

E-wallet Adoption amidst COVID Era: An Empirical Intervention with Extended UTAUT2

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Abstract

The aim of the study is to examine the factors affecting adoption of e-wallets in COVID era. UTAUT 2 model was adapted in the study to analyse behavioral intention of users towards e-wallets. Additionally, impact of three constructs namely, perceived risk, trust and perceived COVID threat along with the recognized factors of UTAUT 2 model was studied on behavioral intention of users towards e-wallets. Primary data was collected through questionnaire method from 358 respondents from Punjab (India). The results revealed that all the constructs of UTAUT 2 model influenced behavioural intention to adopt e-wallets except hedonic motivation. Perceived risk was not found as determinant of behavioural intention to adopt e-wallets. Perceived COVID threat was found to be the most influential factor in predicting the behavioural intentions regarding e-wallets followed by trust and social influence. The decisions about marketing and regularizing of e-wallets in terms of its features, applications and its performance can be taken considering the findings of this study.

Keywords: E-wallets, Behavioural intention, COVID-19, UTAUT 2, PLS SEM.

Introduction

Dotcom bubble of 2000 flooded the market with new scenarios leaving a long-lasting impact on the society, economy, and global trade. The payment transactions used to dangle upon banking sector, which resulted in time lags and extended settlement duration. Dawn of the era of information technology paved the way for more convenient, easy, and simple methods to settle payments. E-wallets, an online mode of payment, have garnered a lot of interest and accolades in the recent past. It is estimated that digital wallets will emerge as a huge market worth US\$3.5 trillion by the end of 2023 showcasing an increase of 24% in contrast to previous year.

Following the global trend, India has also showcased a tremendous rise in the areas where digital wallets are being used. From eating at a restaurant to purchase of medicines, from buying groceries at the locality shop to online shopping, from transferring funds to the families to small business fund transfers, digital wallets like Google Pay, Paypal One touch, Paytm, Amazon Pay, JIO money and Airtel Money have become quite popular. In 2018, 73.9 million people from India were using the mobile wallets in India (Behani, 2021).

From the first E-wallet in India (Oxygen) in 2004 to plethora of e-wallets in 2021, the industry has travelled a long road to gain success. Lack of trust and confidence in the early bird sites was one of the reasons for the staggered growth of this industry. Fear of digital risks and cyber fraud invaded people's trust and confidence in the digital payment systems (Ofori et al., 2017; Darmiasih & Setiawan, 2020). In 2016, demonetization resulted an upsurge in the demand of digital wallets where the downloads for Paytm increased by 200% and its usage by 435% (Pandey, A., & Chaurasia, A. (2017). Covid-19 pandemic is one of the reasons because of which the market has witnessed upsurge in number of people opting for digital wallets to transit towards cashless economies. From 901 million people in 2019, users of digital wallets increased to 1.5 billion in 2021 (Gourtsilidou, 2021; Jain & Chowdhary, 2021). In the pandemic times, research validated the direct correlation between usage of e-wallet and perceived security and social influence (Jesuthasan & Umakanth, 2021).

The current study aims to investigate the factors influencing e wallet adoption in India during COVID times. After reviewing all the existing models and theories, UTAUT 2 model is adopted for the current study to analyse factors influencing behavioral intention of users towards e-wallets. Additionally, impact of three constructs namely, perceived risk, trust and perceived COVID threat along with the recognized factors of UTAUT 2 model was also studied on behavioral intention of users towards e-wallets. Many studies have been conducted that had investigated various factors impacting the behavioral intention of consumers to use e-wallets (Hongxia et al., 2011; Qasim & Shanab, 2015; Slade et al., 2015; Chi, 2018; Pertiwi et al., 2020; Yang et al., 2021; Bommer et al., 2022). Some of the studies have explored the impact of UTAUT model 2 factors on behavioral intention of consumers to use e-wallets in the era of COVID 19 (Chawla, 2020; Kraenzlin et al., 2020; Revathy, & Balaji, 2020; Undale et al., 2020; Jain & Chowdhary, 2021; Jesuthasan, & Umakanth, 2021; Ly et al., 2022). But the available studies have identified determinants of behavioral intention of consumers to use e-wallets in Covid era. Perceived COVID threat itself can also be a determinant in adoption of e-wallets. Therefore, this study attempts to extend UTUAT 2 Model and assess the impact of recognized factors of UTAUT 2 model along with three additional

constructs namely, perceived risk, trust and perceived COVID threat on behavioral intention of users towards e-wallets. As Covid worries have returned due to surge in pandemic cases in China and a few other countries including India, the present study can offer useful insights for the digital wallets service providers to device their future strategies.

Review of Literature

Extensive literature on behavioral intention to adopt e-wallets was reviewed, and it was discovered that many factors such as effort expectancy, performance expectancy, social influence, hedonic motivation, risk, trust, and price value have a significant impact on e-wallet adoption.

Effort Expectancy

Venkatesh et al. (2003) defined effort expectancy as the convenience associated with the use of technology. Effortless usage stimulates the intention to use a new system (Alalwan et al., 2018). Pertiwi et al. (2020) confirmed that the Y Generation (born between 1989 to 2000) found that e wallet is a convenient payment system thereby increases their intention to use it more often. Amoroso & Watanabe (2012), Tenk et al. (2020) and Al-Saedi et al. (2020) also confirmed that effort expectancy has positive and significant association with behavioural intentions. Chi (2018) concluded that education level affects the effort expectancy and results in significant impact on the users' intention. Tenk et al. (2020) considered that effort expectancy is the strongest predictor of behavioural intentions. Contrary to it, Alalwan et al. (2018) found out that there is inverse relation between effort expectancy and intention to use any kind of new technology. Hongxia et al. (2011), Slade et al. (2014) and Widodo et al. (2019) concluded that ease of use is not a significant factor determining usage of new technology. Singh et al. (2020) and Yang et al. (2021) found that people are willing to use new technologies if that can be used without any hiccups. So, to get conclusive evidence, below mentioned hypothesis is framed:

H1 Effort expectancy positively influences behavioral intention to use e-wallets.

Performance Expectancy

Davis (1989) defined perceived usefulness as the perception of people that their performance will improve by using technology. A study conducted in Japan with respect to adoption of mobile wallet revealed that usefulness significantly affects the users' intention (Amoroso and Watanabe, 2012). This is further corroborated that usefulness of technology is of paramount importance while determining the attitude of users towards adoption of e payments (Tella & Olasina, 2014). Al Saedi (2020) explored that performance expectation is the most predictable variable for studying behavioural intentions of using mobile payments. Karjaluoto et al. (2010) confirmed that usefulness is antecedent to mobile banking adoption in Germany. Users are intended to adopt new technology only if they find it useful, convenient and it enhances their productivity (Amoroso & Watanabe, 2012; Qasim & Shanab, 2016; Bailey et al., 2017; Pertiwi et al., 2020). Thus, on the same lines, following hypothesis is framed:

H2 Performance expectancy positively influences behavioral intention to use e-wallets.

Social Influence

Social influence refers to the degree of peer pressure in persuading a person to use a new technology (Venkatesh et al., 2003). The user intensely relies on the feedback of his social circle regarding adoption of a new technology (Slade et al., 2014). Social factors are considerable determinant of behavioural intentions with regard to mobile payments (Hongxia et. al, 2011). Yang et al. (2021) discovered that social influence is the second most influential determinant of behavioural intentions. Puschel et al. (2010) and Tenk et al. (2020) brought out that people tried out new technology under the social persuasion. Whereas Lwoga (2017) concluded that social influence did not impact the users' intention for mobile payments. Widodo et al. (2019) and Tun (2020) found that the social factors are insignificant in determining the intention of the users to use mobile wallets. The other side of the coin is that people prefer to use new technology when their social group is also using the same technology (Tarhini et al., 2014 & Thanabordeekij, 2019). Singh et al. (2020) examined that recommendation of family, friends and peers is a prominent factor in persuading a user to use or adopt a new technology. Social influence is supportive in depicting the behavioural intentions of users, so following hypothesis is framed:

H3 Social influence positively influences behavioral intention to use e-wallets.

Facilitating Conditions

The technical and infrastructural support facilitate the usage of new digital technology (Thompson et al., 1991). Venkatesh et al. (2012) defined facilitating conditions as the degree of information technology support for using a new technology. The users believed that they are willing to use a new technology when it is backed by technical support, easy access and internet availability (Hossain et al., 2017). Amoroso & Watanabe (2012) concluded that good facilitating conditions inspired the people of Japan towards using mobile payments. This was further corroborated that facilitating conditions have significant positive impact on the behavioural intentions of the users (Widodo et al., 2019). Contrary view is presented by Hongxia et al. (2011), Slade et al. (2014), Tun (2020) and Yang et al. (2021) who poised that guidance, training and technical support is insignificant in affecting the behavioural intentions. But extensively facilitating conditions has a significant and positive impact on users' behavioural intentions (YU, 2012; Zhou et al., 2012). Thus, the following hypothesis is formed:

H4 Facilitating conditions positively influences behavioral intention to use e-wallets.

Hedonic Motivation

Hedonic motivation is the pleasure which user expects out of using a technology (Venkatesh et al., 2012). Users considered hedonic motivation as the strongest predictor in determining the behavioural intentions for adopting a new technology (Venkatesh et al., 2012; Alalwan et al., 2018). Kim et al. (2008) revealed that people prefer to use

technology if they enjoy using the same. The role of hedonic motivation is trivial in determining the users' intentions as explored by Slade et al. (2014) and Widodo et al. (2019). Whereas Venkatesh et al. (2012) found that hedonic motivation is the second most influential factor in establishing its relationship with the behavioural intentions. Thus, the hypothesis formed is:

H5 Hedonic motivation positively influences behavioral intention to use e-wallets.

Price Value

The consumers bear the monetary burden for using a technology and it might have impact on the decision relating to its use, so it was included in UTAUT 2 model as an extension to earlier model. Venkatesh et al. (2012) defined price value as agreement between the benefits derived and the cost incurred to use a particular technology. Perceived financial cost is a considerable factor affecting the users' decision to use a new technology (Laurin and Lin, 2005). Al-Saedi et al. (2020) validated that perceived financial cost has negative impact on behavioural intentions. Thus, the below mentioned hypothesis is framed:

H6 Price value negatively influences behavioral intention to use e-wallets.

Habit

Venkatesh et al. (2012) introduced habit as a determinant of behavioural intentions of a user in context of technology. It is defined as a degree of repetitiveness of behaviour. The users behave automatically to a particular technology based on their past experiences (Kim and Malhotra, 2005). Habit is the most influential factor affecting the behavioural intentions (Venkatesh et al., 2012; Widodo et al., 2019). Prior research confirmed that repeated use of a technology is antecedent to behavioural intentions (Lankton et al., 2010; Slade et al., 2014). Thus, the following hypothesis is formed.

H7 Habit positively influences behavioral intention to use e-wallets.

Perceived Risk

Although perceived risk is not a construct of UTAUT 2 model, but many studies have extended the UTAUT 2 model and included perceived risk as an addition. Users are concerned about the security of their information, and they consider it as an important factor affecting their intention to use or adopt a digital platform for making payments (Koenig-Lewis et al., 2010; Yang et al., 2012; Slade et al., 2013; Slade et al., 2014, Singh et al., 2020). But there are few studies which represent a contradictory view, indicating that risk is either having no effect (Lwoga, 2017) or having insignificant effect (Hongxia et al., 2011; Widodo et al., 2019; Tenk et al., 2020) on behavioural intentions. Chi (2018) explored that risk is a matter of concern for low-income group, but higher income group is less concerned about the security of information thereby not affecting their decision to use a new technology. So, the following hypothesis is framed:

H8 Perceived risk negatively influences behavioral intention to use e-wallets.

Trust

In terms of electronic payments, users are hesitant to use these mediums as they feel that their personal and financial information may be misused. They don't trust the security and privacy policies of the vendors. Trust is the backbone of any virtual relationship between the user and the vendor, and it is also a considerable factor affecting the behavioural intentions of users (Lwoga, 2017). Trust is considered as an extension to UTAUT 2 Model (Kim et al., 2009; Amoroso & Watanabe, 2012; Alalwan et al., 2018; Al-Saedi et al., 2020; Yang et al., 2021). The extant literature supports that trust is having a significant and positive impact on the behavioural intentions of the users (Slade et al., 2014; Qasim & Shanab, 2015). Extending further Tun (2020) proved that trust affects the behavioural intention more than the other factors. Thus,

H9 Trust positively influences behavioral intention to use e-wallets.

Perceived COVID Threat

Outbreak of pandemic COVID-19 resulted in lockdown position across the globe. Physical money can transmit virus from the infected person to the healthy one and thus, WHO emphasized on using digital money. Aji et al. (2020) found that use of digital payments is considered as the best solution to avoid transmission of virus. E-wallets appeared to be a safer option for maintaining the mandatory requirements for preventing the outspread of Covid (Revathy & Balaji, 2020). Chawla (2020) concluded that uncertainty created in the minds of people with the antidote of this pandemic, pushed further the use of digital payment platforms. Kraenzlin et al. (2020) examined that with the outraged spread of COVID-19, Swiss people are marching towards cashless economy. Perceived COVID threat is a predictor of health-related protective behavior that drives people to adopt preventive measures (Clark et al., 2020; Deng et al., 2020). Persons who think that COVID presents a risk for their health may prevent future health risks emerging from the use of cash payments. These people will regard digital payments as a protective health behavior that might lower their chance of contraction of the virus (Sreelakshmi and Prathap, 2020; Daragmeh et al., 2021). Thus, based on the above discussion, the following hypothesis is formulated:

H10 Perceived COVID threat positively influences behavioral intention to use e-wallets.

Figure 1 depicts the conceptual framework for the research study displaying hypothesized relationships.

Research Methodology

Data Collection and Sample Design

Primary data was collected through a structured questionnaire floated to respondents through google platform. Questionnaire is divided into two sections; section A comprises of questions assessing the behavioural intentions of respondents on a five-point Likert scale from strongly disagree to strongly agree and section B deals with the demographic profile of the respondents. Past studies have asserted that whenever there

is difficulty in reaching the target population (Wagner et al., 2014) and data is to be collected from a specific population (Nardi, 2006), non-probability-based sampling method is to be used for data collection. As the nature of population is specific (e-wallet users) and sampling frame is not available, hence judgment sampling was used. A total of 358 valid responses were received and used for statistical enquiry. Table 1 presents demographic profile of the respondents of the research study.

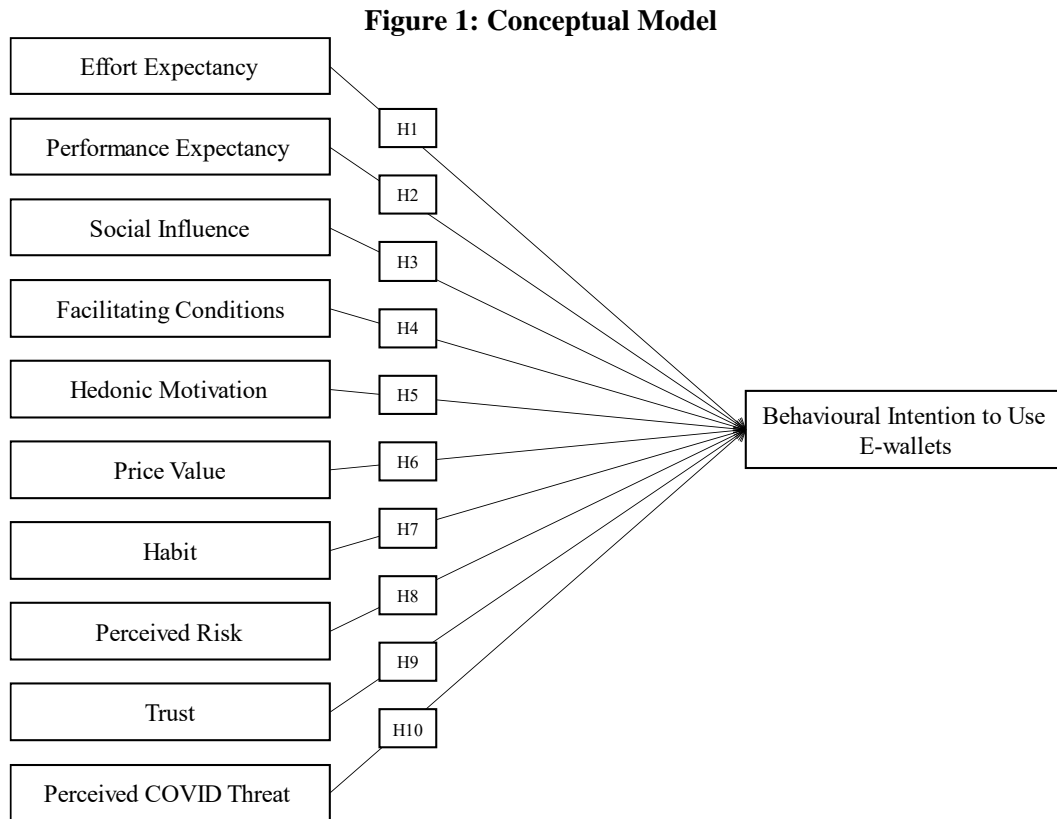


Table 1: Demographic Profile of Respondents

Variable	Category	Frequency	Percentage
Gender	Male	225	62.8
	Female	133	37.2
Age	Below 25	197	55
	25-50	81	22.6
	Above 50	80	22.4
Educational Qualification	Undergraduate or lower	89	24.8
	Graduate	113	31.5
	Postgraduate or higher	156	43.7
Annual Income	Below 5 lakhs	127	35.5
	5 lakhs to 10 lakhs	175	48.9
	10 lakhs and above	56	15.6

Survey Instrument

A measurement scale for the present study was devised after an extensive analysis of the pertinent literature, in which various constructs and their corresponding items were

chosen. To confirm the validity of various latent constructs and their items and to certify that dimensions of the constructs are suitably worded and understandable, the present study deployed pre-testing methods, such as semi-structured interviews of two academic experts and two financial experts. Their suggestions and opinions were considered to the greatest extent possible without affecting the nature of the questions. The measurement items and their sources of adoption are shown in Table 2.

Data Analysis Methods

PLS-SEM approach, being casual predictive, can explain casualty among constructs along with analysing predictive quality of the results. This technique can analyse complex models comprised of many indicators (Hair et al., 2019). PLS SEM is considered better than maximum likelihood method if the objective is to extend the existing theory (Hair et al., 2011; Ringle et al., 2015). In this research, as the objective is to extend UTAUT 2, PLS-SEM is the most suited technique. Smart PLS software (Version 3) has been used for data analysis.

Table 2: Operationalisation of Constructs

Constructs	Source	Indicator	Statements	Mean	S. D
Effort Expectancy (EE)	Davis (1989)	EE1	E- wallet is easy to use.	3.606	1.135
		EE2	The use and functions of e-wallet are clear and understandable.	3.615	1.173
		EE3	Using e-wallets save the time and energy	3.615	1.144
		EE4	It is easy to understand the operations of e wallet	3.637	1.185
		EE5	The operations of e-wallet are controllable	3.631	1.157
Performance Expectancy (PE)	Davis (1989)	PE1	It is convenient to make payments through e wallets	3.511	1.1
		PE2	E-wallet helps in speedy payments	3.419	1.118
		PE3	The usage of e- wallet improves my efficiency in handling financial transactions	3.469	1.183
		PE4	E-wallets are better than traditional methods	3.455	1.097
		PE5	Usage of e-wallets increases the productivity	3.402	1.114
Social influence (SI)	Venkatesh et al. (2012)	SI1	People who are important to me would recommend using an e- wallet	3.101	1.023
		SI2	My family members and friends use e-wallet	3.229	1.123
		SI3	My family and friends influenced me to use an e-wallet	3.235	1.063

Constructs	Source	Indicator	Statements	Mean	S. D
Facilitating Conditions (FC)	Venkatesh et al. (2012)	FC1	The support required to use an e-wallet is adequate/adequately provided	3.522	1.12
		FC2	I have knowledge and internet facility to use an e-wallet	3.534	1.092
		FC3	The software and hardware required to use an e-wallet is easily accessible	3.592	1.132
		FC4	The e-wallet services are compatible with other technologies that I use	3.528	1.077
		FC5	Backend support from my service provider is available 24 x 7	3.723	1.131
Hedonic Motivation (HM)	Venkatesh et al. (2012)	HM1	It is fun to use e-wallets	2.933	0.913
		HM2	Using a e-wallet seems to be enjoyable	3.07	0.971
		HM3	It is comfortable to use e-wallets	3.17	1.047
		HM4	It gives me pleasure in using e-wallets	3.017	0.957
Price Value (PV)	Widodo et al. (2019)	PV1	The cost of e- wallets is reasonable.	2.891	0.938
		PV2	The benefits provided by e-wallets are more than the cost.	3.0	0.868
		PV3	E-wallet provides good deals within the same package	3.095	0.973
Habit (HB)	Widodo et al. (2019)	HB1	Using e-wallet is like a routine for me	2.855	1.014
		HB2	I done my financial transactions through e-wallets only	2.953	1.111
		HB3	The use of e-wallets has become effortless for me	2.975	1.156
		HB4	It is good to use e-wallets	2.925	1.092
Perceived Risk (PR)	Lwoga (2017)	PR1	Using e- wallet is not fully secure.	3.603	1.054
		PR2	I would not feel safe sharing my personal and financial information while using e-wallet.	3.48	1.135
		PR3	The risk of fraud and misuse of information is high when paying through e- wallet.	3.458	1.132
		PR4	Overall, using e- wallet is not safe and secure.	3.573	1.121

Constructs	Source	Indicator	Statements	Mean	S. D
Trust (TR)	Lwoga (2017)	TR1	I prefer to use e-wallets if it protects the privacy of its users	2.969	0.97
		TR2	E-wallet always provides safe and secure financial services.	3.148	1.037
		TR3	I can rely upon the e wallet service providers	3.003	0.979
Perceived COVID threat (CVD)	Self-developed	CVD1	I prefer to use e-wallets to avoid physical contact	2.844	1.053
		CVD2	Use of e-wallets avoid the infection of COVID-19 virus	3.173	1.056
		CVD3	It is safe to use e-wallets during COVID phase	3.274	1.097
Behavioural Intention (BI)	Venkatesh et al. (2012)	BI1	I intend to use an e- wallet, as and when required.	3.64	0.961
		BI2	I am likely to use an e- wallet in near future.	3.603	0.957
		BI3	I plan to use an e-wallet frequently for my daily transactions	3.687	0.973
		BI4	I wish to use e-wallets for all my financial transactions	3.723	1.038

Results

Common Method Bias

When data is collected from multiple responses and a common instrument is used for collecting data for both independent and dependent variables, the problem of common method bias (CMB) can be there in responses (Podsakoff et al., 2003). Harman single factor method was employed to analyse the presence of CMB in responses. For this exploratory factor analysis was run in PASW software (version 18) taking all variables of independent and dependent constructs onto a single factor. The results showed that 32.7 % variance was explained by single factor which is less than 50 % and hence CMB was not present in the data (Streukens et al., 2017).

Measurement Model Analysis

The first step in PLS SEM is to assess the measurement properties of final measurement model which includes evaluating construct reliability, indicator reliability, convergent and discriminant validity of the outlined constructs. Construct reliability was established using composite reliability which should be more than 0.7 for adequate reliability of constructs (Hair et al., 2019). Composite reliability of all the constructs as shown in Table 3 is more than 0.7 ensuring construct reliability. Indicator reliability was confirmed as Cronbach alpha for all the indicators is in the range of 0.7 to 0.9. Convergent validity was verified using Average Variance Extracted (AVE) which should be more than 0.5 (Fornell and Larcker, 1981). For all the constructs, AVE was substantially high, hence convergent validity was confirmed. The results of Cronbach Alpha, Composite Reliability and AVE are displayed in Table 3.

For ensuring discriminant validity, HTMT ratios were analysed (displayed in Table 4) which should be less than 0.85 for every construct (Henseler et al., 2016). Other criteria suggested by Fornell and Larcker (1981) was also used to ensure discriminant validity. It compares square root of AVE of each construct with the correlations among constructs (Hair et al., 2019). The condition was met and displayed in Table 5. Also, there was no problem of cross loadings in the results. Hence, Discriminant validity is proved sufficiently.

Structural Model Analysis

Measurement model evaluations confirmed the reliability and validity of the model. Path analysis was run through PLS-SEM to validate the specified hypotheses of the research. The structural model was evaluated as per guidelines given by Hair et al. (2019). First, VIF (Variance Inflation Factor) values were checked to assess the presence of multicollinearity which were less than 3 for all the indicators of various constructs. Further bootstrapping technique was employed on 5000 subsamples to analyse the hypothesized relationship among constructs. The results are displayed in Table 6 and Figure 2.

R^2 , the coefficient of determination, indicates the variance explained by endogenous variables and its value ranges from 0 to 1 where higher value depicts greater in-sample predictive accuracy of the model. However, the values of 0.75, 0.50 and 0.25 are considered substantial, moderate and weak, respectively (Ravand & Baghaei, 2016). In the present research, the model shows high in-sample predictive accuracy of the model as R^2 is 0.776. Q^2 is another measure of analysing predictive relevance and is calculated through blindfolding procedure which predicts the omitted variables with the help of previously generated results in accordance with these parameters and its value above zero is the acceptable threshold.

The lower the error gap, the higher the value of Q^2 depicting higher predictive accuracy of the model. The values were calculated through blindfolding procedure with the omission distance of seven. The results of the blindfolding procedure concluded that the predictive relevance of the model is high at 53% (Hair et al., 2019). Further effect sizes (f^2) of each independent construct were also analysed, which is displayed in Table 6. The score confirmed that the Perceived COVID threat ($f^2 = 0.413$) has highest effect size on the respondents' intention to use an e-wallet followed by trust ($f^2 = 0.118$) and social influence ($f^2 = 0.115$).

Results of Path Analysis provided statistical support for all the hypotheses except H5 and H8 (displayed in Table 6). Findings concluded that all the constructs of UTAUT 2 model influenced behavioural intention to adopt e-wallets except Hedonic Motivation ($b = 0.053$, $t = 0.976$, $p\text{-value} = 0.303$). It was also found that perceived risk did not affect the behavioural intention to adopt e-wallets ($b = 0.047$, $t = 1.26$, $p\text{-value} = 0.208$). The most influencing construct affecting behavioural intention to adopt e-wallets was found to be Perceived COVID threat ($b = 0.40$, $t = 10.537$, $p\text{-value} = 0.000$) followed by social influence ($b = 0.198$, $t = 4.23$, $p\text{-value} = 0.000$) and trust ($b = 0.191$, $t = 3.642$, $p\text{-value} = 0.000$).

Table 3: Composite Reliability, AVE and Outer Loadings

Constructs	Items	Outer Loadings	Cronbach Alpha	Composite Reliability	AVE
Effort Expectancy	EE1	0.786	.888	.918	.691
	EE2	0.83			
	EE3	0.839			
	EE4	0.874			
	EE5	0.824			
Performance Expectancy	PE1	0.809	.867	.904	.653
	PE2	0.802			
	PE3	0.838			
	PE4	0.849			
	PE5	0.737			
Social influence	SI1	0.909	.872	.921	.795
	SI2	0.888			
	SI3	0.878			
Perceived Risk	PR1	0.867	.871	.912	.721
	PR2	0.84			
	PR3	0.843			
	PR4	0.845			
Trust	TR1	0.907	.873	.922	.797
	TR2	0.87			
	TR3	0.901			
Facilitating Conditions	FC1	0.798	.862	.900	.644
	FC2	0.807			
	FC3	0.831			
	FC4	0.774			
	FC5	0.802			
Hedonic Motivation	HM1	0.929	.891	.925	.755
	HM2	0.873			
	HM3	0.773			
	HM4	0.892			
Price Value	PV1	0.813	.780	.871	.692
	PV2	0.83			
	PV3	0.852			
Habit	HB1	0.916	.896	.935	.828
	HB2	0.884			
	HB3	0.93			
Perceived COVID threat	CVD1	0.897	.888	.930	.817
	CVD2	0.913			
	CVD3	0.901			
Behavioural Intention	BI1	0.822	.858	.904	.701
	BI2	0.837			
	BI3	0.828			
	BI4	0.861			

Table 4: HTMT Ratio

	Behavioral Intention	Effort Expectancy	Facilitating Conditions	Perceived COVID threat	Habit	Hedonic Motivation	Performance Expectancy	Price Value	Perceived Risk	Social Influence
Effort expectancy	0.586									
Facilitating conditions	0.668	0.644								
Perceived COVID threat	0.833	0.423	0.465							
Habit	0.549	0.31	0.264	0.375						
Hedonic motivation	0.451	0.255	0.441	0.336	0.325					
Performance expectancy	0.733	0.694	0.685	0.496	0.52	0.312				
Price value	0.456	0.575	0.376	0.363	0.496	0.543	0.479			
Perceived risk	0.729	0.683	0.721	0.658	0.337	0.344	0.71	0.401		
Social influence	0.593	0.331	0.29	0.428	0.338	0.358	0.36	0.641	0.327	
Trust	0.638	0.25	0.313	0.441	0.456	0.344	0.359	0.376	0.38	0.386

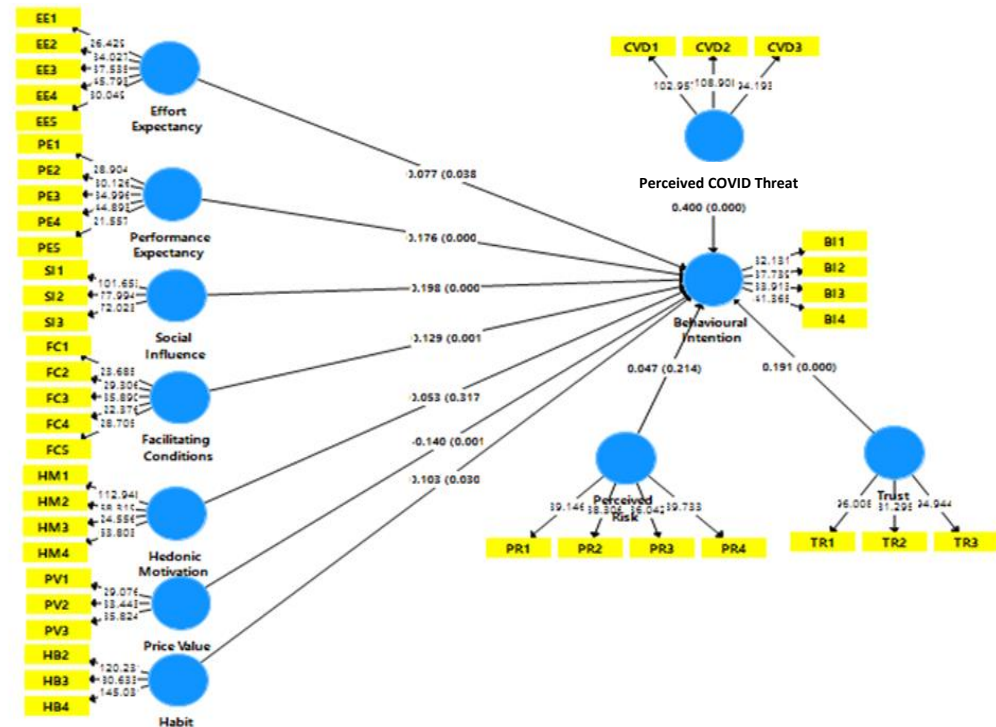
Table 5: Fornell and Larcker Criterion

	Behavioral Intention	Effort Expectancy	Facilitating Conditions	Perceived COVID threat	Habit	Hedonic Motivation	Performance Expectancy	Price Value	Perceived Risk	Social Influence	Trust
Behavioral Intention	0.837										
Effort Expectancy	0.513	0.831									
Facilitating Conditions	0.573	0.562	0.802								
Perceived COVID threat	0.744	0.377	0.408	0.904							
Habit	0.479	0.278	0.235	0.34	0.91						
Hedonic Motivation	0.392	0.228	0.389	0.3	0.294	0.869					
Performance Expectancy	0.632	0.611	0.592	0.441	0.459	0.277	0.808				
Price Value	0.377	0.46	0.306	0.309	0.426	0.456	0.402	0.832			
Perceived Risk	0.636	0.599	0.624	0.583	0.299	0.305	0.617	0.328	0.849		
Social Influence	0.513	0.294	0.253	0.381	0.302	0.32	0.313	0.527	0.288	0.892	
Trust	0.551	0.222	0.275	0.39	0.405	0.303	0.314	0.314	0.331	0.338	0.893

Table 6: Results of Hypothesis Testing

Hypothesis	Path	Path Coefficient	t-statistics	p-value	Significant	Decision	R ²	f ²	Q ²
H1	EE->BI	0.077	2.055	0.040	YES	Supported	0.776	0.009	0.53
H2	PE->BI	0.176	3.709	0.001	YES	Supported			
H3	SI->BI	0.198	4.23	0.000	YES	Supported			
H4	FC->BI	0.129	3.088	0.002	YES	Supported			
H5	HM->BI	0.053	0.976	0.303	NO	Not Supported			
H6	PV->BI	-0.140	3.026	0.003	YES	Supported			
H7	HB->BI	0.103	2.13	0.034	YES	Supported			
H8	PR->BI	0.047	1.26	0.208	NO	Not Supported			
H9	TR->BI	0.191	3.642	0.001	YES	Supported			
H10	CVD->BI	0.400	10.537	0.000	YES	Supported			

Figure 2: Results of Path Analysis



Discussion and Conclusion

The results of PLS-SEM revealed that effort expectancy, performance expectancy, social influence, facilitating conditions, price value, habit, trust and perceived COVID threat have significant impact on behavioural intentions. Only hedonic motivation and perceived risk are insignificant in influencing the behavioural of respondents to use e-wallets.

Effort expectancy shows a significant positive impact on behavioural intentions which signifies that people prefer to use e-wallets when it is convenient in terms of its usage. If there is clarity regarding the features of digital wallets, it would be easier for the users to use them. The similar results are reported in other studies conducted earlier (Tenk et al., 2020; Al Saedi et al., 2020; Singh et al., 2020; Marpaung et al., 2021). Performance expectancy is found to be significant factor in influencing the behavioural intentions of the respondents. There is positive correlation between performance expectancy and behavioural intentions, people like to use e-wallets only if it improves their efficiency and productivity in handling financial transactions which is in line with the research carried out previously (Hongxia et al., 2011; Qasim & Shanab, 2015; Slade et al., 2015; Chi, 2018; Pertiw et al., 2020; Yang et al., 2021; Leong et al., 2021). Social Influence is positively and significantly predicting the behavioural intentions of using e-wallets which confirms the results of earlier studies (Qasim & Shanab, 2015; Slade et al., 2015; Bailey et al., 2017; Gupta, 2022). Social influence is the second most important determinant of behavioural intention as indicated in the results which is in line with the study conducted by Yang et al. (2021). The respondents seemed to be positively influenced by peer group and they heavily rely on social affirmations for the usage of e-wallets. Facilitating conditions are also having positive and significant impact on the behavioural intentions which is supported by various research studies (Amoroso & Watanabe 2012; Penarroja et al., 2019; Widodo et al., 2019; Leong et al., 2021) whereas few studies (Hongxia et al., 2011; Slade et al., 2015; Tun, 2020; Yang et al., 2021) had a contrasting view where facilitating conditions had either no impact or negative impact on behavioural intentions. But mostly people find that if they had sufficient resources and backend support, they are willing to use e-wallets.

Hedonic motivation has been found to be insignificant in impacting the behavioural intentions for e-wallet usage and the similar results are reported in former research (Slade et al., 2015; Widodo et al., 2019). People didn't find e-wallets as an enjoyable activity; it is mere out of necessity or compulsion they are using e-wallets especially during pandemic period. During pandemic, when people were facing risk for their lives, the use of e-wallets was the only option, so hedonic motivation was not found to be influencing behavioural intentions of the users. Price value is negatively affecting the behavioural intentions of the people in this study and it is corroborated with the earlier results that validated that increase in the financial cost associated with the use of e-wallets will result in reduced usage of e-wallets (Hongxia et al., 2011; Slade et al., 2015; Teo et al., 2015; Widodo et al., 2019; Tenk et al., 2020; Al-Saedi et al., 2020).

Further, habit is positive and significant in determining the behavioural intentions towards e-wallets usage. These results are in line with the earlier research (Slade et al., 2015; Sivathanu, 2018; Widodo et al., 2019). The study conducted by Shin and Lee (2021) revealed that habit is a strong and positive determinant influencing the behavioural intentions. People are becoming habitual with the use of digital mode of

payments due to heightened usage of smartphones and the lockdown scenario in the past. As far as perceived risk is concerned, it is revealed that perceived risk does not impact the behavioural intentions. The findings corroborate the findings of earlier studies (Hongxia et al., 2011; Lwoga, 2017; Widodo et al., 2019; Tenk et al., 2020). Risk is not affecting the behavioural intentions of users as in COVID era, Government issued numerous guidelines for ensuring safety and security of payments made electronically and the e-wallet developers and owners had to follow these norms, otherwise they were not provided necessary approvals. Thus, security is ensured by the e-wallets and hence it is not affecting the behavioural intentions of the users.

Trust is found to be a significant factor affecting the behavioural intentions of people for e-wallets. These results are consistent with the conclusions drawn in previous researches (Amoroso & Watanabe, 2012; Qasim & Shanab, 2015; Lwoga, 2017; Tun, 2020). The firewall and security measures offered by digital payment gateways provides an assurance to the users for making payments digitally. The usage of e-wallets depends upon the security of information assured by digital platforms hence the companies offering digital payments must safeguard the security concerns to augment the usage of e-wallets. Further the respondents believed that governmental intervention in tightening the security to avoid scams and frauds also built up the trust in digital wallets (Ly et al., 2022).

Perceived COVID threat is found to be the most prominent determinant for the behavioural intentions towards e-wallet usage. The outbreak of COVID resulted in the complete lockdown situation in the world, which necessitated a shift in retail as well as payment mode. People prefer to use digital money instead of hard money to avoid physical contact. The fear of being infected is the strongest factor driving people to use e-wallets. A study conducted in Vietnam clarified that due to third time outbreak of COVID, people have to shift to cashless transactions and thereby the use of mobile payments and digital wallets increased tremendously (Ly et al., 2022).

Limitations and Future Research

Even though the present research offers new understandings both theoretically and practically, but it does suffer from some limitations. Firstly, current study is a cross sectional study. As technology is advancing rapidly, it will be beneficial to validate the findings in longitudinal settings to explore how technological innovation influences the behavioral intention of users to adopt e-wallets. Secondly, demographic factors like age, gender could also affect the behavioural intention of users which are not the part of this study. These factors could also be significant enough to impact the intentions of users using digital wallets and hence can be studied in future research. Further research can also be conducted to compare the usage and adoption of digital wallets in the pre-Covid and post-Covid era.

Implications

The existing literature has plethora of studies to validate the impact of various factors on behavioural intention to use e-wallets. This paper broadens the existing literature by examining the impact of three constructs namely, perceived risk, trust and perceived COVID threat along with the recognized factors of UTAUT 2 model on behavioral

intention of users towards e-wallets. These factors have been explored in earlier studies individually but none of the study so far has studied these factors in integrated form. Moreover, the digital payment system has evolved as a large network, onus Covid-19. Various studies have studied the impact of Covid-19 on digital payments adoption and usage. Perceived COVID threat itself can also be a determinant in adoption of e-wallets. As Covid worries have returned due to surge in pandemic cases in China and a few other countries including India, the present study can offer useful insights for the digital wallets service providers to device their future strategies.

Building upon the theoretical perspective, the extended UTAUT 2 model could be used to study the behavioural intention of users of mobile banking apps, plastic money and UPI Transfers. The scale is developed and validated by using the data from the individual users. The same scale could be used to adjudge the preference of unorganized sector and small retail shops in accepting payments. The current research has contributed in enhancing the research base with an extended model which can be used to enrich the available literature.

Practical Implications for Asian Business

The digital wallet companies in Asia can seek the benefits of this research in decision making process. The choice regarding the features of the application in developing stage can be made in the light of the results of the study. In Asian region the acceptability of digital wallets becomes extremely challenging and opportunistic at the same time as cashless transactions are still in infancy stage. The current research strongly supports that shift in the mindset of people after COVID-19 open gates for the digital wallets companies to become an early leader in the market by focusing upon the various factors studied such as performance expectancy, effort expectancy and social influence. Trust is found to be one of the crucial factors affecting the usage of the digital wallets. Therefore, such companies must build trust by providing more secure mechanisms to operate. The decisions pertaining to improvement of performance of digital wallets can be taken in the light of the results of this study as performance expectancy and behavioral intention is found to be significantly correlated. The digital wallets can start referral reward programs to increase their customer base as social influence is also positively correlated with behavioral intention. The digital wallets companies must also try to enhance their brand image by focusing more on price, ease of use, security and privacy as social influence is also positively correlated with behavioral intention. The digital wallet applications that are easy to use and has secured server are more popular among the users. Thus, companies should emphasize more on firewall security and other security measures to provide the safe and secure environment. Perceived COVID threat has been found as the most significant determinant influencing intention to adopt e-wallets due to the scare of infections caused by physical touch. So 'no physical contact in e wallets' can be used by e-wallets companies as an advertising strategy. Companies should work upon easing out the user interface as effort expectancy is a strong predictor of intention to adopt digital wallets and easy to use interface can be advocated as a part of marketing campaign.

The study is not only useful for the digital service providers rather the economists, policymakers and advisors to government can also be benefitted by the study. Pandemic driven economy has faced the dearth of cash at many times. Digital wallets proved to

be beneficial in these tough times. A shift from cash-based payment system to digital payment system was the need of the hour. The study is helpful in framing policies as well. Governments while framing the policies to promote usage of digital wallets can focus on drafting policies targeting more secured and safer network of digital wallets. Digital wallets could be directly linked to the bank account, which increases the users' apprehensions about being targeted for cyber fraud. Central banks exercising their control over digital wallet payment system must consider the perception of perceived risk of users and address it in forthcoming policies. The stakeholders could also take the initiative to educate the citizens and create awareness about digital wallets based on the results of the study.

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