



# Factors Affecting the Intention to Use Digital Banking: An Empirical Study from an Emerging Economy

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## Research Article

### Abstract

**Purpose:** Banks are adopting digital banking to attract clients by providing more useful services, and creating safe, dependable, and easy-to-use online tools. The purpose of this research is to examine the factors influencing the overall adoption of digital banking by retail banking customers.

**Methods:** An expanded technology acceptance model (TAM) serves as the basis for the theoretical framework of the study. A structured survey of 200 consumers is used to gather primary data, and multiple regression analysis is used to examine the correlations between six independent components.

**Results:** The research indicates that web capabilities, perceived utility, and awareness all have a positive and significant impact on the adoption of digital banking.

**Implications:** This study offers guidelines for creating service models and boosting the use of digital banking. The findings can help policymakers and financial organizations devise strategies for constructing the infrastructure and methods for offering digital banking services.

**Originality:** It is a pioneering effort to explore the combined effects of Perceived usefulness, usability, Privacy, safety, trust Cost of transactions Awareness and Web features on Bangladeshi users' intention to use digital banking.

**Limitations:** This study is based on quantitative data analysis with limited sample size and period. In future, qualitative research may be conducted for deeper understanding of the issue.

**Keywords:** Intention to Use, Internet Banking, Digital Banking, Bangladesh.

## 1. Introduction

Information technology advancements have given banking companies effective ways to serve their consumers around-the-clock (Hu & Liao, 2011). The term "digital banking" refers to the use of electronic platforms for banking operations such as deposits, transfers, withdrawals, management of checking and savings accounts, loans, bill payments, applications for financial products, and account services (Don, 2016). (Howcroft et al., 2002) defined digital banking as the process of digitizing all banking functions that were previously solely accessible to clients in bank branches. Banks have adopted Electronic Banking (E-banking) due to factors including simple access to the Internet, an increase in Internet users, cost effectiveness, convenience, and profitability. Popular low-cost, error-free digital banking services include online banking, mobile and tablet banking, mobile checks, tax adjustments, e-statements, and online bill payments (Ananda, 2017). By reducing operational expenses by about 20–25%, the actual application of digital banking strengthens banks' competitive edge (Olanrewaju, 2018). In a cutthroat industry, banks must

take the required measures to exceed customer expectations (Ananda & Sonal, 2017). E banking will boost customer satisfaction by delivering quicker customer service. It contributes significantly to making services easier and more effective for clients (Bauer & Hein, 2006). Overall, e-banking services are more practical and less expensive than conventional branch services from the viewpoints of both banks and clients (Alam et al., 2007). The use of electronic platforms for banking services has been encouraged by the global banking and financial services sector. The internet's involvement in the banking and finance sector is transforming how products and services are packaged, proposed, delivered, and consumed (Sathye, 1999). Smart phones, social media, "apps" that can be downloaded, and cloud computing have given users more freedom to compare providers based on features and pricing (Kelly, 2014). Online and mobile are the most popular channels among clients, claim (Kotler & Armstrong, 2014). The survey also showed that people preferred using digital banking as their main method of communication with banks. The findings of the study demonstrate that the changeover from conventional to electronic occurs in a slow and steady manner. In recent times, online banking and technological advancements have made their way into Bangladesh, leading to the growth of digital banking. Technology-based solutions are becoming more and more crucial to the expansion of Bangladesh's economy. Nowadays, digital banking covers a wide range of banking facilities. Considering this point, this research aimed to practically comprehend the fundamental aspects that affect the acceptance of online banking by individuals in Bangladesh. Furthermore, the research also endeavored to investigate and gauge the connections among vital elements for customer approval of electronic banking amenities.

## **2. Review of the literature and development of hypotheses**

Searching existing literature and forming a potential assumption has been done extensively in various countries to recognize the elements that affect the acceptance of different types of electronic banking. The reasons why customers are encouraged to use electronic banking services have been analyzed in research conducted in developed nations by various authors, including (Lasser et al., 2005), (Kolodinsky et al., 2004), (Pikkarainen et al., 2004) and (Karjaluo et al., 2004), among others. The studies of (Suh & Han, 2002) examine the Expanded Technology Acceptance Model (TAM) to investigate the elements that affect the acceptance of various forms of electronic banking. Therefore, this research is a lengthened Technology Acceptance Model related to online banking. According to prior studies, perceived usefulness, perceived usability, privacy, cost of transactions, awareness and web features all these six elements that affect the acceptance of digital banking were recognized and put into practice with a theoretical system. In the following section we discuss the past literatures of the six elements and develop the hypothesis.

### **2.1 Perceived usefulness**

According to the Technology Acceptance Model (TAM), perceived utility is one of the elements influencing the acceptance of new technologies, according to empirical data from (Purohit & Arora, 202; Neugen, 2020; Davis et al., 1989). Perceived utility is one of the concepts that is most frequently employed in the extant literature on internet banking, according to (Guriting & Ndubisi, 2006). Perceived utility was the most significant factor influencing Internet banking intentions in a study by (Pikkarainen et al., 2004). Perceived value may influence people's decision to use online banking, according to a study by (Jaruwachirathanakul & Fink, 2005). Numerous other research (Venkatesh & Morris, 2000; Chiu et al., 2005; Luarn & Lin, 2005; Hanafzadeh & Khedmatgozar, 2012; Bong-Keum & Yoon, 2013) have also found a strong link between perceived utility and adoption of mobile banking. The result is the following hypotheses:

*H1: Adoption of digital banking is positively influenced by perceived utility.*

### **2.2 Perceived usability**

The Technology Acceptance Model (TAM) created by (Davis et al., 1989) included the idea that the level of comfort a person experiences while using new technology can affect whether or not they choose to adopt it. (Tugade et al., 2021; Gounaris & Koritos, 2008) determine that how easy it seems to use online banking affects a person's desire to use it. Furthermore, past studies indicate that the level of ease with which something is used can greatly influence one's desire or willingness to use it (Hernandez & Mazzon, 2017; Guriting & Ndubisi, 2006; Eriksson et al., 2005; Venkatesh & Davis, 2000; Venkatesh & Morris, 2000). Sorry, there is no content provided to paraphrase. Please provide the content to receive proper assistance. (Chen & Barnes, 2007) discovered that how easy a customer thinks using a product or service is, greatly influences their desire to personalize it. Numerous researches have shown that the way customers perceive the simplicity of using e-banking channels has a good effect on their willingness to adopt them (Tran, 2021; Amin, 2007; Cheng et al., 2006; Al-Somali et al., 2009). After analyzing the research outcomes, the following assumption is formulated:

*H2: The level of ease that is felt when using digital banking has a beneficial impact on its acceptance.*

### **2.3 Privacy, safety, and trust**

Safety has consistently been a significant worry in online banking. As per the study by (Tugade et al., 2021; Casaro & colleagues, 2007), the security, privacy, and reputation of websites influence the trust of customers and the participation of financial services companies in online transactions. A research done by (Musaev & Yousoof, 2015) advises banks and other financial establishments to create confidence in online banking services when it comes to the transfer of information, confidentiality, safety, dependability, and accuracy of data. (Bhatt & Bhatt, 2016) state that security issues are among the key factors why people refuse to use mobile banking services. Banks try their hardest to persuade clients that their details and dealings are protected (Sharma, 2011). We are aware that safety and confidentiality are crucial factors in using internet banking, as suggested by various studies (Hernandez & Mazzon, 2017; Chen & Barnes, 2007; Sathye, 1999; Hamlet & Strube, 2000; Tan & Teo, 2000; Polatoglu & Ekin, 2001; Black et al., 2002; Howcroft et al., 2002). According to (Sharma et al., 2018), the dependability of a system has a favorable impact on a person's willingness to accept mobile apps. A research performed by (Alnsour & Al-Hyari, 2011) discovered that being aware of security results in confidence, and that confidence greatly influences the utilization of online banking. Taking into account the aforementioned research, the subsequent suppositions were formulated:

*H3: Digital banking adoption is positively impacted by security, privacy, and trust.*

### **2.4 Cost of transactions**

Modern banking through technology is swifter and less costly compared to conventional banking (Sayar & Wolfe, 2007). Online banking is affordable, the amenities provided are favorable, and they are not restricted by location or hours (Wu, 2005). A lot of people are changing from regular banking to online banking since customers can carry out their transactions all day and night at an inexpensive rate. Reduced expenses for transactions could simplify cross-border electronic banking, according to (Worku et al., 2016). Following the outcomes of the research mentioned above, the subsequent suppositions were created:

*H4: Digital banking adoption is positively impacted by low transaction costs.*

**2.5. Awareness**

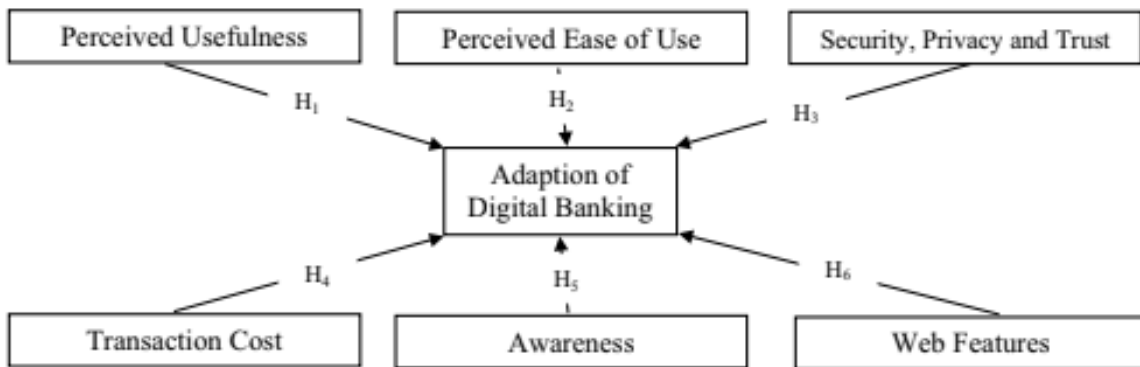
Mobarek (2007) observed in his research that the methods used to deliver banking services are inadequate because customers' requirements are not met because of insufficient familiarity with electronic banking and technology. The study conducted by (Harihara & Pavithra, 2012) suggests that banks should display instructional details regarding the implementation of Internet banking services on their websites. A different research conducted in 2016 by (Amutha, 2016) proposes that financial institutions ought to implement measures to increase customers' familiarity with digital banking technologies. A research conducted by (Bhatt & Bhatt, 2016) revealed that not being informed is a significant hindrance to customers in embracing mobile banking services. Therefore, for this investigation, we created the subsequent assumption.

*H5: When customers are informed about the existence of digital banking options, it brings about a favorable outcome and leads to the acceptance of digital banking services.*

**2.6 Web features**

According to a research by (Waite and Harrison, 2002), there are several factors that affect customer satisfaction with e-banking transactions, including transaction methods, decision-making ease, interactive questions, expert knowledge, search efficiency, physical security, and technology. Seven parameters were found, including the degree of Customers can now perform transactions electronically on his bank's website, according to (Swaid & Wigand, 2007). According to a study by (Floh & Treiblmaier, 2006), banks should create user-friendly websites since website quality significantly affects consumer happiness and confidence. increase. The following hypothesis were formed in light of the investigations mentioned above:

*Hypothesis 6: The elements of online banking have a beneficial impact on the acceptance of digital banking.*



**Fig.1: Research Model**

**3. Research Methodology**

**3.1 Sampling and data gathering**

The sample is drawn from the total population of retail clients of two Islamic banks and eight conventional private banks in Bangladesh. A client who exclusively uses online banking services is taken into consideration as the study's respondent. Convenience sampling method was used to identify the clients (Moosa et al., 2020; Ananda & Sonal, 2017). A structured questionnaire was used to gather the data. A total of 1000 respondents were emailed an internet link to complete the questionnaire. The participants in this survey gave their consent and received no payment or other inducement to participate. Out of 435 replies, only 200 returned questionnaires that addressed every issue on the survey were taken into consideration in this research.

The demographic description of the respondents (Table 1) showed that the percentage of men participating in the survey was higher than that of women (136 men made up 68.0% while the number of women was 64 comprising 32.0%). About education, most respondents held postgraduate (113 people, at 56.5%). However, in profession, there were 123 from private sector and 20 respondents of government employee, comprising about 61.5% and 10.0% of the sample, respectively.

**Table 1: Demographic profile**

Demographic variables	Categories	Total Respondent	Percentage %
Gender	Male	136	68.0%
	Female	64	32.0%
Age	21-30	109	54.5%
	31-40	66	33.0%
	41-50	21	10.5%
	51-60	4	2.0%
Level of Education	Higher Secondary	6	3.0%
	Diploma	13	6.5%
	Undergraduate	61	30.5%
	Postgraduate	113	56.5%
	PhD	7	3.5%
Profession	Govt. Employee	20	10.0%
	Private Employee	123	61.5%
	Business	25	12.5%
	Self-employed	7	3.5%
	Housewife	13	6.5%
	Student	12	6.0%
Preferable banks	UCBL	57	28.5%
	City Bank	37	18.5%
	IFIC	14	7.0%
	IBBL	16	8.0%
	DBBL	21	10.5%
	SIBL	8	4.0%
	Sonali Bank	12	6.0%
	SCB	14	7.0%
	AB	6	3.0%
	EBL	15	7.5%
Length of Digital Banking	1-3 years	92	46.0%
	4-6 years	65	32.5%
	7-10 years	38	19.0%
	More than 10 years	5	2.5%
Preference for bank transaction	Personal visit to the bank	25	12.5%
	Use of digital banking services	175	87.5%
Usage of digital banking services	ATM	45	22.5%
	Debit & Credit Card	50	25.0%
	Internet Banking	74	37.0%
	Mobile Banking	28	14.0%
	E-bill Payment	3	1.5%

As respondents checked numerous boxes regarding their use of digital banking services, the total under the column of several respondents does not equal 200. As a result, the answer count is considered rather than the number of responders.

### 3.2 Measurement and Design

This research has a cross-sectional layout with a numeric method. The survey gear comprises of two segments. The initial segment consists of 9 questions relating to people's characteristics. The latter section is composed of 24 questions using a 5-point scale known as the Likert scale, divided into 6 categories. The inquiries in the latter section varied from "Strongly agree" (1) to "Strongly disagree" (5) on a measurement scale called Likert. These inquiries were created by examining written works relevant to the aim of this research and are displayed in Table 2. To assess and improve this tool, a preliminary investigation was carried out with a group of 30 participants. Small modifications (words, material, layout, methods) were performed to the questionnaire tool in response to suggestions acquired from the initial test.

**Table 2: Variables that contribute to the adoption of digital banking**

Variables	Items	Source
Perceived usefulness	Speed of transaction time	Jaruwachirathanakul and Fink (2005), Guriting and Ndubisi (2006), Hanafizadeh and Khedmatgozar (2012) and Pikkarainen et al. (2004)
	Job efficiency and effectiveness	
	Convenience of managing financial transactions	
	Greater control over financial transactions	
Perceived ease of use	Opportunity to increase the e-skill level	Amin (2007), Al-Somali et al. (2009), Chen and Barnes (2007), Cheng et al. (2006) and Gounaris and Koritos (2008)
	User-friendliness than branch visit	
	Clarity and understandability of system interaction of system interaction	
	The flexibility of interaction	
Security, privacy and trust	Easy way to do things	Musaev and Yousoof (2015), Alnsour and Al-Hyari (2011), Sharma et al. (2018) and Howcroft et al. (2002)
	Safety and free from monetary losses	
	No harm to customer privacy	
Transaction cost	Error-free transactions	Kumbhar (2011), Sayar and Wolfe (2007) and Worku et al. (2016)
	Trustworthiness and dependability	
	Relatively cheaper transaction cost	
Awareness	Provision of discounts on online booking/buying	Bhatt and Bhatt (2016), Amutha (2016), Harihara and Pavithra (2012) and Mobarek (2007)
	Provision of value-added benefits	
	Availability of latest and accurate information	
	Awareness of the possible risk	
Web features	Comfortability in performing transactions	Floh and Treiblmaier (2006), Waite and Harrison (2002) and Swaid and Wigand (2007)
	Confidence in using digital banking devices	
	Quality of the contents (relevant, objective, well written, professional, and updated regularly)	
	The attractive design of the portal (colors, text, image, sound, videos)	
	The organization of web contents (Indexing, mapping, Consistency, links, logos, domains, etc.)	
Control variable	Active, interactive facilities (clear instructions, help functions, FAQs, feedback, review transactions, etc.)	Time fixed effects

### 3.3 Data Analysis Tools

Basic statistics regarding the variables, such as their average, degree of variation, and response rate, were computed. We refer to this as descriptive statistics. Quantitative techniques were utilized to validate the instrument and test the hypothesis.

**Table 3: Description of variable**

Variables	Acronyms	Description
Dependent variable	DBA	Digital banking adoption
Independent variables	Pu	Perceived usefulness
	Peu	Perceived ease of use
	Spt	Security, privacy and trust
	Tc	Transaction cost
	Aw	Awareness
	Wf	Website features
Control variable	<i>at</i>	Time fixed effects
	$\epsilon$	Error term

Tests of dependability and t-tests were utilized as statistical methods for inference. A analysis using multiple linear regression with least-squares method was used to investigate how six independent factors relate to the adoption of digital banking. The connection between the independent and dependent variables in a regression model is expressed through Equation 1, which incorporates a constant factor. Table 3 contains explanations for the variables.

$$DBA = \beta_0 + \beta_1Pu + \beta_2Peu + \beta_3Spt + \beta_4Tc + \beta_5Aw + \beta_6Wf + \alpha + \epsilon \tag{1}$$

Equation (1) illustrates how each component contributes to the level of digital banking adoption and aids in estimating the influence of independent factors on adoption.

### 3.4 Validity and Reliability

The consistency of each measuring scale's items was evaluated using the questionnaire's reliability. In this study, the reliability and internal consistency of the questionnaire were assessed using Cronbach's alpha. According to (Ananda & Sonal, 2018), an alpha value of 0.75 or more is regarded as satisfactory and a reliable indicator of construct dependability.

**Table 4: Reliability analysis**

Variables	No. of items	Cronbach's alpha
Perceived usefulness	5	0.940
Perceived ease of use	4	0.947
Security, privacy and trust	4	0.943
Transaction cost	3	0.942
Awareness	4	0.832
Website features	4	0.771
Final reliability	24	0.942

Cronbach's alpha was figured out for all setups in Table 4. The alpha value for each factor was found to be much higher than 0.75, which shows that the tool is dependable. Also, the overall measurement of consistency and dependability for the whole 24-item list of questions was 0.942, showing that the list is very uniform and trustworthy.

## 4. Results and Discussions

### 4.1 Descriptive statistics of the sample

Table 5 shows information about different things that influence people to start using online banking. The usefulness (3.84), ease of use (3.85), safety, privacy and trust (3.36), fees (3.96), idea of digital banking services (3.54) and website abilities (3.09) are all around the same level. We can find the complete variable (3.77) in the chart. You can notice that every part has a rating of 5 or more. This shows that consumers think all six things affect using online banking.

**Table 5: Descriptive Statistics**

Variables	Min.	Max	Mean	Std. deviation	Skewness	Std. error	Kurtosis	Std. error
Perceived usefulness	1	5	3.84	1.05	-2.26	0.172	7.02	0.342
Perceived ease of use	1	5	3.85	1.06	-2.44	0.172	7.12	0.342
Security, privacy and trust	1	5	3.36	1.07	-2.36	0.172	3.28	0.342
Transaction cost	1	5	3.96	1.06	-2.44	0.172	9.11	0.342
Awareness	1	5	3.54	1.04	-2.19	0.172	6.32	0.342
Web features	1	5	3.09	1.21	-0.85	0.172	1.09	0.342
Total variables	1	5	3.77	0.892	-2.88	0.172	8.33	0.342

Note: N = 200; Scale: 1 (strongly agree) to 5 (strongly disagree)

Table 6 displays the connections between the factors that make things happen and the consequences that result from them. This means that knowing about digital banks is strongly linked to people using them, but the website abilities are not very strongly linked to people using digital banks. The meaning level shows that the research design is appropriate.

**Table 6: Correlation Coefficient**

Variables	R values	P value
Perceived usefulness	0.729	0.001
Perceived ease of use	0.731	0.001
Security, privacy and trust	0.691	0.001
Transaction cost	0.783	0.001
Awareness	0.612	0.001
Web features	0.417	0.001

In this research, we measured correlation coefficients to find out the importance and way of important relationships between different factors. Table 7 displays the relationship between the separate factors of the model. The study found that the independent variables have a strong positive relationship. This shows that all the things being tested in the study are linked to each other, and they have similar patterns in how they connect.

**Table 7: Correlation matrix**

Factors	Pu	Peu	Spt	Tc	Aw	Wf
Pu	1					
Peu	0.792**	1				
Spt	0.639**	0.663**	1			
Tc	0.684**	0.707**	0.776**	1		
Aw	0.751**	0.674**	0.701**	0.722**	1	
Wf	0.351**	0.398**	0.432**	0.458**	0.512**	1

Note: \*\*Significant at the 0.01 level (2-tailed)

#### 4.2 Multiple regression analysis

Find out how the predictor and dependent variables are related by using the method of least-squares multiple linear regression. This will help estimate the individual impact of each aspect on the adoption of digital banking. In Table 8, it shows that people using digital banking depends on how useful it is, how easy it is to use, how much they can trust it, how safe it is, how much it costs to use, if they know about it and how good the website is. Something is being demonstrated. R2 shows how much of the changes in the outcome variable can be explained by the input variables. The calculated R2 is 0.751, which means that independent variables account for 75.1% of the changes in digital banking adoption. The remaining 24.9% is because of factors that we cannot explain.

**Table 8: Model summary**

Model	R value	R2 value	Adjusted R2	Std. error of the estimate
1	0.886	0.751	0.742	1.2065

The outcomes of this test for the model are shown in Table 9 with ANOVA technique. This outcome indicates that the use of online banking relies on how much people accept it. The test outcomes can accurately forecast the thing that is affected. The F value (76.31) means that the entire model is very important, with a significance level of 5% (0.001 < 0.05). This means that the plan can foresee the acceptance of online banking.

**Table 9: ANOVA**

Model	Sum of squares	df	Mean square	F value	P value
Regression	516.403	6	86.081	76.31	0.001
Residual	217.704	193	1.128		
Total	734.107	199			



Table 10 displays the outcomes of a plan that predicts things that add to the use of online banking. The study found that the biggest factor that makes people use digital banking is awareness about it. This is more important than how well we know about the functions. It was proven to be very helpful ( $\beta_1 = 0.071$ ,  $P < 0.05$ ). However, how safe and private it is ( $\beta_3 = 0.064$ ,  $P < 0.05$ ), and the costs affects most after awareness of how much people use digital banking services ( $\beta_4 = 0.196$ ,  $P < 0.05$ ). So, H1, H3, H4 and H5 were proven to be true based on the data, while H2 and H6 were determined to be false. Here is the Equation 1 that presents a basic model for digital bank (DBA) usage.

$$DBA = 0.683 + 0.071(Pu) + 0.042(Peu) + 0.064(Spt) + 0.196(Tc) + 0.238(Aw) - 0.08(Wf)$$

**Table 10: Coefficients Analysis**

Model	Non-standardized coefficients		Standardized coefficients	T-statistic	P value	Decision on hypothesis
	B	SE				
(Constant)	0.683	0.498	Beta	1.185	0.123	
Perceived usefulness	0.071	0.043	0.157	2.367	0.047	H1: accept ( $P$ value $< 0.05$ )
Perceived ease of use	0.042	0.056	0.093	0.801	0.536	H2: reject ( $P$ value $> 0.05$ )
Security, privacy and trust	0.064	0.044	0.011	1.723	0.043	H3: accept ( $P$ value $> 0.05$ )
Transaction cost	0.196	0.039	0.32	3.214	0.025	H4: accept ( $P$ value $> 0.05$ )
Awareness	0.238	0.049	0.363	5.119	0.007	H5: accept ( $P$ value $< 0.05$ )
Web features	-0.08	0.028	-0.021	-0.69	0.921	H6: reject ( $P$ value $< 0.05$ )

The model is well established, and the results of multiple regression analysis clearly demonstrate that awareness, costing and perceived utility have a positive impact on overall adoption of digital banking. The regression model equation, which was derived, shows this. (2) Retail customer acceptance levels for digital banks in Bangladesh would increase with improvements in four crucial aspects (web features and perceived usability).

## 5. Conclusion

This research aims to find out what causes digital banking services to be successful in Bangladesh by using the extended TAM model. The tool used in the research is very good at being dependable and the information collected is logical and trustworthy. On a scale of 1 to 5, most people gave a good response of 3.77, which is higher than usual. Generally, people were satisfied with the situation. The results show that three things - how helpful people think it is, how easy it is to see, and how well it works online - all help make digital banking more popular in Bangladesh. People's belief that using digital banking is useful was the biggest reason why they started using it, according to Bong-Keum and Tom (2013). Knowing that digital banking exists (awareness) and being able to use it on the internet (web capabilities) were also important factors in getting people to start using it, according to Manivannan and Masa (2014) and Juwaheer et al. (2012). Also, the model that predicts results has been verified and three guesses (H1, H5, and H6) are proven to be true. The study's findings can help policymakers and financial organizations devise strategies for constructing the infrastructure and methods for offering digital banking services. In order to attract customers, banks are implementing digital banking by offering more valuable services, educating the public about the benefits of using these tools, and developing secure, reliable, and user-friendly online tools. We must put more effort into improving banking benefits from banking online.

## 6. Limitations and Direction for Further Research

The study's sample size and period were both limited. Because the study is cross-sectional, the results are limited to the study's timeframe. Furthermore, the survey solely looked at digital banking adoption from the standpoint of retail banking consumers. The TAM model employed gave equal weight to only six adoption criteria. In this study, the linear regression analysis was used to estimate simply the direct effect of the independent variable on the dependent variables, rather than the intricate relationship between the variables. Future studies may be conducted to overcome the above mentioned limitations.

**Conflict of Interest:** The author declares no conflict of interest.

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