



## The Evolution of Payment Systems in Bangladesh: Transition from Traditional Banking to Blockchain based Transactions

Md Jahirul Islam \*<sup>1</sup>, and Md Rakib Mia\*<sup>2</sup>

<sup>1</sup> Computer Science and Engineering, Ahsanullah University of Science and Technology. Dhaka, Bangladesh.

<sup>2</sup> School of Business, Ahsanullah University of Science and Technology. Dhaka, Bangladesh.

### KEYWORDS

Blockchain Technology  
Cryptocurrency Adoption  
Traditional Banking  
Transformation  
Online Banking Security

### ABSTRACT

This study offers a thorough examination of Bangladesh's quickly changing financial environment, which is characterized by a notable shift away from conventional banking practices and toward cutting-edge innovations like blockchain and digital payments. The study's main goal is to comprehend how users adopt and perceive these financial technologies. To this conclusion, a variety of methodologies, including sentiment analysis, regression models, correlation analysis, and descriptive statistics, are used on a sample of mostly educated, young adults. The main conclusions show that online banking services are seen as having a moderate level of security, that use and security ratings are negatively correlated, and that service variety and security perceptions are positively correlated. Furthermore, despite increased knowledge, the report indicates a cautious attitude to cryptocurrency adoption. The study also emphasizes how digital banking might eventually supplant more conventional approaches, with security and user concerns playing a major role in this notion. Users' opinions on new payment system adoption seem to be a combination of indifference and somewhat favourable. Reaching more age groups, focusing on safety are some ideas found to make online banking better. The study on focused at specific groups of people and services, so future any work should look at diverse range of people and bigger topics. Overall, it gives banks and government helpful facts and plans to deal with digital money's chances and challenges in Bangladesh.

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## 1. INTRODUCTION

Bangladesh's financial system has changed a lot in the last ten years. New modern transaction tools are part of the banking system, and people now have diverse ranges of choices, from offline transactions to online transactions. This shift shows a worldwide move towards a digital payment system instead of conventional banking practices. People now use digital payments and blockchain technology more than in the past. The inclination of Bangladesh toward faster, safer financial transactions provides a compelling example of how new technology like blockchain cryptocurrency is remaking the financial landscape in nations striving to grow their economy. This study closely studies the changing financial system, looking at different facets of Bangladesh's financial transformation, from traditional banking, which is very slow

to reach every corner of the country, to new digital, robust ways of online banking that let more people take part without the need to be worried about safe, and security. Blockchain technology ushers a new era of safer, transparent, enhanced, and more secure financial transactions, making Bangladesh a leader in the rapid financial evolution.

The study explores the sentiment of the people toward adopting new financial technologies in Bangladesh. It considered data from a wide range of respondents using various analyses such as statistics, models, and sentiment analysis. The result of this study allows us to understand people's comfort with the fast-evolving financial system. Key areas of the study are the popularity of online banking service, awareness and their views of blockchain and cryptocurrency, and traditional banking's future with the arrival of these new

\*Corresponding author:

E-mail address: Md Jahirul Islam <jimonir004@gmail.com>.

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technologies. It also examines suggestions about existing payment systems and how they can be improved further.

However, the study had several shortcomings regarding how it has been conducted. The scope of the survey was affected by limited time and financial resources, as well as focusing on an educated populace, which constrained the scope of data collecting, possibly excluding significant viewpoints of the uneducated population. Notwithstanding these difficulties, the study provides valuable observations and suggestions for financial institutions, policymakers, and IT professionals to improve the online banking experience of the masses, promote the use of digital currency, and how best we can approach incorporating digital and traditional banking services.

This study delved into the recent trends and public perceptions to deepen our understanding of the current fintech sector in Bangladesh. What is more, the study highlighted the possibilities and associated issues of adopting a new technology for banking. Moreover, it also emphasized the demand to make financial products accessible and affordable to the various requirements of all individuals, not just a specific group of people.

### 1.1 Objectives of the study

- To analysis the evolution of payment systems in Bangladesh from traditional banking methods to digital and blockchain-based transactions.
- To examine the impact of digital payment systems on financial inclusion and user behaviour in the Bangladeshi banking sector.
- To investigate the awareness and perceptions of cryptocurrencies among Bangladeshi consumers and their impression toward adopting new digital technologies in the financial sector.
- To analyse the relationship between the safety and security of the online banking system, usage patterns, and quality of banking services in Bangladesh.
- To evaluate the potential challenges and opportunities in the integration and regulation of blockchain technology within the Bangladeshi financial system.

## 2. LITERATURE REVIEW

The evolution of payment systems in Bangladesh has seen major changes, shifted the financial landscape and mirrored global banking and technology trends. This transition from traditional methods to blockchain based transactions is noteworthy, particularly given Bangladesh's distinct social and economic situation. The following literature review investigates this five years transformation by examining scholarly sources to give a thorough overview.

### 2.1 Traditional Banking and its Limitations

In the early 2010s, most of the banks in Bangladesh would use conventional banking systems. Back then, banks that relied upon traditional transaction systems showed some problems and limits. As Ali et al. said in their study in 2021, the usual banking system had long wait times and cost more money to do business. This made it hard for people to avail of the banking service in a fast manner. Also, Himel et al. talked about in 2021 talked about people who could not use banks. They said regular banks often could not serve rural areas and underserved groups well. The shortcomings of financial inclusion were a big headache, as it led to the deprivation of

essential bank services for many people. Together, these studies highlight the urgent need for a fairer financial system that works better, one that could fix these problems and provide equal financial help to every segment of the population. The findings of these researchers not only show the inherent challenges of the usual banking sector in Bangladesh and pave the way for looking fairer alternative financial systems. Their insights serve as a base for understanding how things moved toward more new and available financial solutions, such as digital and blockchain-based deals, which could change how financial business is done in Bangladesh.

### 2.2 The Rise of Digital Payments

By the mid-2010s, Bangladesh's financial industry underwent a huge transformation with the increased usage of digital payment technologies. These new transaction methods provided solutions to the problems that traditional banking previously faced. Thakuri et al. (2023) thoroughly examined the growth of mobile banking apps like Rocket and bKash. Their study showed how these services greatly increased people's access to financial tools by transforming the banking sector. The banking sector experienced a significant change with the arrival and fast acceptance of new digital payment methods, moving from unreliable, outdated physical systems to faster, easy-to-use digital systems.

The upgrade not only just modernized the technology but it also brought about a change in how people across the country got and used financial services. Ramli and Hamzah (2021) highlight the importance of this change, marking it as a pivotal transition from traditional to digital banking. Their study showed us how these new technologies gave people access to banking services and overcame the barriers of geographical location and financial constraints that previously hindered access to financial services for people from remote parts of Bangladesh.

The growth of the digital banking system not only changed how transactions are being conducted but also helped set up a more inclusive financial framework. This change was vital in closing the gap between individuals with bank accounts and those without, marking an essential step towards a more financially inclusive Bangladesh. As a result of this, the move towards digital platforms is the cornerstone of the ongoing advancement of the country's financial frameworks, paving the way for faster advancements and movements in the banking sector.

### 2.3 Blockchain: A New Frontier

Blockchain technology is bringing about significant changes to how Bangladesh financial institutions conduct business with customers, creating new payment methods regularly to keep up with the fast-changing world. This new technology highlights how blockchain may revolutionize our methods of financial transactions, moving towards a digital currency instead of paper currency; Begum (2021) delved deeper. They explored the vast potential of the blockchain payment system, highlighting how it could make things faster, more transparent, and safer when dealing with money. Their study says blockchain is a game changer as it gives a strong sense of security, easy access, and transparency that can solve many issues with how financial systems usually work. Rahman and Bhuiyan explored blockchain technology more in

2023, stressing the important role the government could play in speeding up this transformation. Their study showed the growing positive attitude and involvement of leading political and social organizations in overseeing and helping accept blockchain technology. This increasing interest from people with the power to influence people not just help the technology to get accepted by the people but also shows its potential to transform how Bangladesh's small to big financial firms handle its daily financial transactions. As a result of the acceptance of cutting-edge technology, Bangladesh is becoming a leader in modernizing how people do their daily financial transactions. The transformation to systems based on blockchain technology is seen as a new era for our banking sectors, marked by higher efficiency, more robust security, and transparency. This change also reflects a broader worldwide pattern towards digitizing and incorporating tech in the financial industry, highlighting Bangladesh's pledge to keep up with the fast-changing global systems, from money to everything else.

#### 2.4 Challenges and Opportunities

Bangladesh's tendency toward adopting blockchain-based technological solutions is promising, but it still needs to overcome several hurdles. Hernandez (2019) gave an insightful perspective on this shift, pointing out major hurdles like infrastructure limitations and red tape regulation. Their study stresses that though blockchain brings significant benefits, in order to maximize its potential requires huge investments in modernizing infrastructure technology and willingness by the people in power to streamline the change. Blockchain technology poses some challenges that go beyond code and programming. We must figure out how to smoothly incorporate this new technology with the current financial and legal systems. It is essential to lay a strong foundation and set guidelines and regulations for this groundbreaking technology that benefits everyone. Educating people about its benefits is also crucial, thus helping the change toward new technology smoother and making people comfortable about the latest technology. This technology's success will depend on how well we can address technical and social hurdles that might arise along the way. While blockchain technology faces some social and technological barriers, it has the potential to change Bangladesh's financial landscape. If issues are fixed well, it could make financial dealings safer, transparent, and quicker. This change, therefore, is vital for Bangladesh to utilize new tech to strengthen its economic sectors.

#### 3.5 Future Prospects

Blockchain technology has a promising future in Bangladesh, considering its adoption rate. Experts believe it will grow considerably, not only in the financial sector but also in other areas. Ferdous et al. (2020) think blockchain will help with the movement of daily goods and produce between places and make handling of payments very easy. Businesses and governments are already utilizing blockchain technology in several areas. If Bangladesh uses blockchain in all sectors, it could be a role model in all South Asian countries. Experts say blockchain may change the dynamics of Bangladesh's financial transactions and trade practices. Bangladesh could be a pioneer to its neighbours in improving the digital infrastructure and technology to make lives and economy better (Hussain et al., 2022).

### 3. METHODOLOGY

#### 3.1 Research Design

This study aims to methodically delineate blockchain-based transactions' current state and characteristics utilizing a descriptive research design within the Bangladeshi financial landscape, contrasting them with traditional banking methods. As outlined by Pandey and Pandey (2021), descriptive study is particularly effective in accurately capturing and depicting the specifics of a phenomenon without influencing the environment or subjects. This approach helps give a straightforward look at how things currently are without bias. It provides useful details about how much blockchain tech is used, how people use it, and what they think of it for financial dealings. Therefore, it is easy to collect numbers that can be studied using statistics. This study highlights useful recurring patterns and how things usually change over time (Babbie & Edgerton, 2023).

#### 3.2 Sample Selection

This study used a stratified sampling technique to select 150 respondents from different groups. Stratified sampling involved splitting the population into separate sections based on traits like age, gender, job, and where people live (Nguyen et al., 2021). It ensured a diverse sample representing diverse populations, such as bankers, financial experts, technology workers, and regular users of banking service. The groups will be divided by age, gender, career, and location within Bangladesh. This allows us to examine how different parts of society view the topic. Splitting the population guarantees that all important subgroups are fairly included in the sample. It reduces bias by choosing respondents randomly from each group. It also enables the sample to represent the entire population fairly (Berndt, 2020).

#### 3.3 Data Collection Instruments

This study focuses on collecting data through a carefully planned survey. The survey is designed to gather numerical data about how financial systems use and perceive blockchain technology, what people think about it, and its effects. As two experts said, planned surveys are helpful for getting exact, measurable answers in study dealing with numbers. Most of the questions in this survey asked people to choose answers on scales or pick from options given. This type of question is good at showing people's perceptions and acceptance and what they would do in a standard way, as other researchers recommend. The survey was conducted about different topics like how often blockchain is used, how satisfied users are, what people think about the security, and who is availing the financial services. These parts matched what other experts suggest should be looked at in study about technology in finance (Taherdoost, 2022).

#### 3.4 Data Collection Procedure

The study used an electronic method for gathering information. An online survey website shared the list of questions mostly with educated users of financial services. As Patridge & Bardyn (2018) said, collecting data online works well and lets you ask people everywhere in a country. This is important because it has made us take the opinion of people across Bangladesh. Participants got a link to the survey. They had all the necessary instructions about the questions and shared their opinions without any undue influence. This made it easy for people to participate in the survey. This online

surveying approach helps more people to take part and share their opinions, as mentioned by Latkovikj & Popovska (2019). Also, conducting surveys on the internet aligns with the recent trend, reflecting how researchers collect data now. It used social media technology to make it easy for a diverse range of people to take part and quickly put all the answers.

The information gathered went through a detailed examination using sophisticated statistical programs, as recommended by Liu (2020), who stressed the significance of solid data examination instruments in exploration. Descriptive- measurements will initially be utilized to summarize the information set, including determining steps of focal inclination (normal, halfway point) and measures of dispersion (typical deviation, run), taking after the methodologies depicted by Abu-Bader (2021). These numerical strategies are fundamental for giving a starting comprehension of the information, uncovering fundamental examples and properties inside the reactions.

### 3.5 Data Analysis

The information gathered went through a detailed examination using sophisticated statistical programs, as recommended by Liu (2020), who stressed the significance of solid data examination instruments in exploration. Descriptive- measurements will initially be utilized to summarize the information set, including determining steps of focal inclination (normal, halfway point) and measures of dispersion (typical deviation, run), taking after the methodologies depicted by Abu-Bader (2021). These numerical strategies are fundamental for giving a starting comprehension of the information, uncovering fundamental examples and properties inside the reactions.

The investigation applied mathematical reasoning to test ideas, like comparing expected results to what happened and seeing how things relate (Zhang et al., 2018). These methods are key to exploring connections between things measured and checking theories. Using analysis in this careful way will let the study find hidden information about how many banks use the blockchain system, what types of people use it more, and the positives and negatives people see in the blockchain technology compared to conventional banking systems.

### 3.6 Ethical Considerations

Following ethical guidelines was extremely important for this study. As Rivera et al. explained in 2022, keeping participants' private information private and ensuring no one knows about the opinion given in the survey is really important for the study. Everyone in the study was told exactly what the study was about and what they would have to do so they could decide if they wanted to join (Salganik, 2019). The information collected will be used for study purposes only and not shared with anyone else. This protects the privacy of the people in the study and makes sure the study meets ethical standards.

## 4. RESULTS AND DISCUSSIONS

**Table 1.** Respondents' Demographic Profile

Subcategory	Frequency	Percent	Valid Percent	Cumulative Percent
<b>Age</b>				
Under 18	6	4	4	4
18-24	24	16	16	20
25-34	114	76	76	96
45-54	6	4	4	100
<b>Gender</b>				
Male	96	64	64	64
Female	54	36	36	100
<b>Education Level</b>				
High School Graduate	6	4	4	4
College	6	4	4	8
Bachelor's Degree	90	60	60	68
Master's Degree or Higher	48	32	32	100
<b>Occupation</b>				
Student	72	48	48	48
Employed (Full/Part-time)	54	36	36	84
Unemployed	18	12	12	96
Other	6	4	4	100
<b>Income (BDT)</b>				
Less than 10000	36	24	24	24
10000-30000	48	32	32	56
30000-50000	24	16	16	72
50000-70000	18	12	12	84
Above 70000	24	16	16	100

Source: SPSS analysis

Table 1 presents a demographic breakdown of the respondents, showcasing a diverse set of participants in terms of age, gender, education level, occupation, and income (in Bangladeshi Taka, BDT). The age group distribution indicates a strong representation from the 25-34 age bracket (76%, cumulatively reaching 96%), followed by the 18-24 age group (16%). Individuals under 18 and 45-54 each comprise 4% of the respondents. Regarding gender, males are more prevalent (64%) compared to females (36%). Educational backgrounds vary, with 60% holding a Bachelor's degree and 32% having a Master's degree or higher. High school graduates and college attendees each represent 4%. The occupational status of respondents is primarily students (48%), followed by employed individuals (either full or part-time, 36%). The unemployed category and others constitute 12% and 4%, respectively. Income-wise, the distribution is relatively even across different brackets: 24% earn less than 10,000 BDT, 32% fall in the 10,000-30,000 BDT range, 16% in the 30,000-50,000 BDT bracket, 12% earn between 50,000-70,000 BDT, and 16% earn above 70,000 BDT. This demographic profile

reflects a varied group in terms of socioeconomic status, educational background, and professional engagement.

**Table 2.** Descriptive Statistics for Online Banking Services (Weighted by Gender)

	Mean	Std. Deviation	N
Rating the Security of Online Banking Services	3.44	1.275	150
Usage of Online Banking Services	.88	.377	150
Most Frequently Used Online Banking Services	1.91	1.216	150

a. Weighted Least Squares Regression - Weighted by Gender

Source: SPSS analysis

Table 2 shows data about online banking services based on gender. On average, people gave online banking security a rating of 3.44 out of 5. The standard deviation is 1.275. This indicates that the majority of the people thought security was acceptable, while some people thought it was better or worse. These ratings came from 150 people who answered questions about online banking security. Usage of online banking services shows a mean of 0.88 and a lower standard deviation of 0.377, suggesting a high usage rate with less variability. The most frequently used services have an average score of 1.91 with a standard deviation of 1.216, reflecting a diverse range of user preferences.

**Table 3.** Correlations<sup>a</sup> among Security Rating, Usage, and Service Diversity in Online Banking (Weighted by Gender)

		Rating the Security of Online Banking Services	Usage of Online Banking Services	Most Frequently Used Online Banking Services
Pearson Correlation	Rating the Security of Online Banking Services	1.000	-.355	.554
	Usage of Online Banking Services	-.355	1.000	-.382
	Most Frequently Used Online Banking Services	.554	-.382	1.000

Sig. (1-tailed)      Rating the Security of Online Banking Services      <.001      <.001

	Usage of Online Banking Services	.000	.	.000
	Most Frequently Used Online Banking Services	.000	.000	.
N	Rating the Security of Online Banking Services	150	150	150
	Usage of Online Banking Services	150	150	150
	Most Frequently Used Online Banking Services	150	150	150

a. Weighted Least Squares Regression - Weighted by Gender

Source: SPSS analysis

Table 3 displays the correlations between various aspects of online banking services, emphasizing the relationships among the security rating, usage, and the most frequently used services, all weighted by gender. The Pearson correlation between the security rating and usage is -0.355, indicating a moderate negative relationship; as security ratings increase, usage decreases slightly, suggesting that higher perceived security does not directly translate to increased usage. Conversely, the security rating shows a positive correlation (0.554) with the most frequently used services, indicating that higher security ratings are associated with a broader range of service usage. There's also a negative correlation (-0.382) between the usage of online banking services and the diversity of services used, suggesting that those who use online banking more frequently might concentrate on fewer specific services. All correlations are statistically significant ( $p < 0.001$ ), based on a sample size of 150. This analysis, weighted by gender, provides valuable insights into how security perceptions and usage patterns are interrelated in online banking.

**Table 4.** Model Summary<sup>b,c</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.575 <sup>a</sup>	.330	.321	1.050	.330	36.283	2	147	<.001

a. Predictors: (Constant), Most Frequently Used Online Banking Services, Usage of Online Banking Services

b. Dependent Variable: Rating the Security of Online Banking Services

c. Weighted Least Squares Regression - Weighted by Gender

**Table 5.** ANOVA<sup>a,b</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	80.077	2	40.039	36.283	<.001 <sup>c</sup>
	Residual	162.217	147	1.104		
	Total	242.294	149			

a. Dependent Variable: Rating the Security of Online Banking Services

b. Weighted Least Squares Regression - Weighted by Gender

c. Predictors: (Constant), Most Frequently Used Online Banking Services, Usage of Online Banking Services

Source: SPSS analysis

Table 4 and Table 5 present the results of a Weighted Least Squares Regression analysis, focusing on how the usage and diversity of online banking services predict the rating of their security, with an emphasis on gender weighting. The model summary (Table 5) shows a moderate correlation ( $R = 0.575$ ) with 33% of the variance in security ratings explained by the model ( $R^2 = 0.330$ ). The Adjusted  $R^2$  of 0.321 suggests a good fit with a slight adjustment for the number of predictors. The ANOVA table (Table 4) confirms the model's statistical significance ( $F = 36.283$ ,  $p < 0.001$ ), indicating a strong relationship between the predictors and the dependent variable. The regression sum of squares (80.077) against the residual sum of squares (162.217) further validates the model's effectiveness. These results highlight the impact of service usage frequency and diversity on users' security perceptions in online banking, nuanced by gender consideration

**Table 6.** Coefficients<sup>a,b</sup> of Regression Analysis on Security Ratings in Online Banking (Weighted by Gender)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error			
1	(Constant)	2.960	.314		9.420	<.001
	Usage of Online Banking Services	-.567	.247	-.168	-2.295	.023
	Most Frequently Used Online Banking Services	.513	.077	.490	6.703	<.001

a. Dependent Variable: Rating the Security of Online Banking Services

b. Weighted Least Squares Regression - Weighted by Gender

Source: SPSS analysis

The coefficients table 6 from the Weighted Least Squares Regression analysis (weighted by gender) offers insights into how different factors impact the perceived security of online banking services. The model reveals that the 'Usage of Online Banking Services' negatively influences security ratings ( $B = -0.567$ ,  $p = 0.023$ ), suggesting that increased usage is associated with a slight decrease in security perception. In contrast, the 'Most Frequently Used Online Banking Services' has a positive effect on security ratings ( $B = 0.513$ ,  $p < 0.001$ ), indicating that a wider variety of service usage correlates with higher security ratings. The significant t-values for both predictors confirm their influence on the dependent variable. The constant of 2.960 with a substantial t-value (9.420,  $p < 0.001$ ) indicates the baseline security rating when both independent variables are at zero. This analysis underscores the complex relationship between the extent and variety of service usage and users' security perceptions in online banking.

**Table 7.** Regression Analysis of Cryptocurrency Awareness and Perception on Willingness to Adopt Financial Technologies

Variable	Coefficient	Std. Error	t Value	P Value	95% Conf. Interval Lower	95% Conf. Interval Upper
Intercept	2.2461	0.2576	8.7187	5.51e-15	1.7370	2.7552
Crypto_Awareness	-0.3047	0.1357	-2.2456	0.0262	-0.5728	-0.0365
Perception	0.0195	0.0761	0.2567	0.7978	-0.1308	0.1699

Source: SPSS analysis

The regression analysis reveals that increased awareness of cryptocurrencies like Bitcoin slightly decreases the willingness to adopt new financial technologies such as blockchain, indicated by a negative coefficient (-0.3047) for Crypto Awareness. This effect is statistically significant, with a P-value of 0.0262, suggesting a meaningful relationship. However, the perception of using cryptocurrency for daily transactions shows a negligible influence on this willingness, evidenced by a very small positive coefficient (0.0195) and a high P-value (0.7978), indicating no significant impact. The baseline willingness level, represented by the Intercept (2.2461), is the expected willingness when both awareness and perception are at their lowest levels. Overall, cryptocurrency awareness has a modest but statistically significant effect on the adoption of new financial technologies.

**Table 8.** Multinomial Logistic Regression Analysis of Factors Influencing Beliefs about the Future of Traditional Banking in Bangladesh

Variable	Coefficient	Std. Error	t Value	P Value	95% Conf. Interval Lower	95% Conf. Interval Upper
const (Intercept)	-0.7833	0.8063	-0.9715	0.3313	-2.3637	0.7970
Security_Feeling	0.5079	0.1913	2.6551	0.0079	0.1329	0.8828
Preference_Digital_Banking	0.5549	0.5367	1.0339	0.3012	-0.4970	1.6070
Primary_Concerns	-0.3625	0.1669	-2.1725	0.0298	-0.6896	-0.0355

Source: SPSS analysis

The multinomial logistic regression analysis highlights significant relationships between respondents' feelings about digital payment systems and their beliefs about the future of traditional banking in Bangladesh. The intercept, at -0.7833 with a high p-value, serves as a baseline comparison for other categories, indicating that when all predictor variables are at their baseline levels, the log-odds of the reference outcome are negative. The positive coefficient (0.5079) for 'Security Feeling' with a significant p-value (0.0079) suggests that increased feelings of security positively influence the likelihood of participants believing in the replacement of traditional banking by digital systems. However, 'Preference for Digital Banking,' though positive in coefficient (0.5549), is not statistically significant (p-value: 0.3012), indicating less impact on the belief in digital banking replacing traditional banking. Conversely, 'Primary Concerns,' with a negative coefficient (-0.3625) and a significant p-value (0.0298), implies that as primary concerns (like security or privacy) increase, the likelihood of believing in the complete replacement of traditional banking decreases. This analysis underscores the importance of security perception and primary concerns in shaping beliefs about the future of digital banking in Bangladesh.

The sentiment analysis of responses regarding desired improvements in Bangladesh's payment systems reveals a mixture of neutral and slightly positive sentiments. A neutral sentiment score of 0.0 indicates that many of the replies, including those advocating for "cashless transactions" and "lower charge," are either factual assertions or recommendations devoid of strong emotional overtones. With a comparatively higher positive sentiment score (0.375), which indicates a more upbeat or positive opinion, the remark asking for a "User Friendly transaction system develop" stands out.

**Table 9.** Sentiment Analysis of Responses on Payment System Improvements in Bangladesh.

Gender	Education Level	Response	Sentiment Score
Male	Bachelor's Degree	Cashless transaction	0.000
Female	Bachelor's Degree	User Friendly transaction system develop	0.375
Male	Master's Degree or Higher	Maintain the Security	0.000
Male	Bachelor's Degree	Charge is very high to send money	0.208
Female	Bachelor's Degree	lower charge	0.000

Source: SPSS analysis

Similarly, the comment about high charges for sending money ("Charge is very high to send money") exhibits a mildly positive sentiment (0.208), possibly indicating an underlying hope or expectation for change. Overall, while most responses lean towards a neutral sentiment, indicating straightforward suggestions or observations, there are hints of positive outlooks suggesting that respondents see room for significant improvements and may hold optimistic views about the potential for these changes to be realized in the payment systems.

## 5. FINDINGS

The study showed a comprehensive analysis of various factors influencing the adoption and perception of financial technologies, particularly focusing on online banking services and cryptocurrencies in Bangladesh. The analysis incorporated diverse methodologies, including descriptive statistics, correlation analysis, regression models, and sentiment analysis, to provide a holistic understanding of user behaviors and perceptions.

- The demographic profile of respondents (Table 1) revealed a predominantly young adult population (76% aged 25-34), with a slight male predominance (64%). This demographic distribution is crucial as it represents a tech-savvy segment likely to be more receptive to new financial technologies.
- In terms of online banking services (Table 2), the moderate security perception (mean = 3.44) suggests that while users generally trust these services, there is room for improvement. High usage rates (mean = 0.88) indicate widespread acceptance, but the diverse range of services used (mean = 1.91) points to varying user preferences and needs.
- The correlation analysis (Table 3) provided intriguing insights. The negative correlation between security ratings and usage (-0.355) implies a possible gap between perceived security and actual usage habits. Interestingly, a higher diversity of services used correlates positively with

security ratings (0.554), suggesting that users who explore various services feel more confident about their security.

- The regression analysis (Table 4 and Table 5) highlighted the predictive power of service usage and diversity on security perceptions. The significant R Square (0.330) and F-statistic (36.283,  $p < .001$ ) validate the model's efficacy. It indicates that as users diversify their online banking activities, their perception of security improves, even though increased usage alone might slightly decrease the security perception.
- The regression analysis focusing on cryptocurrency awareness (Table 7) offered a unique perspective. While increased awareness of cryptocurrencies negatively impacts the willingness to adopt new financial technologies (-0.3047,  $p = 0.0262$ ), the perception of cryptocurrencies holds a negligible influence (0.0195,  $p = 0.7978$ ). This suggests that while awareness of cryptocurrencies like Bitcoin is spreading, it does not necessarily translate to a willingness to embrace such technologies.
- The multinomial logistic regression analysis (Table 8) sheds light on the future of traditional banking. The positive coefficient for 'Security Feeling' (0.5079,  $p = 0.0079$ ) indicates that heightened security perceptions could foster beliefs in digital banking replacing traditional methods. However, 'Primary Concerns' (-0.3625,  $p = 0.0298$ ) shows an inverse relationship, implying apprehension about the complete replacement of traditional banking systems by digital alternatives (Lerner, 2022).
- The sentiment analysis on payment systems in Bangladesh revealed a primarily neutral sentiment among respondents, with instances of mildly positive outlooks. Responses such as "cashless transactions" and "lower charge" showed neutral sentiments, indicating straightforward suggestions or observations without strong emotional undertones (Corea et al., 2021). However, some responses like "User Friendly transaction system development" exhibited slightly positive sentiments, reflecting optimism and favorable attitudes towards improvements in the payment systems. This analysis suggests that while users are pragmatic and factual in their suggestions, there is an underlying positive expectation for the development and enhancement of payment systems in Bangladesh (Bonaventura et al., 2020).

## 6. RECOMMENDATIONS

The analysis provided some helpful ideas to make banking online safe, transparent, and secure, encouraging more people to use digital money and influencing how standard banks may change in Bangladesh. A few suggestions involved making banking through computers and smartphones to make it accessible, user friendly, and affordable. Additionally, there was significant interest in currencies like bitcoin

### 6.1 Online Banking Services

- *Enhancing Security Perceptions:* Despite moderate security perceptions, the negative correlation between security ratings and usage indicates a gap in user trust. Banks should invest in robust security measures and

communicate these effectively to users. Engaging in transparent communication about security protocols can alleviate user concerns and potentially increase usage (Rahman et al., 2018).

- *Diversifying Online Banking Services:* The positive correlation between service diversity and security ratings suggests that offering a broader range of services could improve user perception of security. Banks should consider expanding their online service offerings to cater to a more diverse set of customer needs, thus enhancing user engagement and satisfaction (Ahmed et al., 2012).
- *Targeting the Youth Demographic:* The 25–34 age group accounts for a significant portion of user population, thus banks should target this group with their marketing and service design. To interact with this tech savvy audience, this can include creating more inventive, user friendly interfaces and making advantage of digital marketing channels (Julia & Kassim, 2020).

### 6.2 Cryptocurrency Awareness and Adoption

- *Educational Initiatives:* The willingness to use financial tech dipped slightly as crypto awareness rose. This hints that we need wide reaching educational initiatives. These programs should clarify cryptocurrencies and blockchain, showing possible upsides and tackling myths (Morkunas et al., 2019).
- *Regulatory Frameworks:* To build trust, we need to have strong regulations so people feel safe in using cryptocurrencies legally. Weking et al. (2020) say regulating these new technologies is vital to ease worries about the risks. Solid frameworks assure people that transactions through digital currency will be secured.

### 6.3 Future of Traditional Banking

- *Balancing Digital and Traditional Banking:* The study presents a diverse perspective on replacing traditional banking with digital platforms. Banks may pursue a balanced approach, blending the convenience and innovations of online banking with the reliability and familiarity of conventional offerings. These entails addressing major concerns around security and privacy to establish user trust in digital banking (Steinmetz et al., 2021).
- *Addressing Security and Privacy Concerns:* Banks must prioritize security to build trust in digital banking, which is gradually replacing traditional methods with digital currencies like Bitcoin. Investing in encryption, fraud detection, and audits can bolster protections. This helps ease user worries over safety, a key factor in adoption (Tönnissen et al., 2020).

### 6.4 Payment System Improvements

- *User-Friendly Systems:* Sentiment analysis shows people want an easier, time-saving payment system. Banks should streamline their system to make their services more intuitive and usable for all people, not just a particular group of educated people. This means streamlining payment and giving assistance and guidelines so more people use the-m. Mahmud et al. (2021) say making apps easier to use is key to improving the experience.
- *Cost-Effective Solutions:* High transaction fees discourage customers and show the need for affordable



payment options. Banks could think about reducing these charges by using tech or streamlining workflows to draw in and keep users. A 2021 study by Rajnak & Puschmann stresses that this kind of move might ease worries and make banking more attractive.

## 7. LIMITATIONS

Despite the study's comprehensive scope and analysis, it encounters several limitations that should be acknowledged. A significant constraint is the time and cost involved in conducting such an extensive survey, which inherently limits the breadth of data that can be collected and analysed. Additionally, the survey respondents were mainly educated young people, particularly those with higher levels of training like bachelor's and Master's degrees. That means the information gleaned reflected the choice pattern of educated young people. It left out many others in the country who are uneducated and unfamiliar with online banking and new technologies like cryptocurrency. Also, not all the geographical areas or groups within the nation could participate because of limits in the study. Different views and experiences from geographical locations should have been taken into account. These limitations show that the study needs to expand and cover people from all geographical areas, especially remote areas of Bangladesh. One approach could be to use technology to involve communities and people from all over the country to make it more representative of the diverse population that exists in Bangladesh.

## 8. CONCLUSION

This study wrapped up by exploring changes in Bangladesh's financial landscape, focusing on online banking, cryptocurrency awareness, and the shift to digital banking. The results reveal important details about who uses these services, their impression, and opinions. A young, educated group is increasingly turning to tech driven financial transaction systems. Links between security views, service use, and diversity in online banking offer helpful guidance for improving the user experience and trust. Interest in cryptocurrencies is measured but growing. However, more training and rules are still needed to encourage people to use digital currency. While thorough, the study admits limitations in who and what was looked at, so broader future study is still important. Overall, the study underscores how fast Bangladesh's financial sector is changing, and the big role technology will play in its future path, providing insights for banks and policymakers to catch up with these new trends with the actions.

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