysis

In Confirmatory Factor Analysis Construct, the reliability and validity of the measurement model were tested. The model fit indices were checked after validating the convergent and discriminant validity (Davis et al., 1989; Hair et al., 2012).

3.3.1.1 Construct reliability

The theoretical model's construct reliability was tested on PV, PE, EE, SI, FC, BI, HM, HBT, and PC. The Composite Reliability factor is calculated, which is also known as construct reliability. As per Alarcón and Sánchez (2015) and Cunningham et al. (2001), Composite Reliability (CR) is the parameter to measure the internal consistency of scale items (Bacon et al., 1995) and the typical Composite Reliability (CR) of the factors in the epitome case ought to be greater than 0.7. As per the above data, all the

factors have met the threshold limit, and based on the criteria set by Raykov, 1997, we can say that the Composite Reliability is good and justifiable. It can also be seen that the CR of Perceived Credibility (PC) (Palau-Saumell et al., 2019) is 0.931, which figure is apt to proceed. In this analysis, all the CR is between the ranges of 0.879 and 0.948.

3.3.1.2 Average Variance Extracted

Average Variance Extracted (AVE) defines the strong correlation within the factors and the distinction regarding the other factors (Alarcón and Sánchez, 2015; Hair et al., 2012; Larcker, 2012), i.e., each factor must be independent and diverse from one another. The significance of Convergent Validity (CV) requires that the Average Variance Extracted (AVE) of every factor must exceed 0.5. As seen in Table 2, the present study shows the factor loading of AVE, as all the factors are within the adequate limit and are also significant (Anderson and Gerbing, 1988). To make sure AVE is applied to all the nine factors and the statistical result, all the factors' values are above the acceptable limits, i.e., no single factor is insignificant, and all the parameters of AVE are justified.

3.3.1.3 Maximum Shared Variance

It represents the relationship of the shared value of the factors, and in order to justify the validity of the MSV parameter, we must see that it should be smaller than AVE and consider the second check for validity. If the value of MSV is smaller than that of AVE, it justifies the significance of the construct of one factor that can work efficiently independently (Alarcón and Sánchez, 2015; Farrell, 2010). In Table 2, all the values of MSV are less than AVE.

Table 2: Construct Reliability and Convergent Validity

FACTOR	CR	AVE	MSV	Maxx (H)
PV	0.879	0.710	0.623	0.905
PE	0.915	0.729	0.635	0.916
EE	0.937	0.789	0.752	0.946
SI	0.934	0.824	0.377	0.946
FC	0.948	0.820	0.752	0.951
BI	0.914	0.781	0.692	0.920
HM	0.885	0.720	0.679	0.915
HBT	0.918	0.738	0.009	0.924
PC	0.931	0.770	0.692	0.937

Note: CR = Composite Reliability; AVE = Average Variance Extracted; MSV = Maximum Shared Variance; MaxR (H) = McDonald Construct Reliability.
Source: Author's Calculation

3.3.1.4 McDonald Construct Reliability (H)

According to a previous study, the H Coefficient refers to the relationship between the measured construct and the latent construct, though the H coefficient is unaffected by the indicator's loading and can draw information from all the constructs. Maxx (H) is the subsequent confirmation of Construct Reliability (Adil and Hamid, 2017). Marx and Winne (1978) established a link between Cronbach alpha (α), Construct Reliability (CR), and McDonald Construct reliability (MaxR (H)) Viz. (Cronbach alpha (α) > Construct reliability (CR) > McDonald Construct reliability MaxR (H)). As per the study by Adil and Hamid (2017), the range of McDonald Construct Reliability (H) should be between the ranges of 0.8 or above.

3.3.1.5 KMO and Bartlett's Test

The KMO results indicated a good sampling adequacy of .904 and the results of Bartlett's Test of Sphericity were excellent, indicating a significance (p) value = 0.000, i.e., less than 0.05. This indicates a significant correlation amongst the variables being used and grouped into each factor.

Table 3: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.904
Bartlett's Test of Sphericity	Approx. Chi-Square	6768.309
	DF	300
	Significance	.000

Source: Author's Calculation

3.3.1.6 Discriminant Validity

For discriminant validity, the square root of the AVE of each factor should be greater than the correlation coefficient of each construct (Henseler et al., 2014). The results shown in Table 3 specify good discriminant validity (Hair et al., 2012). The same construct's correlation coefficient must not exceed its correlation with another construct to confirm the factor's discriminant validity (Sinha and Verma, 2020).

Table 4: Discriminant Validity (AVE)

	PV	PE	EE	SI	FC	BI	HM	HBT	PC
PV	**0.842**								
PE	0.628	**0.854**							
EE	0.630	0.776	**0.888**						
SI	0.559	0.544	0.502	**0.908**					
FC	0.599	0.797	0.867	0.541	**0.906**				
BI	0.745	0.742	0.732	0.614	0.791	**0.883**			
HM	0.789	0.724	0.760	0.600	0.779	0.823	**0.849**		
HBT	-0.059	-0.023	0.038	0.020	0.049	0.000	0.016	**0.859**	
PC	0.774	0.644	0.682	0.612	0.640	0.832	0.824	-0.095	**0.878**

Note: Bold and diagonal values represent the square root of each factor's AVE value, whereas inter-correlation between the latent construct is depicted in off-diagonal values.
Source: Author's Calculation.

In Table 3, the Discriminant Validity of all the features is reasonable and approved by the parameters of Discriminant Validity (Hair et al., 2016; Larcker, 2012). As the square roots of same correlation is greater than other correlation coefficient Viz. PV [0.842 > (0.628, 0.630, 0.559, 0.599, 0.745, 0.789, -0.059, and 0.774)], PE [0.854 > (0.776, 0.544, 0.797, 0.742, 0.724, -0.023, and 0.644)], EE [0.888 > (0.502, 0.867, 0.732, 0.760, 0.038, and 0.682)], SI [0.908 > (0.541, 0.614, 0.600, 0.020, and 0.612)], FC [0.906 > (0.791, 0.779, 0.049, and 0.640)], BI [0.883 > (0.823, 0.000, and 0.832)] HM [0.849 > (0.016, and 0.824)] and HBT [0.859 > -0.095]. The parameter of Discriminant validity is the confirming measurement model.

3.3.1.7 Model Fit (CFA)

Confirmatory Factor Analysis (CFA) was conducted, using AMOS, on the measurement model (Preacher and Hayes, 2008) derived by linking the latent factors identified in the UTAUT2 Model (Adil and Hamid, 2017; Sinha and Verma, 2020). The Goodness of Fit index is a measure of how well the defined model fits the data (Davis et al., 1989; Fornell and Larcker, 1994; Hair et al., 2013, 2012; Larcker, 2012).

The suggested value for chi-square ($\chi 2$) and degree of freedom (DF) ratio is 1 to 3 intended for a good fit in the case of factor analysis. The value was calculated at *1.823*, which indicated excellent model fit (Anderson and Gerbing, 1988). The Comparative Fit Index (CFI) and Normal Fit Index (NFI) value was calculated at *0.934* and *0.866*, which represents a good model fit. The suggested value of the Parsimony Goodness of Fit index (PGFI) must 0.5 (McDonald and Marsh, 1990; Mulaik et al., 1989). PGFI value was equal to 0.633, which indicated an acceptable value and good model fit. The Root Mean Square Residual (RMR) value was calculated at 0.047, and the Root Mean Square Error of Approximation (RMSEA) was calculated at 0.071, both being well within and satisfying the model fit criteria. The Chi-square ($\chi 2$) value was 780.176, and the Degree of Freedom (DF) was 428 at p-Value, i.e., Probability Level, equal to 0.000, which was less than 0.05 and hence the measurement is in an acceptable range.

3.3.1.8 Factor Loadings

As factor loading is majorly part of Exploratory Factor Analysis (EFA) (Adil and Hamid, 2017; Farrell, 2010) which is used to justify the scale, generally it should be above 0.5/0.6 in range to be acceptable, though in the present study we opted for a well-developed scale which was already used by Venkatesh et al. (2011). Table 4 represents all the questionnaire objects' factor loadings into their relevant factors, as per the UTAUT2 model.

Table 5: Factor Loadings

Factor	Questionnaire Item	Loading
Performance Expectancy (PE)	I believe I can save time using m-payment.	.875
	I believe that using m-payment increases my productivity when making payments.	.842
	I believe that using m-payment helps me complete my payments more quickly.	.851
	I find m-payment useful in my daily life when making payments.	.847
Effort Expectancy (EE)	I believe it is easy for me to become skilful at using m-payment.	.831
	I find m-payment easy to use.	.926
	I believe that my interaction with m-payment is clear and understandable.	.929
	I believe that learning how to use m-payment is easy for me.	.863
Social Influence (SI)	People who are important to me think that I should use m-payment.	.856
	People who influence my behavior think that I should use m-payment.	.953
	People whose opinion I value prefer that I use m-payment.	.912
Facilitating Conditions (FC)	I believe m-payment is compatible with other technologies I use.	.877
	I feel comfortable using m-payment.	.899
	I have the necessary knowledge to use m-payment.	.911
	I have the necessary resources to use m-payment.	.935

Factor	Questionnaire Item	Loading
Behavioral Intention (BI)	I will always try to use m-payment in my daily life.	.849
	I plan to continue to use m-payment frequently.	.920
	I intend to continue using m-payment in the future.	.880
Perceived Credibility (PC)	When using m-payment on my smartphone, I believe that my information is kept confidential.	.883
	I believe that my transactions are secure.	.927
	I believe that my privacy will not be breached.	.833
	I believe that the m-payment environment is safe.	.865
Habit (HBT)	The use of m-payment has become a habit for me.	.825
	I am in favor of using m-payment.	.862
	I must use m-payment.	.910
	Using m-payment on my smartphone has become natural to me.	.837
Price Value (PV)	I can save money by using m-payment.	.774
	M-payment services are reasonably priced.	.821
	M-payment is a good value for money.	.925
Hedonic Motivation (HM)	I believe that using m-payment is amusing.	.774
	I believe that using m-payment is pleasant.	.828
	I believe that using m-payment is very interesting.	.936

Source: Author's Calculation.

In Table 4, all the values of factor loading are above the threshold limit, and this justifies the acceptability of the Factor loadings of the questionnaire construct and the construct validity.

3.3.2 Structure Equation Modelling (SEM)

Structure Equation Modelling is a multiple regression technique used to analyze the partial least square (Hair et al., 2016; Preacher and Hayes, 2008). The Structural model derived by treating the Behavioral Intention (BI) and Use Behavior (UB) as Dependent variables and the remaining factors as independent variables as per the study's hypotheses derived based on the UTAUT2 model, was validated using AMOS.

3.3.2.1 Model Fit (SEM)

The recommended value for chi-square ($\chi2$) and degree of freedom (DF) ratio is 1-3 for a good fit factor analysis. The value was calculated at *1.832*, which indicated excellent model fit (Anderson and Gerbing, 1988). The Comparative Fit Index (CFI) and Normal Fit Index (NFI) value was calculated at *0.928* and *0.858*, representing an acceptable model fit. It is considered that Goodness of Fit (Anstey et al., 2001) should be in between the scale of 0.8 to 0.9. Also, when the value exceeds 0.9, then it is considered excellent. In our measurement, both the figures are in an acceptable range. PGFI value was equal to 0.631, which indicated as an acceptable value and good model fit. The Root Mean Square Residual (RMR) value was calculated at 0.048, and the Root Mean Square Error of Approximation (RMSEA) was calculated at 0.072, indicating a good model fit. As the value of RMR and RMSEA should be less than 0.8 in order to become acceptable (Chai and Draxler, 2014). The Chi-square ($\chi2$) value was 837.443, and the Degree of Freedom (DF) was 457 at p-Value, i.e., Probability Level, equal to 0.000, which was less than 0.05 and hence the measurement is in an acceptable range.

3.3.2.2 Structure Model

As all the regression weights are acceptable, all the parameters justify the significance of factor covariance. Standard Error (SE) represents the distance (average) that the observed from the regression line. The achieved result is significant at the 5 percent probability of error level (when p-Value is at 0.05). Standard Regression weight is commonly known as a standardized (regression) coefficient or beta coefficient (β). It is a standardized test, and the variance is 1 for both dependent and independent variables.

Table 6: Regression Analysis

Hypothesis	Regression Weight	Standard Error (SE)	Standardized Regression Weight	t-value	Sig. (P-value)	Result
PE → BI	0.150	0.102	0.131	1.469	.142	**Rejected**
EE → BI	-0.199	0.129	-0.171	-1.535	.125	**Rejected**
SI → BI	0.032	0.057	0.034	0.558	.577	**Rejected**
FC → BI	0.442	0.131	0.420	3.388	.000	**Accepted**
HM → BI	0.065	0.140	0.059	0.464	.643	**Rejected**
PV → BI	0.118	0.092	0.117	1.292	.196	**Rejected**
HBT → BI	0.042	0.051	0.038	0.817	.414	**Rejected**
PC → BI	0.376	0.090	0.434	4.154	.000	**Accepted**
FC → UB	-0.006	0.162	-0.005	-0.36	.971	**Rejected**
BI → UB	0.500	0.157	0.427	3.185	.001	**Accepted**
HBT → UB	0.047	0.098	0.036	0.478	.633	**Rejected**

Note: The results are based on two-tailed tests. P-value at 5 % error level.
Source: Author's Calculation.

It is observed that the Facilitating Condition (FC) has a significant impact on Behavioral Intention (BI) with a regression weight of .442 at p < 0.05, and Perceived Credibility (PC) too has a significant impact on Behavioral Intention (BI) with a regression weight of .376 at p < 0.05. In the case of use behavior, it is observed that only behavioral intention (BI) has a substantial impact on the use behavior through a regression weight of .500 at p < 0.05. For the association between Performance Expectancy (PE) in perspective to Behavioral Intention (BI), the path coefficient (β) value is .131, the t-value is 1.469 (i.e., less than 2), and the p-value for this association is 0.142. Hence, we are not able to accept the H1 hypothesis.

Further, in the case of Effort Expectancy's (EE) relationship with Behavioral Intention (BI), where it is functioning as a dependent variable in the existing case, it can be understood that the path coefficient (β) value is -0.171, the t-value is -1.535 (i.e., less than, 2), and the p-value for this association is 0.125. Hence, we discard the H2 hypothesis. In the context of the relationship between Social Influence (SI) and Behavioral Intention (BI) in perspective to the adoption of M-Payment is compared in path coefficient (β) value is 0.034, the t-value is 0.558 (i.e., less than, 2), and the p-value for this association is 0.577. Based on this result, hypothesis H3 is not acceptable.

Structural Relation between Facilitating Condition (FC) and Behavioral Intention (BI) with respect to the adoption of M-payment is compared in path coefficient (β) value is 0.420. The t-value is 3.388 (i.e., more than, 2), and the p-value for this association is 0.000. Hence, this analysis proved that the effect of FC on BI is significant, and we accept the H4 hypothesis.

Additionally, in order to analyze the relationships between Hedonic Motivation (HM), Perceived Value (PV), and Habit (HBT) in relation to Behavioral Intentions (BI) where HM, PV, and HBT are independent variables. In the current study, the path

coefficient (β) values are 0.059, 0.117, and 0.038, respectively, whereas the t-values are 0.464, 1.292, and 0.817 (i.e., all the values obtained are less than 2), and the p-value for this association is 0.643, 0.196 and 0.414 respectively. All the results at the 0.05 probability level do not qualify for the threshold limit. Based on this result hypothesis, H5, H6, and H7 are rejected.

About path coefficient analysis: Perceived credibility (PC) in context to Behavioral Intention (BI), the value of Standard Regression Weight is 0.434, t-value is 4.154. It is to be noted that the qualifying limit for the t-value parameter is at 2, and at 0.05 level of probability, the current p-value is 0.000 as the acquired value is within the criteria of acceptable limit. Thus, based on the result of the hypothesis, we accept the H8 hypothesis, and it can also be said that Perceived Credibility (PC) has a substantial impact on Behavioral Intention (BI).

Finally, for the last three hypothesis H9, H10, and H11, the structure relationship of Facilitating Condition (FC), Behavioral Intentions (BI), and Habit (HBT) concerning Use Behavior (UB), at this point, are independent variables, and the UB is the dependent variable. In the current study, the path coefficient (β) values are -0.005, 0.427, and 0.036, respectively, whereas the t-values are -0.036, 3.185, and 0.478 (i.e., two values are below two and another one exceeds 2), and also the p-value for this relationship is 0.971, 0.001, and 0.633 respectively.

The R^2 value for Behavioral Intention (BI) was calculated to be 0.821 indicating that the Variance is explained at 82.1 percent (by FC and PC). According to the research of Venkatesh et al. (2012), Behavioral Intention (BI) can explain all the variables up to 70 percent of the time. Although the R^2 for Use Behavior (UB) was calculated at 0.18, i.e., 18 percent of the Variance is explained by BI, which is suggestively less than that of the UTAUT2 model, which quoted it at 30 Percent (Venkatesh et al., 2012, 2011).

4. Findings and Conclusion

The current study is aimed at providing a critical, comprehensive, and broad synthesis of the relevant literature available over the time span of the previous two decades on the acceptance of the M-Payment System. UTAUT2 considers performance, effort, social influence, facilitating conditions, price value, habit and hedonic motivation. Perceived credibility was considered, keeping in mind the safety and security feature, which is one of the first things that arises in the observance of a user when making a payment or any other financial transaction over technology.

These factors/determinants have been identified using many technology adoption models like Theory of Reasoned Action (TRA), Technology Acceptance Model (TAM), Motivational Model, Theory of Planned Behavior (TPB), Combined TAM and TPB, Unified Theory of Acceptance & Use of Technology (UTAUT) and extension of UTAUT, UTAUT2, etc. These theories and models have considered various factors like intention, social influence, value, expectancy, habit, etc., to recognize what effects technology adoptions has.

The analyzed study was categorized in the parameters of the extended UTAUT2 Model (Venkatesh et al., 2011), including the additional parameter 'Perceived Credibility', taken from the study conducted by Palau-Saumell et al. (2019). Based on the regression results from the structural model, it was observed that hypotheses H4, H8, and H10 are accepted, whereas hypotheses H1, H2, H3, H5, H6, H7, H9, and H11 are rejected. Facilitating Condition (FC) and Perceived Credibility (PC) were found to have a significant and positive impact on the Behavioral Intention (R^2 value = .821) of

millennials to adopt and use m-payment technology, while Behavioral Intention (BI) was established to have a substantial effect on Use Behavior (R Square value = .18) of millennials towards the adoption of m-payment technology. Therefore, the present study adopted in the present study cannot define the Use Behavior and the standardized UTAUT2 model defined by (Venkatesh et al., 2012).

This study's outcomes were discretely different from what has been recognized from the literature review as many studies in the past have accepted these hypotheses. Hence, what can be implied here is that, though the factors taken into consideration in the UTAUT2 model are critical determinants of technology adoption, not all the determinants need to have a significant impact on behavioral intention and use behavior concerning all the technologies that could be authenticated using the different technology acceptance models, in this case, UTAUT2. Another thing to note here is that the R^2 value of behavioral intention (0.821) is higher than the UTAUT2 model's standard value (around 0.7), which implies that safety, security, and resource knowledge heavily influence millennials' adoption of M-Payment.

5. Managerial Implications to practice

The outcome from the current study will intensely contribute to the domain of M-Payment/E-Payment systems, payment gateways, the payment sector of banking and other financial institutions, and companies working towards millennials. Firstly, this study evaluates and critically reviews all the relevant technology adoption theories and their implications   have a positive and significant impact in an organizational context (Palau-Saumell et al., 2019; Venkatesh et al., 2012, 2011a). However, the matter of great concern is the consequence and effect of the same in the consumer context. As the UTAUT2 model was originally designed to assess novel technologies' impact, it served as an ideal theory to opt for in our current theoretical model. Secondly, after evaluating all the parameters in the UTAUT2 vast scale, the results revealed that, with the exception of Facilitating Conditions (FC), Perceived Credibility (PC), and Behavioral Intentions (BI), all other factors are not very acceptable in millennials for M-Payment. Thus, it could be referred to as the reason for the slow adoption of M-Payment. Hence, the company could consider strengthening these parameters. Thirdly, as one of our parameters adopted (Palau-Saumell et al., 2019) is Perceived Credibility, and the result of the next parameter is accepted as per the results of the test applied on it, and this parameter elevates the service of a security issue (Akhlaq and Ahmed, 2013; Venkatesh et al., 2012) as the involvement of money makes it more credible. Fourthly, improving the acceptable factors viz. FC, PC, and BI more and working to make effective the rejected factors viz. PE, EE, SI, HBT, PV, and HM can increase the chances of payment preference adoption in millennials.

Finally, this research draws an opinion on working more towards adopting M-Payment by concentrating on the acceptable factors that will lead to future growth and development, i.e., peer-to-peer payment, rewards points, replacement of plastic cards, and shifting towards virtual banks. This will also help   stakeholders like the mobile payment service provider, merchants, consumers, and financial institutions. As the banking system was previously excluded from direct service provisioning, and in the present scenario, the stakeholders are working on a way of looking at the advantages of deploying mobile payment. The performance analysis in the framework of UB and BI will result in a wider penetration of the M-Payment adoption system.

6. Limitations and future research direction

The principle focal point of the current investigation was to apply the quantitative approach to satisfy the objective. Despite the fact that the aftereffect of the study gives different viable ramifications, there are a few shortcomings and limitations which should be acknowledged. Hence, after working on the present study, the following recommendations and suggestions are made: First and foremost, it is observed that the results of the research have contradicted many previous results from similar research. Thus, research with a sample size larger than this study could be conducted to validate the consequences of this study and observe if the equivalent is rehashed with a larger sample. Second, the only purpose of this study was to validate the UTAUT2 model in Raipur, Chhattisgarh.

Consequently, the target population of this study was the millennials of Raipur city only. Therefore, these results could not be generalized over a larger demographic as it is seen that the aftereffects of innovation and technology adoption studies have differed around the world and across different demographics. However, the authors think it is crucial to provide a possible different result when some demographic attributes of the respondents are considered, especially in terms of gender and age. It would make your research more interesting and could lead to more concrete recommendations. Third, the data analysis in this study has not considered the moderating role that age, gender, and professional experience of respondents could play in directing the connections between the extraordinary constructs under test. Accordingly, further research is required to change the gathering and population for study. Fourth, multi-group moderation could be used to identify the group differences that may exist between various demographic attributes of the respondents, for example, gender, age, experience, etc.

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