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## Risk And Resilience in Digital Payment Adoption: Analyzing Consumer Behavior Through the UTAUT2 Framework in Pakistan

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### Abstract

This study investigates the factors affecting the adoption of digital payment systems in Pakistan with the lens unified theory of acceptance and use of technology 2 (UTAUT2) framework. Particularly this study aims to enhance the consumer's adoption of digital payment systems in Pakistan to increase their work performance. Also, the moderating role of technostress between behavioral intention and adoption of digital payment systems. Consumers of bank account holders specifically those who use mobile banking apps for making transactions in Pakistan are included in this study. A survey was conducted using a purposive sampling method for data collection. Partial least square equation modeling was employed to test the hypotheses with a sample of 386 mobile banking users. Furthermore, the Smart-Pls SEM technique was used in this study. In this study SEM technique was used for the Measurement model and Structural model, the measurement model was used for validity and reliability the structural model was used for testing the hypothesis. The results of the study found that performance expectancy, effort expectancy, facilitating conditions, and habit were major contributing factors to the consumer's adoption of digital payment systems in Pakistan. This research, conducted in Pakistan, investigates the UTAUT2 constructs on the BI of consumers to employ the adoption of digital payment systems. Technostress (TS) is introduced as a new variable within UTAUT2, functioning as a moderator. Notably, this is the first research, adoption of digital payment-related investigation conducted in Pakistan. The primary objective is to gain valuable insights into the banking industry, focusing specifically on consumer perceptions of the adoption of digital payment systems. This study is conducted on the comprehension of consumer behavior in the sphere of the adoption of digital payment systems by increasing awareness of the adoption of digital payment systems

**Keywords:** Performance expectancy, effort expectancy, Hedonic motivation, Adoption, Technostress, Habit.

### 1. Introduction

Historically, the brick-and-mortar approach had been adopted by banks to expand their share in the market (Tan and Teo, 2000). Then in the 1990s, the banks shifted away from their conventional financial delivery platforms towards self-service, autonomous platforms (Pikkarainen *et al.*, 2004).

In the banking sector after self-service financial delivery channel moved toward Automatic Teller Machines (ATM) (Laukkanen, 2016). In fact, due to its high level of competition, the banking systems are at the forefront of adopting advanced innovation (Luo *et al.*, 2010). These innovations have greatly enhanced the ability of banks to deliver improved services to their customers (Fintech). The explosive expansion of information technology and the internet over the last several decades has contributed significantly to the rise of digitalized payment procedures all over the world, particularly in the most recent few years (Shankar and Rishi, 2020).

The adoption of digital payment systems (ADPS) has greatly revolutionized how individuals conduct transactions and operations (Chandran and Tholath, 2022). Additionally, banks stand to gain various advantages by embracing and implementing digital payment, including cost reductions, enhanced customer service quality, and revenue growth (Yousafzai, 2012). This transaction, often mentioned to as an e-payment, involves the money transfer from electronic devices such as a smartphone or tablet (Ashishie, 2022). In this ear, digital payment systems play an important to increase performance. In this survey, in Pakistan ADPS is lower than the other developing countries (Ullah *et al.*, 2022).

Despite the growing Percentage of People with Internet access, a small number of users still use mobile banking. State Bank of Pakistan (SBP) in the year 2022 stated that the total population of 227.3 million people, and the total bank accounts have reportedly reached 66.13 million. Showing that a total of 29.09% of the People possess a bank account (SBP, 2022). The real number of mobile banking users in Pakistan for the fiscal year 2022 was only 11.3 million. For the financial year 2022 the third

quarter, the overall value of paper-based transactions was Pakistani Rupee (PKR) 46,412.1 billion, while the value of mobile banking transactions was PKR 3,085.8 billion (SBP, 2022). These are the statistics that indicate that people interested in using cash transactions on paper money rather than mobile banking transactions. Pakistan's adoption of digital payment systems (ADPS) is comparably low to other developing nations (Ullah *et al.*, 2022).

In past research, attitude, social distancing, technology and regulatory support (Nawaz *et al.*, 2023), TAM model and credibility to analyze the consumer's behavior intention toward mobile banking (Lee, 2021). Purohit and Arora, (2023) have highlighted the lack of awareness and education regarding m-banking. It is established that consumers are hesitant to use adoption of m-banking (Ligon *et al.*, 2019). In the initial stage of digital payment in Pakistan implementation a very rare study (Glavee-Geo *et al.*, 2017) has addressed a few issues related to this technology. The inherent technostress associated with digital payment systems also exposes users to stress before engaging in a digital transaction (Khlaif *et al.*, 2022). Therefore, the identified gap in the past literature underscores the need for a concise conceptual model that effectively elucidates the adoption of m-banking from the perception of Pakistani customers.

Moreover, Firstly, I addressed the research gap, which previous research lacks that explains the consumer behavioral intention to the ADPS (Ullah *et al.*, 2022). Secondly, I identified the gap in the recent studies (Hutomo, 2023; Hussain *et al.*, 2021; Ullah *et al.*, 2022) used only the TAM model tests for the consumer's ADPS. Venkatesh *et al.*, (2012) suggest that the UTAUT2 model is best for adopting new technology. Hence, to fill these gaps, the researcher held research in Pakistan, to investigate the UTAUT2 constructs on the consumer's behavioral intention to the ADPS. For this, we extend the (UTAUT2) model by incorporating variable technostress as a moderator test between BI and ADPS. Notably, this is the first digital payment systems-related research conducted in Pakistan.

The primary objective is to gain valuable insights into the banking industry, focusing specifically on consumer perceptions of ADPS. This study was conducted to comprehend consumer behavior in the ADPS sphere. This study also helps the banking sector and facilitates the banking customers.

## 2. Literature review

### 2.1 Adoption of digital payment systems

ADPS refers to the process of individuals or organizations accepting and using electronic modes of payment, such as m-banking, i-banking, and e-wallets, in place of paper-based transactions (Chaveesuk *et al.*, 2021). This trend has gained significant momentum in recent years, as digital payment systems offer greater convenience, accessibility, and security for users compared to traditional payment methods (Park *et al.*, 2019). The ADPS can significantly impact various aspects of society, including the economy, financial inclusion, and the overall way people transact and interact with money (Alkhowaiter, 2020).

Statista shows in the report; that the global digital payment user penetration rate is expected to reach 50% by 2025. The ADPS refers to the extent to which people use electronic devices like smartphones and tablets to perform different banking (Alalwan *et al.*, 2016). With the ADPS, users can have access to a variety of financial services, including information inquiry, money transfer, account management, and bill payment, using m-banking or mobile banking (Mahfuz *et al.*, 2017). Internet-based online banking services, digital payment does not impose any time or location restrictions on their users. Users can access account information in real time and make payments whenever and wherever they want. This helps banks in enhancing their service quality while also lowering the expenses associated with such services (Luarn and Lin, 2005). Digital payment is a convenient method to perform transactions through a digital device (Oliveira *et al.*, 2014).

Furthermore, the (UTAUT) was presented by (Venkatesh, Morris, Davis, and Davis., 2003). However, upon closer examination, it's evident that many of these theories and models were initially conceived within an organizational framework (e.g., TAM and UTAUT) as noted by (Venkatesh *et al.*, 2012). This raises concerns about their relevance in contexts focused on customers (Venkatesh *et al.*, 2012). Consequently, given the variability between customers and organizational contexts in determining the factors influencing individuals' intentions and behaviors towards technology (Baloch *et al.*, 2022), it becomes imperative to choose a theoretical framework suitable for the customer (Venkatesh *et al.*, 2012). This framework should comprehensively address key aspects pertaining to individual customers' intentions and ADPS.

### 2.2 Unified Theory of Acceptance and Use of Technology

Venkatesh *et al.* (2012) developed UTAUT2 by considering nine models on technology acceptance and human behavior. This was realized by having a conversation about the theories and practices that are used in research on motivation, acceptance, and technology usage (Liu *et al.*, 2022). The UTAUT variables include EE, PE, SI, FC, and SI. Venkatesh *et al.*, (2012) expand upon the UTAUT and introduce the UTAUT2 model. This updated model incorporated three new variables: PV, HB, and HM. This was done although UTAUT has universal acceptability. When compared to UTAUT, the improvements that were implemented in UTAUT2 resulted in considerably examining the BI and adoption of the new technology. UTAUT2 is the best theory to investigate the individual's behavior and UTAUT2 gives a better result than the other theories to adopt the new technology.

### 2.3 Performance expectancy

PE is an essential construct of the UTAUT2 variable that indicates an individual accepts and uses technology will help to increase performance (Venkatesh *et al.*, 2012). In this era, consumers can increase their performance through technology. PE also helps to individuals to perform work effectively and efficiently (Jadil *et al.*, 2021). Individuals accept new technology when they compare it to traditional methods for completing tasks (Alalwan *et al.*, 2016; Chao, 2019). PE creates consumer intention to increase their job performance, such as making a digital transaction through digital payment systems within less time, which means consumers must increase their performance with the new technology (Purohit *et al.*, 2022). If it increases their

performance, they are more likely to adopt new technology. Hence based on the previous study, the following hypothesis is proposed.

H<sub>1</sub>: PE has a positive significant effect on BI to the adoption of digital payment systems.

## 2.4 Effort expectancy

EE is the key construct of the UTAUT2 variable. EE is the belief that using technology to make work easier can be learned quickly (Venkatesh *et al.*, 2012). Consumers can show a high interest in the adoption of technology when they know how to make work easier with the help of technology (Patil *et al.*, 2020). Indeed, EE is one of the most important constructs that is linked with the adoption of new technology (Lee, 2021). EE facilitates the consumer will make an online transaction through digital payment systems like mobile banking apps and they do not need to visit the physical bank to make any kind of transactions, thus requiring minimal effort (Owusu Kwateng *et al.*, 2019). Hence, based on prior exploration, the following hypothesis is assumed.

H<sub>2</sub>: EE significantly impacts BI to the adoption of digital payment systems.

## 2.5 Social influence

SI is included as a UTAUT2 variable. SI is a more important factor in the assessment the consumer's perception of the use of technology (Venkatesh *et al.*, 2012). In simple words, the information and encouragement offered by those who surround clients or customers impact influencing their knowledge and intention about technology (Alalwan *et al.*, 2016). When consumers believe they can increase their social standing and image in their reference group, they acquire a positive Perception of technology usage (Venkatesh and Davis, 2000; Sivathanu, 2019). Considering the above conflicting opinions, this study proposes:

H<sub>3</sub>: SI significantly positively impact BI to the adoption of digital payment systems

## 2.6 Facilitating conditions

FC, refer to a person's perception of the extent to which the crucial administrative and technical infrastructure is available, enabling the effective utilization of a particular technology (Venkatesh *et al.*, 2003). This includes factors such as technical support, access to necessary hardware and software, training, and organizational policies and procedures that help to operate the technology (Chaveesuk *et al.*, 2021). Individuals have embraced technology when they have access of resources to usage of technology (Mensah *et al.*, 2020). This suggests that the BI will rise if the operational devices exist and enables its usage (Oliveira *et al.*, 2014; Owusu Kwateng *et al.*, 2019). Hence based on the previous, study the following hypothesis is proposed.

H<sub>4</sub>: FC significantly impacts BI on the adoption of digital payment systems.

## 2.6 Hedonic motivation

HM is a type of motivation that is driven by technology (Venkatesh *et al.*, 2012). This idea of Perceived pleasure is believed to impact customer acceptability and technology usage (Oliveira *et al.*, 2014). This may involve designing user interfaces that are visually appealing and easy to use, incorporating elements of gamification or other enjoyable activities, and highlighting the potential social benefits of using the technology (Owusu Kwateng *et al.*, 2019). HM is represented as an umbrella word in UTAUT2-based research, and it incorporates related variables (Ahn *et al.*, 2016). It is based that individuals are motivated to seek out activities, experiences, and stimuli that are pleasurable or enjoyable while trying to minimize or eliminate those that are unpleasant (Khurana and Jain, 2019; Lin *et al.*, 2022). Hence based on the previous study, the following hypothesis is proposed.

H<sub>5</sub>: HM significantly positively impacts BI to the adoption of digital payment systems.

## 2.7 Habit

A habit is a learned behavior that becomes automatic through repetition. It is an action or pattern of behavior that a Person regularly follows, often without even consciously thinking about it (Lee, 2021). The term HB refers to a conceptual framework that suggests and is addressed as the consumer's recurrent or repeated behavior (Venkatesh *et al.*, 2012). HB is a spontaneously performed action that has been acquired via a process of learning (Limayem and Cheung, 2008). During this pandemic, elderly People will develop a habit of digital payment systems after almost two years of being compelled to do so (Magsamen-Conrad *et al.*, 2020). Similarly, individuals who engage in traditional banking methods are well-acquainted with the practices and competencies required for conducting offline transactions (Hanafizadeh *et al.*, 2014). Prior study reveals that habit significantly affects behavioral intention's usage of information technologies (Lin *et al.*, 2022). Hence based on the previous, study the following hypothesis is proposed.

H<sub>6</sub>: HB significantly positively impacts BI to the adoption of digital payment systems.

## 2.8 Behavioral intention

Behavioral intention (BI) refers to one's conscious decision or plans to accomplish a particular behavior in the future (Venkatesh *et al.*, 2003). It's a key concept in social psychology and behavioral sciences that helps explain and predict human behavior. BI is used to predict actual behavior which is a significant variable in technological adoption (Penney *et al.*, 2021). In the past, research has regarded behavioral intention as a crucial aspect in influencing the acceptability of technology (Park, 2009). According to Raza *et al.*, (2019), the intention to utilize technology changes and is strongly dependent on the technology's characteristics. BI is a key construct that they will decide to accept or reject anything (Ifedayo *et al.*, 2021; Alalwan *et al.*, 2017). Hence based on the previous study, the hypothesis is proposed.

H<sub>7</sub>: BI has a positive and significant effect on the adoption of digital payment systems.

## 2.9 Technostress

Technostress (TS) is the discomfort experienced by individuals while using technology, which is caused by the phenomenon known as technostress (Lin *et al.*, 2007). Correspondingly, technostress is the important variable that impacts on intention of users to ADPS (Liu *et al.*, 2015). Users are resistant to embracing new technology because they believe it would be difficult to comprehend and will cause them to worry (Swilley, 2010). TS also decreases the individual's performance (Thakur and Srivastava, 2014). TS has a negative effect on BI to adopt innovative technologies (Khlaif *et al.*, 2022). Technostress is the main barrier to adopting new technology. Hence, on the basis of the previous study, this hypothesis was generated.

H<sub>8</sub>: TS negative moderates the impact of BI and ADPS.

## 2.10 UTAUT2 boundary condition

A boundary condition in UTAUT2 could be the gender, age, and education of the user. Age, gender, and education may influence the relation between the independent variables (PE, EE, SI, FC, HM, HB) and the dependent variable (BI to use the technology), as older individuals may have different expectations and abilities compared to younger ones. Therefore, age, gender, and education could be considered boundary conditions in the UTAUT2 model. Some of the previous studies (Hussain *et al.*, 2022) test technostress as having a moderate impact on digital literacy and performance expectancy. In this current research, the researcher tests the technostress as a moderate impact on BI and the adoption of DPS.

## 2.11 Theoretical framework

The theoretical framework presented in Figure 2.1 is developed on the basis of UTAUT2. This framework helps the researcher to investigate various factors that impact on ADPS.

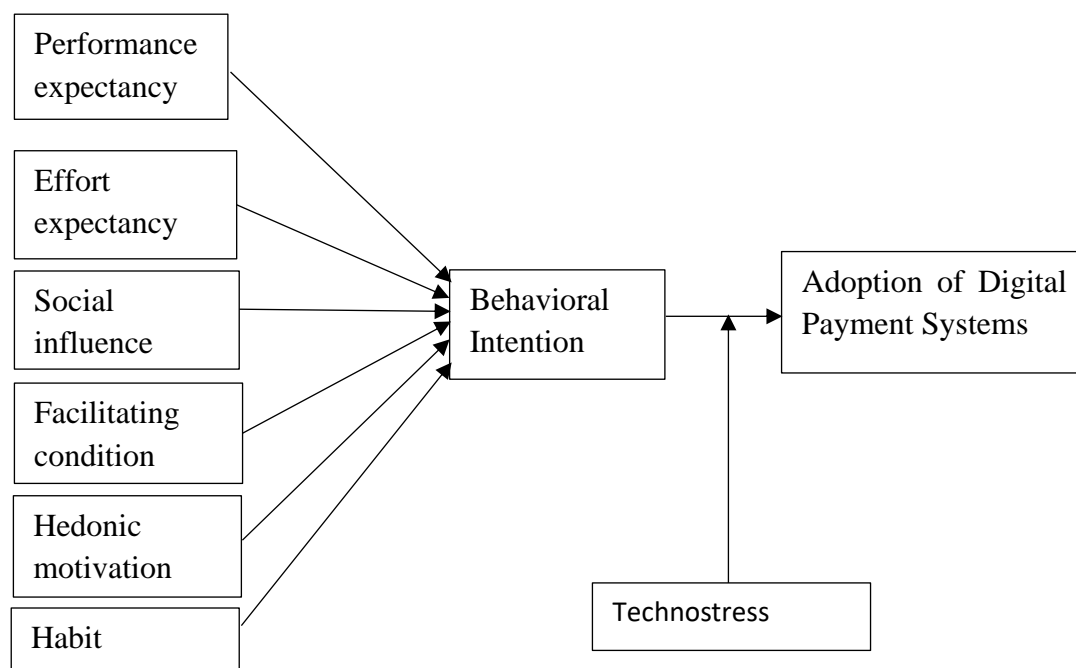


Figure 2.1: Theoretical framework

## 3. Research Methodology

### 3.1 Instrument of measurement

This current research employed an online Google form to collect the data and the measure scales of the constructs were based on prior, related research (Venkatesh *et al.*, 2012; Oliveira *et al.*, 2014). This study also collects data through a Google form questionnaire, to investigate the various factor's impact on BI and ADPS. All the instruments of measurement are adopted from the different articles. PE, EE, SI, FC, habit, HM, BI, technostress, and adoption are derived from (Penney *et al.*, 2021; Singh *et al.*, 2020). Many of the researchers used the survey method (Kim and Bae, 2023). The close-ended question included in the survey questionnaire was based on five points on a Likert scale. The five point Likert scale consists of 1 equal to strongly disagree and 5 equal to strongly agree.

### 3.2 Sampling and data collection

In the Sampling method, this study employed a non-probability purposive sampling for data collection. Primary data were collected through the survey method. Purposive sampling (Limna *et al.*, 2021) was used to collect data from the participants through the method. The objective of purposive sampling is for the researcher to use their discretion and judgment to select participants who will be included in the study (Henry, 1990). Data collected from Pakistan Divisions include Punjab, Sind, Baluchistan, Khyber Pakhtunkhwa, Gilgit Baltistan, Azad Kashmir, and Islamabad. In this study, the sample size was 386 and the unit of analysis was the individuals who used digital payment systems (mobile banking apps) in Pakistan.

### 3.3 Common method bias

The research utilized Harman's single factor test to test for CMB's presence. This analysis shows that there was no CMB in this current research, and the CMB result is indicated by the cumulated variance value of 30.800%, which falls below the recommended threshold of 50% (Sharma *et al.*, 2021). CMB plays an important role in identifying the variance of data.

### 3.4 Data analysis tools

Both SPSS and smart-PLS were used to analyze the data collected. The study used SPSS for demographic analysis, and Smart-PLS4 for structural equation modeling (SEM), enabling us to address several topics simultaneously. PLS-SEM is often utilized in situations when there is a limited number of participants, little in the way of established theory, and a need to make predictions about the outcomes of the study (Ghaffar *et al.*, 2023).

### 3.5 Demographic information

**Table 1.** Demographics

Profile	Distribution	Frequency	Percentage
Age	18-25	158	40.9%
	26-35	122	31.6%
	36-45	55	14.2%
	46-55	45	11.7%
	Above 55	6	1.6%
Gender	Female	130	33.7%
	Male	256	66.3%
Marital Status	Married	168	43.5%
	Single	218	56.5%
Education	Matriculation	25	6.5%
	Intermediate	95	24.6%
	Undergraduate	161	41.7%
	Postgraduate	105	27.2%
Income level	50,000 and below	205	53.1%
	51,000-100,000	106	27.5%
	101,000-150,000	38	9.8%
	151,000-200,000	26	6.7%
	201,000 and above	11	2.8%
Province of your resident	Azad Kashmir	35	9.1%
	Baluchistan	24	6.2%
	Gilgit Baltistan	34	8.8%
	Islamabad Capital	72	18.7%
	Khyber Pakhtunkhwa (KPK)	27	7.0%
	Punjab	146	37.8%
	Sindh	48	12.4%

## 4. Results

### 4.1 Measurement model Validity and reliability

In measurement, includes validity and reliability. The relation among indicators and their variables is confirmed by a measurement model. In the assessment of the measurement model, the researcher tests the factor loading, Cronbach's alpha, composite reliability, and average variance extract. According to Hair *et al.* (2014), all the values are in the acceptable range, Cronbach's alpha is all of the constructs greater than 0.7, in factor loading all of the indicators values greater than 0.7, and all of the constructs the AVE values are greater than 0.5. According to Hair *et al.* (2014) all of the indicators and constructs values meet to the threshold values, the results of the measurement model are shown in Table 2.

**Table 2.** Assessment of measurement model

Constructs	Indicators	Factor Loading	Cronbach's alpha	CR	AVE
Adoption	Adoption1	0.841	0.762	0.863	0.677
	Adoption2	0.852			
	Adoption3	0.773			
Behavioral intention	BI1	0.838	0.814	0.890	0.730
	BI2	0.886			
	BI3	0.837			
Effort Expectancy	EE1	0.809	0.805	0.872	0.631
	EE2	0.797			
	EE3	0.810			
	EE4	0.761			
Facilitating Condition	FC1	0.835	0.837	0.891	0.672
	FC2	0.820			



Constructs	Indicators	Factor Loading	Cronbach's alpha	CR	AVE
Habit	FC3	0.836	0.758	0.861	0.674
	FC3	0.786			
	HB1	0.858			
	HB2	0.819			
Hedonic Motivation	HB3	0.785	0.829	0.898	0.745
	HM1	0.873			
	HM2	0.854			
Performance expectancy	HM3	0.863	0.742	0.838	0.566
	PE1.	0.726			
	PE2	0.853			
	PE3	0.740			
Social Influence	PE4	0.680	0.837	0.900	0.751
	SI1	0.849			
	SI2	0.847			
	SI3	0.902			
Techno-stress	TS1	0.855	0.887	0.927	0.809
	TS2	0.909			
	TS3	0.932			

After assessing the measurement model, the subsequent stage involves evaluating the convergent validity and discriminant validity. Convergent validity the multi-indicators of the same construct leads to the same conclusion. Discriminant validity is the stage where one variable within the model is examined for its distinction from other variables. In this current research, the researcher tests only HTMT discriminant validity.

#### 4.2 Heterotrait-Monotrait (HTMT)

HTMT assess discriminant validity in structural equation modeling (Stephen *et al.*, 2021). HTMT is typically utilized when researchers want to determine whether the correlation between two different constructs is significantly lower than the correlation between items within the same construct. By examining the HTMT ratio of correlations, researchers can evaluate whether their measurement scales effectively discriminate between different constructs. HTMT less than 0.90 is shown in Table 3. The achievement of discriminant validity results. In HTMT if the variable values exceed 0.90 then the values do not exist in the acceptable range.

**Table 3.** Heterotrait-Monotrait (HTMT)

	ADPS	BI	EE	FC	HB	HM	PE	SI	TS
ADPS									
BI	0.758								
EE	0.804	0.745							
FC	0.773	0.713	0.815						
HB	0.748	0.717	0.762	0.739					
HM	0.673	0.606	0.608	0.689	0.647				
PE	0.419	0.477	0.359	0.392	0.449	0.361			
SI	0.349	0.241	0.455	0.391	0.43	0.313	0.199		
TS	0.206	0.207	0.173	0.102	0.278	0.098	0.079	0.106	

#### 4.3 Assessment of Structural Model

The next thing to do was analyze the structure model. The structural model also run through bootstrapping in smart Pls-4. In the structural model researcher tests the R-Square and test the hypothesis.

#### 4.4 Coefficient of Determination ( $R^2$ )

$R^2$  indicates variance in DV collectively explained by the IV. Table 4 shows the R-square values and R-square adjusted. The  $R^2$  values range must be 0 and 1.  $R^2$  means all the IV effects on DV. And the  $R^2$  adjusted considers only those IVs that have an actual effect on DV. The coefficient of determination  $R^2$  adoption 0.400 and behavioral intention 0.499 are, respectively.

**Table 4.** R-Square and Adjusted R-Square

Construct	R-square	R-square adjusted
Adoption	0.400	0.395
Behavioral intention	0.499	0.492

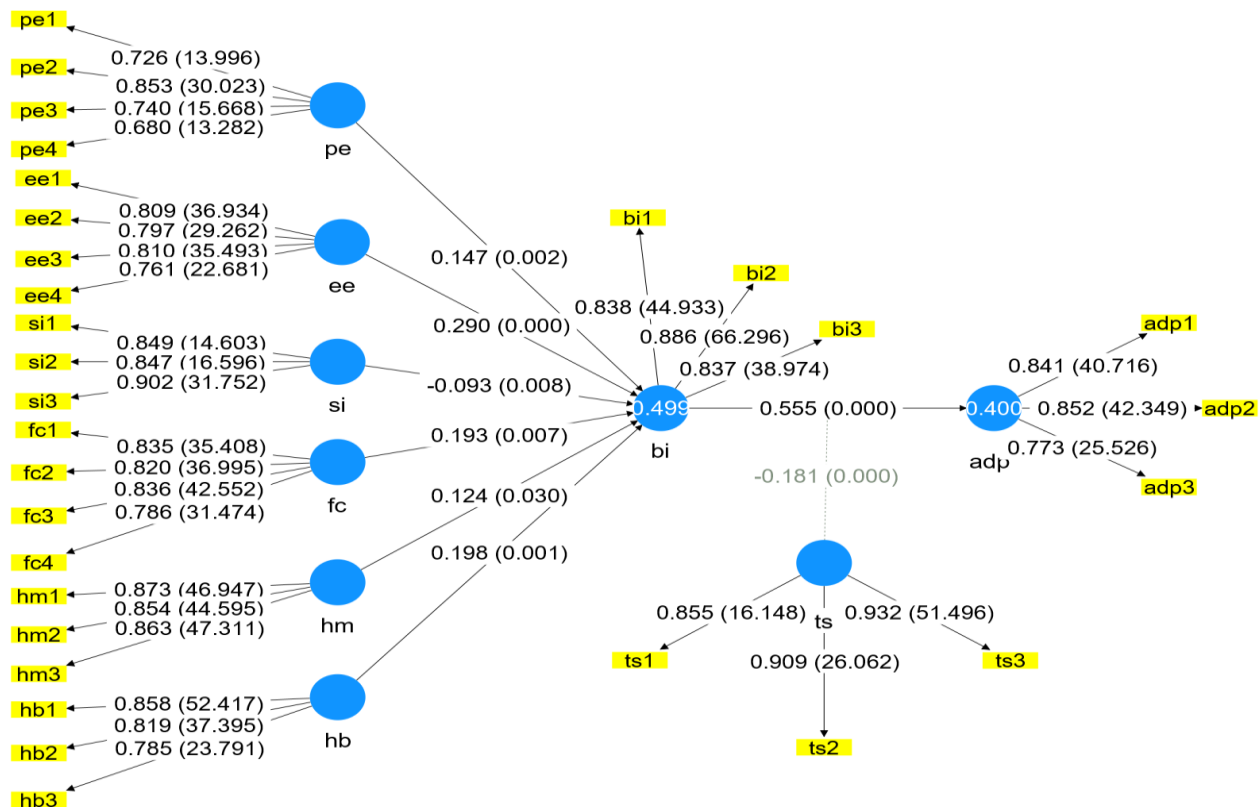


Figure 4.1: Structural model

#### 4.5 Path coefficient

Table 5 shows that PE positively significantly influenced BI ( $H_1$  PE→BI  $\beta = 0.147$ ,  $t = 3.161$ , and  $P < 0.01$ ). So, the  $H_1$  hypothesis was accepted. EE positive significantly influenced BI ( $H_2$  EE→BI  $\beta = 0.290$ ,  $t = 4.233$ , and  $P < 0.01$ ). Hence  $H_2$  hypothesis was accepted. SI negative significantly influenced BI ( $H_3$  SI→BI  $\beta = -0.93$ ,  $t = 2.659$   $P < 0.01$ ). Hence  $H_3$  hypothesis was rejected. FC positive significantly influenced BI ( $H_4$  FC→BI  $\beta = 0.193$ ,  $t = 2.688$  and  $P < 0.01$ ). Hence  $H_4$  hypothesis was accepted. HM positive significantly influenced BI ( $H_5$  HM→BI  $\beta = 0.124$ ,  $t = 2.172$  and  $P < 0.05$ ). Hence  $H_5$  hypothesis was accepted. HB positive significantly influenced BI ( $H_6$  HB→BI  $\beta = 0.198$ ,  $t = 3.348$  and  $P < 0.01$ ). Hence  $H_6$  hypothesis was accepted. BI positive significantly influenced ADPS ( $H_7$  BI→ADPS  $\beta = 0.555$ ,  $t = 11.529$  and  $P < 0.01$ ). Hence  $H_7$  hypothesis was accepted.

Table 5. Path Coefficient

Path	Beta ( $\beta$ )	SD	T statistics	P values
PE → BI	0.147	0.047	3.161	0.002
EE → BI	0.290	0.069	4.233	0.000
SI → BI	-0.093	0.035	2.659	0.008
FC → BI	0.193	0.072	2.688	0.007
HM → BI	0.124	0.057	2.172	0.030
HB → BI	0.198	0.059	3.348	0.001
BI → ADPS	0.555	0.048	11.529	0.000

#### 4.6 Moderation effect

The moderator variable in the model is responsible for adjusting the level of interaction between the two structures and how it occurs. The TS moderation study between BI and ADPS was done using a product indicator technique ( $H_8$  TS x BI → ADPS = -0.180,  $t = 3.798$ , and  $P < 0.01$ ); the results showed a significant negative association. TS has a negatively moderate; negatively moderate means one thing increases and the other thing decreases. It means if TS increases then ADPS also decreases. Table 7 shows the moderation analysis results indicating that TS moderates BI-ADPS linkages.

Table 6. Moderation Effect

Hypothesis	Beta ( $\beta$ )	SD	T statistics	P values
TS x BI → ADPS	-0.180	0.048	3.798	0.000

#### 4.7 Moderation Slope

It is generally agreed that the interpretation of moderation analysis is a complex problem. As a result, it might be easier to conclude by using a graphical representation of the relationship. In this slop, these lines intersect, which means moderation is

done. Figure 4.2 displays the Slope that was calculated for the moderation analysis. Moderation slope clearly defines the moderation positive or negative impact on IV and DV.

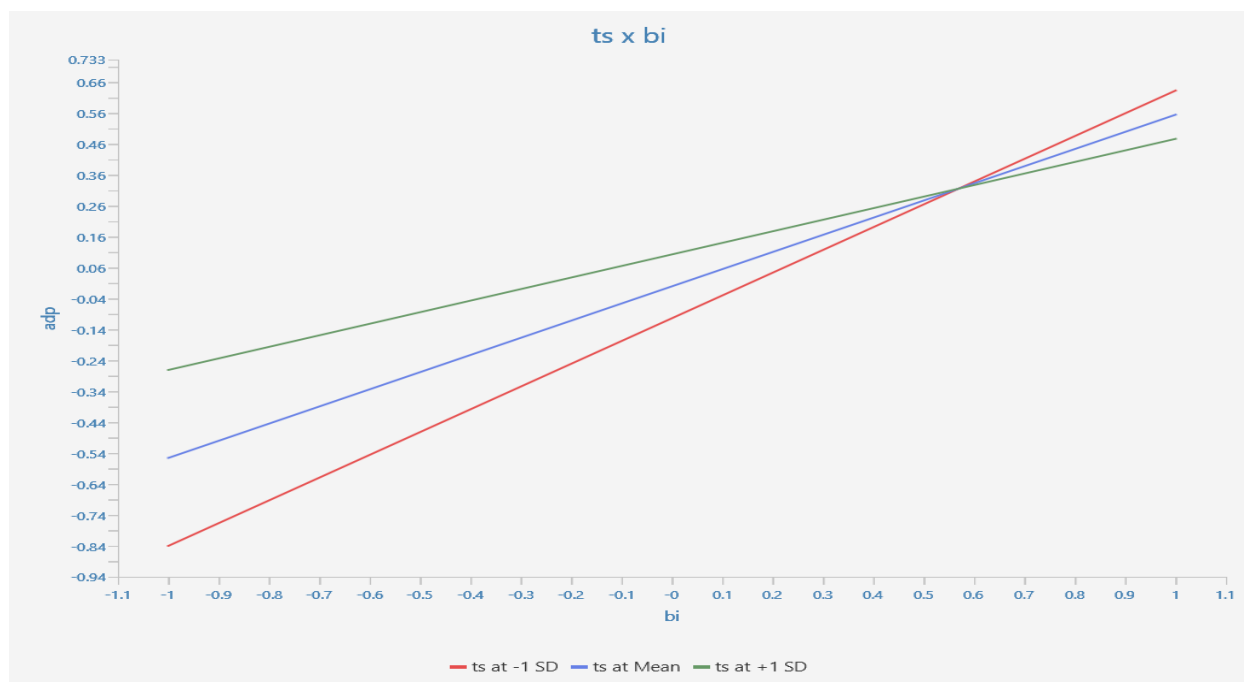


Figure 4.2 Slope plot of moderation analysis

## 5. Discussion

This present research underpinned the UTAUT2 to examine consumer behavior toward the ADPS. The involvement of the UTAUT2 model was expanded with technostress as a boundary condition. In this current research, the researcher tests technostress as a moderating impact on BI and ADPS.

The existing study findings reveal that PE has a positive significant impact on BI to the ADPS. This result is consistent with previous studies (Lin and Lin, 2014; Migliore *et al.*, 2022; Lin and Lin, 2014; Alalwan *et al.*, 2018; Owusu Kwateng *et al.*, 2019). When customers have the impression that newly developed technology is simple to use, there is a greater likelihood that they will embrace its use and experience an increase in their performance. PE is one of the most critical predictors of consumers' intentions to the adoption of digital payment systems. Individuals who perceive that using digital payment systems will improve their performance and productivity are likely to adopt these systems. This study enhances the information related to ADPS, this information is helpful to the consumer to increase performance.

According to this research finding, EE has positively significant effects on BI to the ADPS. These results are consistent with earlier research (Lee, 2021; Oliveira *et al.*, 2014; Alawan *et al.*, 2018). Customers want technology that makes their lives easier while requiring as little work as possible, according to research. Current results demonstrate that EE is a main predictor the ADPS. To encourage the ADPS, it is therefore essential to focus on enhancing the perceived effort expectancy of these methods and increasing individuals' behavioral intention to use them. This study helps individuals to make a transaction on a large scale with minimal effort.

The current study demonstrates that SI has a significant negative significant impact on BI. Some past studies relate to the findings of the existing study (Chaveesuk *et al.*, 2021; Sivathanu, 2019). Furthermore, the personal nature of financial transactions means that users are often hesitant to seek help or guidance from others. The main reason for the SI negative impact on the BI of digital payment systems is culture. Culture is the most important factor that affects consumer behavior in the ADPS. Furthermore, the personal nature of financial transactions means that users often hesitate to seek help or guidance from others.

Existing research revealed that FC has a positive significant impact on BI to the ADPS. Some previous research confirmed the existing research results (Patil *et al.*, 2020; Sivathanu, 2019; Oliveira *et al.*, 2014; Alawan *et al.*, 2017). FC plays an important role in facilitating customers 24/7 for doing a transaction to use the technology. Individuals with access to the necessary resources and support for digital payment systems are more likely to perceive that using them is within their control.

It is noted that the existing study result HM has a positive significant effect on BI to the adoption of digital payment systems. These results supported by the prior study confirm that HM has a positive effect on BI (Lin *et al.*, 2022). HM determines human behavior and decision-making processes to adopt the new innovative technologies. The investigation of this study is to encourage the ADPS, it is therefore essential to focus on enhancing individuals' hedonic motivation. This can involve promoting the enjoyable aspects of using these systems, such as convenience and social recognition.

The outcome of this hypothesis in this study shows that HB has a positively significant impact on BI to the adoption of digital payment systems. Some previous studies confirmed the positive effect of the existing study (Lee, 2021; Oliveira *et al.*, 2014). The HB was also the most important variable to the predictor of behavioral intention. When a behavior becomes a habit, it is more likely to be performed repeatedly, which increases the likelihood that it will be performed in the future. When adopting



new technologies, habits play an essential role in consumer behavior toward the ADPS. Suppose the individual has an HB of using their smartphone for everyday tasks, such as checking email, messaging friends, or browsing social media. In that case, they may be more likely to ADPS as a convenient and natural extension of their existing habit.

This study reveals the result BI represented the positive and significant effects of ADPS. This finding aligns with earlier research. (Raza *et al.*, 2019; Ifedayo *et al.*, 2021). BI is a psychological variable that affects an individual's behavior towards ADPS. When individuals strongly intend to use technology, such as ADPS, they are more likely to do so. In this current study, TS negatively significantly moderates the BI and ADPS. Some study shows that technostress as a moderator negative significant effect (Khlaif *et al.*, 2022). This negative effect can be seen in several ways. Technostress can reduce the confidence of people in their ability to utilize digital payment methods effectively.

## 6. Implications of the study

### 6.1 Theoretical implication

Regarding research or theoretical contributions, firstly, our study contributes to the existing literature on the ADPS in Pakistan. Previous research has not been conducted a research in Pakistan for the purpose of enhancing of ADPS (Khan *et al.*, 2022; Ali *et al.*, 2023). Nevertheless, significantly fill the gap this study enhances comprehension of user ADPS in Pakistan, which has received some attention from previous studies. Secondly, many researchers used the TAM model to the ADPS in Pakistan (Hutomo, 2023; Hussain *et al.*, 2021; Ullah *et al.*, 2022). The TAM model mostly used in the adoption in technology. Venkatesh *et al.*, (2012) suggest that the UTAUT2 model provides the best result for the adoption of new technology. Nevertheless, the current research fulfills the gap to use UTAUT2 model to the ADPS in Pakistan.

Thirdly, this research enhances the UTAUT2 model as well as technostress as a moderator effect between BI and the ADPS in Pakistan. Previous studies (Fayyaz *et al.*, 2023; Fatima *et al.*, 2021) have not test expanding the UTAUT2 model with technostress in the ADPS in Pakistan. Technostress is a technological term that describes the individual stress related to technology. In my knowledge, this is the first study conducted in Pakistan in the context of ADPS. Specifically, this research indicates the positive significant performance expectancy, effort expectancy, facilitating condition, habit, and hedonic motivation on behavioral intention and adoption of digital payment systems in Pakistan. In this current research, social influence has a negative significant effect on behavioral intention to the ADPS. Surprisingly no existing study has explored technostress effect on the adoption of new technology. Our study explored this concept to investigate the moderate effect between behavioral intention and the ADPS in Pakistan.

### 6.2 Practical implications

In this study the practical contribution and support of the result of the following factors play an important role: BI, technostress, PE, EE, FC, HM, and habit. Therefore, any bank striving to encourage customer ADPS must prioritize attention to these factors. Personal communication is one of the best ways to encourage the potential user to ADPS is more helpful and has many advantages compared to the traditional way (Laukkanen *et al.*, 2009). In current study results also offer insight to the Pakistani bank regarding the PE and EE. Therefore, the banking industry has to be defined that digital payment systems can conduct a financial transaction, efficiently, effectively, and securely, in addition within minimum time and provide information to the customers to use successfully these types of digital payment systems (Simintiras *et al.*, 2014). Particularly, increasing the financial services provided by Pakistani banking to the Pakistani customers to maintain the performance 24/7 these kinds of services will positively effect on the customer's perception to the adoption of digital payment systems.

Notably, Pakistani banks could utilize the advanced tool of social media to enhance the effectiveness and cost-efficiency of their campaigns. In this regard, posting adorable videos on social media tools like YouTube, Facebook, and Instagram, these channels are participating in hedonic value related to such systems (Chen *et al.*, 2014). In this technological era, high-quality and creative frontier design according to customers need will enhance productivity and volume through innovation and uniqueness strategy (Simintiras *et al.*, 2014). Hedonic motivation also enhances the adoption of new technology. This study also indicates that Pakistani customer's behavioral intention seems to divert the role of technostress. This is the bank's responsibility to reduce the technostress in consumer's minds. By convincing their customers to provide better quality service, then they will use digital payment systems without any technostress. According to this study, technostress is the main factor who causes a hurdle to the consumer's adoption of digital payment systems.

## 7. Limitations and future research directions

Moreover, this study conducts successful research in the area of ADPS, and this study shows some limitations. In this current research, the data was collected through a purposive sampling of Pakistani banking customers in Punjab, Sind, Baluchistan, Khyber Pakhtunkhwa, Gilgit Baltistan, Azad Kashmir, and Islamabad, that is why, the current result is different from the other cities. The current result shows that most of the respondents in this study were young, well-educated, medium income, and have adequate experience in digital payment systems like mobile banking apps, (For instance, Age, Gender, Income, Education, and experience of digital payment systems). This current research also covered only ADPS (Mobile Banking App). This might limit the application of the current study's findings to various types of electronic channels in different settings. Furthermore, cross sectional data were collected, presenting concerns regarding these data' long-term significance. Certainly, this concern may change the consumer's perception and belief towards technology adoption with the passage of time (Lee *et al.*, 2003). In the same way, the national culture of the Pakistani customer's intention toward the ADPS was not measured in this existing research. Essentially, it may be more beneficial to examine elements of the dominant culture (Constantiou, Papazafeiropoulou, and Vendelo, 2009).

Since the present study's results are based on cross-sectional data, a longitudinal investigation may be able to shed further light on this issue and determine the degree to which the effects of the suggested factors may stabilize or alter overtime. Furthermore, this current research collected data from Punjab, Sind, Baluchistan, Khyber Pakhtunkhwa, Gilgit Baltistan, Azad Kashmir, and Islamabad cities in Pakistan. Using a systematic method to develop and validate the conceptual model for the current study, creating opportunities for its reapplication and retesting to better understand consumers' intentions and behaviors about various technologies like online shopping, e-learning also this existing conceptual framework should be used in different sectors like health sector, hotel management and also use in education sectors. In fact, the adoption of digital payment systems rate is low from other developing countries like India and China, Price value is not included in this current study conceptual model. It became a most important factor they should also use in future research on both BI and ADPS. And last one Trust should be suggested in future research.

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