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Exploring the Role of FinTech through Mobile Financial Services towards a Cashless Society in Bangladesh

Md Belal Uddin[1]

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Abstract

Purpose: The primary purpose of this study is to investigate the transformative impact of financial technology (FinTech), with a specific focus on Mobile Financial Services (MFS), on the progression towards a cashless society in Bangladesh. This research aims to analyze how MFS is reshaping financial transactions, enhancing financial inclusion, and driving socio-economic changes in the country.

Objectives: This article aims to achieve several key objectives: assessing the reach of Mobile Financial Services (MFS) among various demographic groups, and pinpointing the main factors that drive the adoption and sustained use of MFS. Additionally, it seeks to understand how MFS grants access to financial services for unbanked and underbanked populations. It also evaluates the extent to which MFS diminishes the reliance on cash for everyday transactions and identifies the obstacles and challenges to realizing a completely cashless society through MFS.

Method: This study employs a quantitative research approach, gathering data through questionnaires and conducting a survey with 106 participants, comprising both younger and middle-aged individuals. The objective was to gain insights into the factors that influence their adoption of various cashless payment methods. The Friedman test and Kendall's W test were executed to justify the hypothesis.

Result: This article effectively demonstrates the positive impact on economic growth through simplified transactions that require minimal technological expertise, reduced costs associated with handling cash, and convenient and secure transaction processes. It also highlights how these factors contribute to greater financial inclusion, paving the way for a cashless society.

JEL Classification: E50, E59, G20, G28, M15

Keywords: Mobile Financial Services, Digital Payment, Financial Inclusion, Cashless Society, Bangladesh Economy.

[1]Associate Professor, Dept. of Economics, Begum Rokeya University, Rangpur, Bangladesh, e-mail: belal.eco@brur.ac.bd

1. Introduction:

It could be argued that the financial industry has consistently been at the forefront of embracing and extensively utilizing technology. The fusion of finance and technology has acted as a catalyst for the process of globalization (Arner et al., 2016; Milian et al., 2019; Warf, 1989). Among various representations, 'FinTech' seems to be the most widely recognized and effectively emphasizes the fusion of finance and technology, more so than 'fintech' or 'Fintech'. The Financial Stability Board describes FinTech as 'innovation in financial services facilitated by technology (Andresen, 2017: 1). Arner et al. (2016: 22) refer to FinTech is defined as 'utilizing technology to provide financial solutions.' They identify three phases of FinTech evolution. The first era, known as analog finance, commenced with the transatlantic telegraph in the 1860s. The second era, initiated in the 1960s with the advent of the first computers, automated teller machines, and electronic payment systems, marked a gradual transition toward digital finance.

The swift evolution of technology has significantly transformed financial service providers on a global scale, reshaping their approach to delivering a wide array of financial services aimed at improving economic conditions. These providers now can modify their business models and introduce new income streams and opportunities for value creation that originate beyond the traditional financial system. This transformation is a result of the rapid progress in digital technology, notably in the utilization of online platforms and the subsequent emergence of Mobile Financial Services, often referred to as MFS (Makina, 2019). In addition to the services offered by mobile wallets, payment apps, the cloud, analytics, artificial intelligence, cryptography, crowdfunding, and many other forms are now available that modernize and facilitate financial services to draw the unbanked as bankable clients as a means of reducing financial exclusion and producing an inclusive economic growth (Casanova et al., 2018; Makina, 2019; Pramanik et al., 2019). Customers can thus access affordable methods of managing their financial activities, including spending, borrowing, saving, investing, and safeguarding their financial security through insurance, which is referred to as sustainable finance or financial inclusion and is one of the key principles of the World Bank (Arner et al., 2020; Patwardhan, 2018).

The Bangladesh Bank has increased the limit for PIN-less transactions to five thousand takas (TBS Report, 2023). With over 170 million mobile phones and 112 million internet subscribers, Mobile Financial Services (MFS) have become popular. MFS transactions totaled Tk 67,967 crore in November 2021, with a 132% increase in government payments usage. (Van Hoeck, 2021).

Bangladesh has been marching forward very fast, riding on its robust economic growth, expected to be 6.9 percent in FY22 and 7.1 percent in 2023. Among other initiatives, this growth has been due to the far-sighted vision of the government's "Digital Bangladesh" initiative. Digital transformation and the resulting innovations have spurred growth in different sectors, opening new

horizons to be explored. It will have an exponential impact if more people are encouraged to adopt contactless payments and digital transactions. The "National Digital Payments Roadmap 2022-2025" states that digital payments could boost Bangladesh's annual gross domestic product (GDP) by 1.7 percent, adding $6.2 billion to the economy annually (Soumya Basu, 2022).

2. Research purpose and questions:

The study aims to investigate the potential for mobile financial transactions (MFS) to lead Bangladesh toward a cashless economy, while also examining the recent growth trends in cashless transactions.

Specific questions are

RQ-1: What are the current adoption rates and usage patterns of mobile financial services in different demographic groups and regions?

RQ-2: What factors influence individuals to adopt and use mobile financial services for their day-to-day transactions?

RQ-3: To what extent have mobile financial services contributed to improving financial inclusion in Bangladesh?

RQ-4: What are the key regulatory challenges and opportunities in facilitating a cashless economy?

RQ-5: How can sustainable practices be integrated into the mobile financial services ecosystem?

3. Literature Review:

Milestones for a Global Cashless Economy have passed comments on the cashless economy, “There was no consensus on the exact form this paperless, chequeless, cashless society should adopt. Yet ever since then bankers, consultants, journalists, regulators and even philanthropists (such as Bill Gates) have dreamed about digital solutions displacing all forms of paper, including and especially banknotes” (Bernardo Batiz-Lazo & Leonidas Efthymiou, 2016).

The banking industry has experienced significant change as a result of the rapid advancement in information and communication technology. Integrating various information technologies has improved the services provided by financial institutions, especially banks. Not just in developed countries but also in Bangladesh, mobile phones have become a widely accepted and used technology. It is currently evident in Bangladesh that the conventional model of branch banking is on the decline, mainly because of the rise in mobile banking facilities (Arner et al., 2020; Patwardhan, 2018).

By removing barriers to accessing a wide range of financial products and services for the entire population, financial inclusion in this digital age catalyzes the fulfillment of all the Sustainable Development Goals of the United Nations (UN SDGs). By ensuring that necessary formal financial services may be obtained at a reasonable cost with the aid of technological advancements, digital finance has emerged as a major alternative to improve the stability of the financial system and to reduce the inclusion gap (Kandpal & Mehrotra, 2019). To put it briefly, 'FinTech,' or similar financial technologies, has expanded in acceptance across the globe since 2014 (Lai & Samers, 2020).

"According to Arner et al. (2016), the year 2008 marked the beginning of the present era in FinTech, characterized by a shift in who offers financial services and the speed of innovation. In the past, technology was primarily used by financial institutions to support service delivery, but now startups and established technology companies also provide these services (Brummer and Yadav, 2018). The development of FinTech since 2008 can be attributed to factors in both the financial and technological realms. The financial crisis of that time disrupted the financial sector and damaged the reputation of banks. Simultaneously, the rise of smartphones and application programming interfaces (APIs), enabling computer applications to communicate over networks, opened up new avenues for financial innovation. Additionally, 2008 saw the introduction of Bitcoin, the pioneering application of blockchain (Fernandez-Vazquez et al., 2019; Lansiti and Lakhani, 2017). The persistently low interest rates since 2008 have further fueled the investment surge in FinTech (Dermine, 2017).

Additionally, compared to their non-bank peers, institutions run by banks enjoy competitive advantages in terms of resources and operational advantages (David-West et al., 2018; Sapovadia, 2018). In recent times, the central bank of Bangladesh, Bangladesh Bank (BB), has introduced numerous initiatives, particularly targeting the impoverished, marginalized, and specifically disadvantaged communities. These initiatives aim to facilitate their inclusion in the formal financial system through significant avenues like agent banking, mobile financial services (MFS), digital financial services, as well as traditional branch banking (Bangladesh Bank, 2020). Bangladesh Bank has released a preliminary guideline specifically for Mobile Financial Services (MFS) and has authorized 28 banks to offer mobile finance services within a bank-led framework.

FinTech holds considerable importance for several key reasons. To begin with, its growth was exceptionally swift throughout the 2010s, with global venture capital investment in FinTech surging from approximately US$1.8 billion in 2010 to US$56 billion in 2018, as reported (Accenture in 2019). Furthermore in second, FinTech is actively encouraged by both governments and private entities in significant international financial centers (IFCs) as a means to seize fresh market opportunities and cultivate new capacities that would enhance their status as IFCs. Thirdly, FinTech seems to 'disrupt' (or at least reshape) established financial institutions and market sectors by offering the potential for reduced expenses, enhanced efficiency, increased convenience, and personalized product offerings that align more closely with customer profiles and requirements. Fourthly, FinTech

carries substantial implications for restructuring global production and financial networks, as well as influencing the concept of 'development' in less affluent nations (Gomber et al., 2017).

The discussion on "Cashless Transaction: Modes, Advantages, and Disadvantages" suggests that transitioning to a cashless transaction economy doesn't imply a scarcity of physical cash; instead, it signifies a shift towards people conducting transactions digitally. In a contemporary economy, funds are transferred electronically. Consequently, to attain this objective, it's essential to promote the adoption of digital payment practices and enhance the infrastructure to support this shift (Ramya N. and D Sivasakhti, 2017).

The digital economy in Bangladesh heavily depends on electronic fund transfer services such as BKash and Rocket. However, for a complete modernization, the transition to a cashless society is imperative. The government should actively promote digital payment methods like e-wallets and mobile banking to enhance efficiency, transparency, and financial inclusion. This initiative will also have a positive impact on disadvantaged groups and enable the formulation of more effective economic policies (BBF Digital, 2022). Bangladesh Bank Governor Abdur Rauf Talukdar said that efforts will be made so that 75% of the country's transactions go cashless within the next four years. A reliance on cash in the economy can give rise to issues such as corruption, tax evasion, money laundering, and extortion (Naser Ezaz Bijoy, 2023).

The financial technology (FinTech) sector in Bangladesh has experienced substantial growth and transformation in recent years, revolutionizing the way financial services are delivered and accessed. While still emerging, FinTech in Bangladesh is showing great promise, with numerous startups and established financial institutions embracing technology to provide innovative solutions to a largely unbanked or under-banked population (Ahmed, 2019).

Furthermore, the emergence of digital payment gateways, peer-to-peer lending platforms, and online insurance providers is reshaping the financial landscape. These innovations are enhancing access to credit, simplifying payment processes, and promoting financial literacy among the population.

Mobile Financial Services (MFS) have witnessed significant growth and transformation in Bangladesh, playing a pivotal role in advancing financial inclusion and moving the country toward a cashless economy. The success of MFS in Bangladesh can be attributed to several factors, including widespread mobile phone penetration, a large unbanked population, and government support. Regulatory bodies like the Bangladesh Bank have also played a crucial role in fostering a conducive environment for MFS growth by establishing clear guidelines and ensuring security and consumer protection (Rubaiyat, 2020).

Bangladesh benefits from having a significant youth demographic and exceptionally widespread mobile subscription coverage. When these two factors are synergized, FinTech has the potential to play a pivotal role in stimulating macroeconomic growth. Nevertheless, the presence of a well-structured regulatory authority is essential to facilitate this growth.

FinTech has the potential to create financial markets at the grassroots level, benefiting rural communities such as farmers and fishermen who often face challenges in securing fair prices for their products, ultimately leading to an enhancement in their living standards. With these considerations, the government of Bangladesh has already established a timeline spanning from 2019 to 2024 for the development of its inaugural National Financial Inclusion Strategy (NFIS) in alignment with the government's Vision 2021 (Islam, 2019).

Keeping this in consideration, a collaboration was established in partnership with UNDP to facilitate access to information, aiming to support the digital advancement of Bangladesh. Additionally, their agenda encompasses the promotion of financial inclusion through the utilization of FinTech ("a2i", 2020). Currently, FinTech companies that are performing well in Bangladesh included:

Sl No.	**Name of the MFS Service**
1.	bKash
2.	ROCKET
3.	Nagad
4.	MYCash
5.	mCash
6.	Trust Axiata Pay (tap)
Sl No.	**Name of the MFS Service**
7.	FirstCash
8.	উপায় (Upay)
9.	OK Wallet
10.	Rupali Bank
11.	TeleCash
12.	Islamic Wallet
13.	Meghna Pay

Table: Present FinTech Companies in Bangladesh

Out of the entire market share, the leading four Mobile Financial Services (MFS) providers, namely bKash, Nagad, Rocket, and SureCash, collectively account for 95.36 percent of account holders, 70.52 percent of MFS agents, 99.35 percent of the average daily transactions, and 99.85 percent of monthly cash-out transactions (The Business Post-2022).

4. Research methods and plan:

4.1.Sampling and data collection:

After careful consideration, we designed questionnaires and surveyed 106 participants, both younger and middle-aged, to understand the factors driving their adoption of cashless payment methods. To specifically explore the perspectives of younger individuals, surveys were conducted among students and educators from public and private universities outside Dhaka. Data was collected through an online self-administered questionnaire distributed to all university students and faculty members. Ethical protocols required informed consent from participants, ensuring voluntary and anonymous participation for academic purposes.

The questionnaire had two sections: Section 1 gathered demographic information, while Section 2 assessed factors influencing the adoption of cashless payment systems.

4.2.Sample profile:

The majority of respondents were aged between 20 and 30 years, which is similar to the Bangladesh youth population of 34% (World Population Review 2023).

Out of the 106 participants, around 58.5% hold a bachelor's degree, while approximately 34% possess a Master's degree. Additionally, approximately 52% of participants or their parents report a monthly income before interest and tax in the range of 20,000 to 30,000. Participants primarily utilized their mobile applications for ordering restaurant meals, with take-away meals being the second most common use. This was followed by activities such as grocery shopping, buying electronic products, settling bills, and making purchases of food and beverages in food markets.

4.3.Instrument design and measurements:

We have designed a structured questionnaire for data collection, where respondents convey their opinions using the Likert scale, employing varying labels for different questions.

Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
1	2	3	4	5

The survey instruments for both independent and dependent variables were assessed using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

4.4.The Analysis Tool:

Various statistical tools were utilized to analyze the collected data, including the Friedman test and Kendall's W test to test the hypothesis.

The Friedman test, used for comparing more than two related groups or repeated measures, identifies differences in distributions, particularly when parametric test assumptions are unmet. It determines if there are significant differences across the distributions of three or more related groups. Conversely, Kendall's W, or Kendall's coefficient of concordance, measures the degree of agreement among raters or rankings, assessing the consistency of multiple raters' rankings of a set of items.

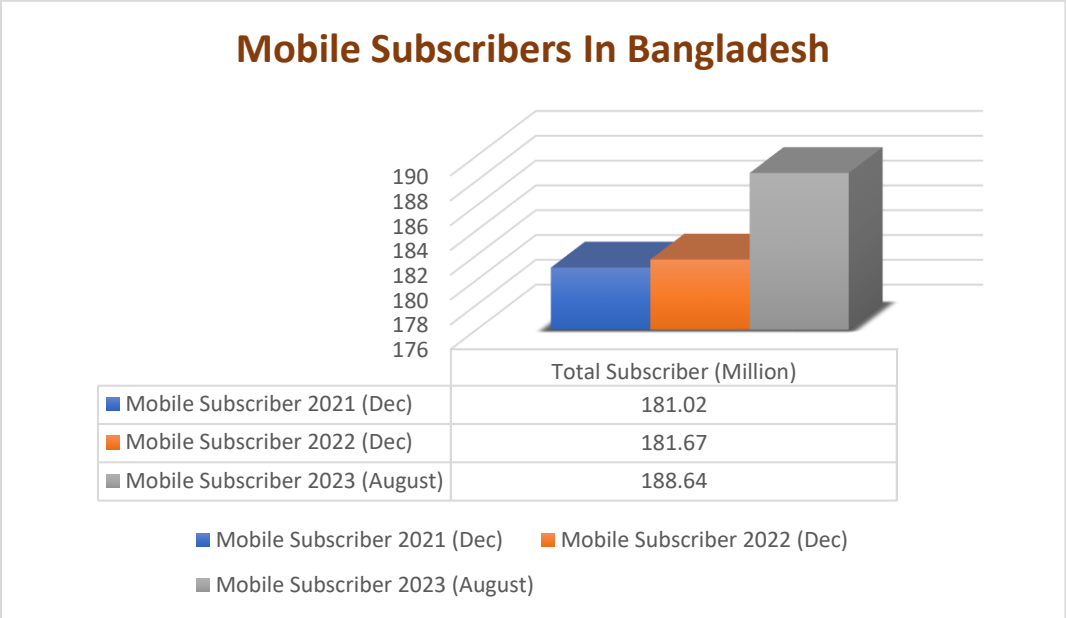
For the Friedman test, the test statistic is compared to the chi-square distribution to obtain the p-value. A p-value below the significance level (e.g., 0.05) leads to rejecting the null hypothesis, indicating significant group differences. A significant and high Kendall's W value indicates strong agreement among raters, while a non-significant or low value suggests little to no agreement.

5. Statistics of MFS:

5.1. Number of mobile subscribers:

Bangladesh boasts a robust and rapidly growing mobile subscriber base, reflecting the country's increasing connectivity and digitalization. As to the statistics shown in the following table update in December 2021, Bangladesh had over 180 million mobile subscribers, making it one of the most densely populated mobile markets in the world.

Figure 1: Mobile Subscribers in Bangladesh



Source: Bangladesh Telecommunication Regulatory Commission (BTRC) (http://www.btrc.gov.bd/site/page/0ae188ae-146e-465c-8ed8-d76b7947b5dd/-)

The growth of mobile subscribers in Bangladesh can be attributed to several factors, including fierce competition among mobile network operators, affordable mobile devices, and

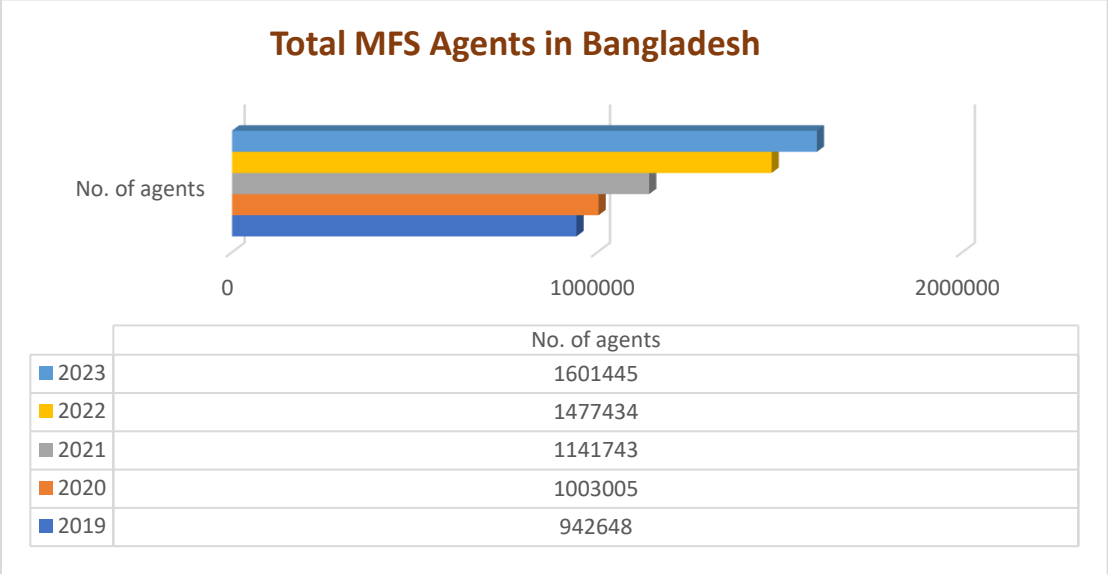
extensive network coverage, even in remote areas. Mobile phones have become an essential part of daily life, serving not only as communication tools but also as gateways to financial services, the internet, and digital information. In the above table, in the last 3 years, there is an extensive upward slope of new users of mobile phones.

5.2.MFS Agents in Bangladesh:

Mobile Financial Services (MFS) agents in Bangladesh play a pivotal role in bridging the gap between traditional banking and underserved populations, especially in rural and remote areas. These agents serve as the face of MFS providers, facilitating various financial transactions for customers who may not have easy access to traditional banking systems.

MFS agents are typically local entrepreneurs or shopkeepers who have partnered with mobile financial services providers like bKash, Nagad, Rocket, and SureCash. They offer a range of services, including cash deposits, withdrawals, fund transfers, and bill payments, using their mobile phones and Point of Sale (PoS) devices.

Figure 2: Total MFS Agents in Bangladesh



	No. of agents
2023	1601445
2022	1477434
2021	1141743
2020	1003005
2019	942648

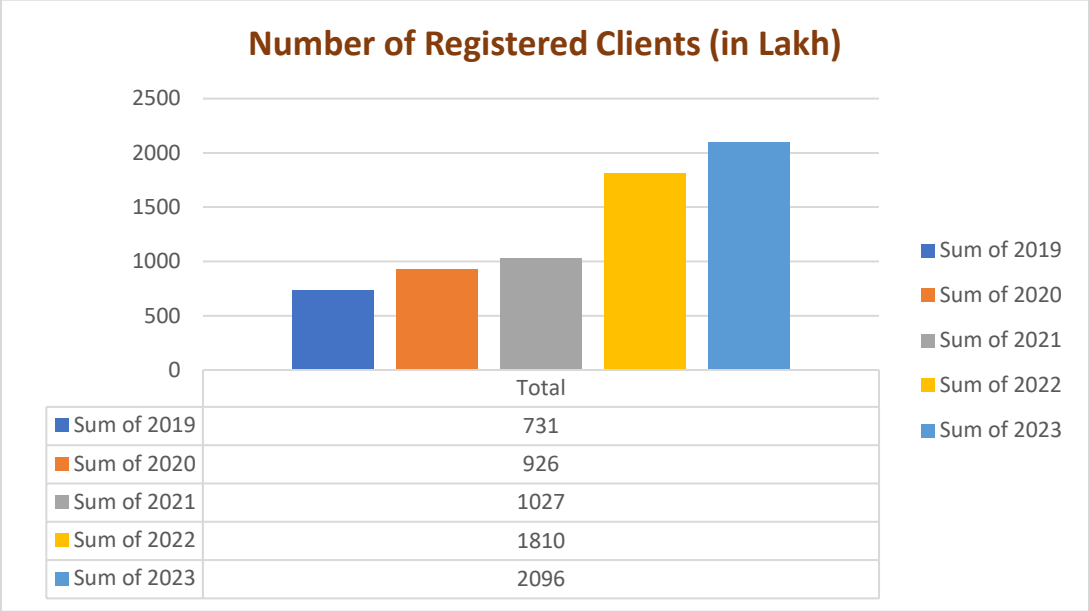
Source: Bangladesh Bank
(https://www.bb.org.bd/en/index.php/financialactivity/mfsdata)

5.3.Number of Registered MFS clients in Bangladesh:

Since September 2021, Bangladesh had a significant number of registered Mobile Financial Services (MFS) clients, with millions of individuals using MFS platforms like bKash, Nagad, Rocket, and SureCash.

The exact number of registered MFS clients may have continued to grow since then, given the country's dynamic and expanding mobile financial services sector. The convenience and accessibility of MFS have made it a popular choice among diverse segments of the population in Bangladesh.

Figure 3: Number of Registered Clients (in Lakh)



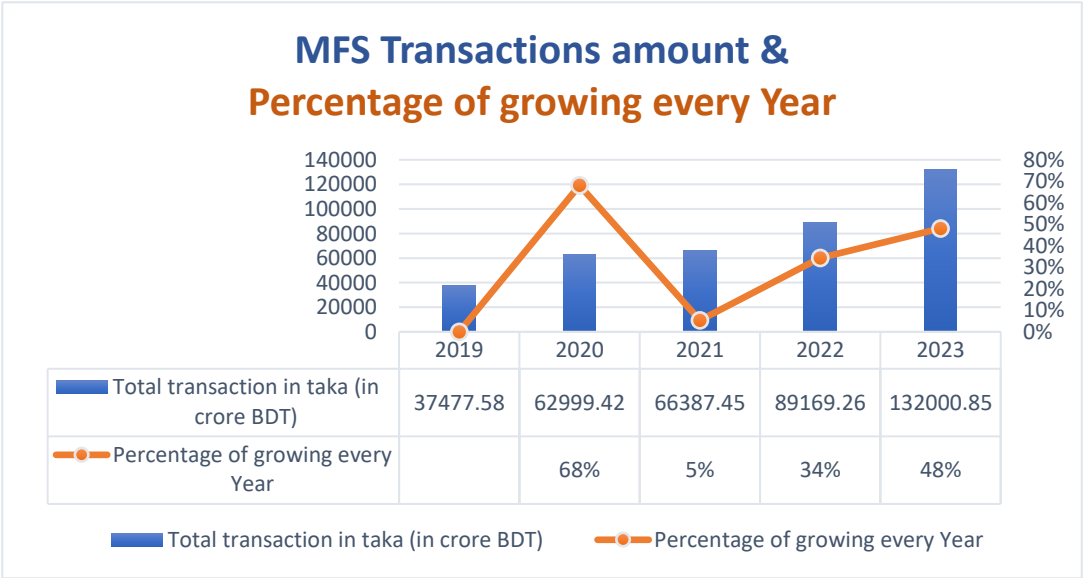
	Total
Sum of 2019	731
Sum of 2020	926
Sum of 2021	1027
Sum of 2022	1810
Sum of 2023	2096

Source: Bangladesh Bank (https://www.bb.org.bd/en/index.php/financialactivity/mfsdata)

5.4. Transactions amount through MFS in Bangladesh:

Mobile Financial Services (MFS) transactions in Bangladeshi Taka (BDT) have constituted a substantial portion of the country's financial landscape. The following table demonstrates that there has been substantial growth in Mobile Financial Services (MFS) transactions in every year except for 2021. As of June 2023, a total of 1.32 lakh crore BDT has been transacted through MFS, reflecting a 48% increase compared to the previous year in Bangladesh.

Figure 4: Growing Percentage of MFS in Every Year



	2019	2020	2021	2022	2023
Total transaction in taka (in crore BDT)	37477.58	62999.42	66387.45	89169.26	132000.85
Percentage of growing every Year		68%	5%	34%	48%

Source: Bangladesh Bank (https://www.bb.org.bd/en/index.php/financialactivity/mfsdata)

Data from the central bank reveals that there was a remarkable surge in transactions in June, with a record high of Tk 1.32 lakh crore being transacted through services like bKash and Rocket. This milestone signifies the fourth consecutive month in which transactions have surpassed Tk 1 lakh crore. In June, transactions witnessed a notable rise, with an increase of around Tk 24,000 crore compared to the preceding month. According to experts within the industry, when Mobile Financial Services (MFS) were first introduced, customers exhibited a degree of hesitancy regarding the service's characteristics (The Business Insider-2023).

6. Research hypothesis:

H_0: There are no significant prospects of Mobile Financial Services (MFS) through a cashless economy to the general public in the context of Bangladesh.

H_1: There are significant prospects for Mobile Financial Services (MFS) through a cashless economy to the general public in the context of Bangladesh.

7. Result and Discussion:

7.1. Reliability test:

Reliability testing in SPSS assesses the consistency and stability of data. Common methods include Cronbach's Alpha for assessing internal consistency and test-retest analysis for temporal stability. These tests help ensure that the data and research instruments are reliable and can be trusted for accurate analysis and interpretation (LJ Cronbach, 1947).

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.874	.851	33

High Cronbach's alpha values indeed suggest that the responses provided by participants to a set of questions are consistent and that the items in the scale or questionnaire are closely related. The reliability which is higher than 0.9 is regarded as excellent, higher than 0.8 is fine, higher than 0.7 is adequate, higher than 0.6 is doubtful, and lower than 0.5 is substandard (Lin L, Huang Z, Othman B, Luo Y 2020).

8. Hypothesis Testing:

Impact of Financial transaction to Become Cashless Economy:

The shift to a cashless economy through increased digital financial transactions brings efficiency, transparency, and financial inclusion. It reduces costs, enhances tax compliance, and offers security and convenience. The shift towards a cashless economy, driven by increased financial transactions through digital means, can have several significant impacts:

8.1.Economic Growth:

A cashless economy can stimulate economic growth by increasing the velocity of money circulation, boosting consumer spending, and attracting investments in the financial technology sector. The primary focus of this research is to substantiate the notion that Mobile Financial Services (MFS) are experiencing significant growth in Bangladesh, potentially leading to the country's transition into a cashless economy.

H_0: There is a significant relationship between Economic Growth and easier transactions through MFS

H_1: There is no significant relationship between Economic Growth and easier transaction through MFS

Total N	106
Kendall's W	.015
Test Statistic	1.588
Degrees of Freedom	1
Asymptotic Sig. (2-sided test)	.208

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distributions of The economic growth of the country has increased due to the effect of cashless economy in the country and in cashless economy, transactions can be done in an easier way; is it a reason for financial growth to increase? are the same.	Related-Samples Friedman's Two-Way Analysis of Variance by Ranks	.208	Retain the null hypothesis.
2	The distributions of The economic growth of the country has increased due to the effect of cashless economy in the country and in cashless economy, transactions can be done in an easier way; is it a reason for financial growth to increase? are the same.	Related-Samples Kendall's Coefficient of Concordance	.208	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Table 2: Hypothesis test result of Friedman's Analysis of Variance

That means we can conclude that mobile banking is rapidly increasing and we can safely assume that Mobile Financial Services (MFS) are experiencing significant growth to become a cashless economy. So, we can accept the Null Hypothesis.

8.2.Required less technological knowledge and prospects of growth:

Requiring less technological knowledge can broaden the prospects of growth in Mobile Financial Services (MFS). Simplified user interfaces and accessible training can empower a wider demographic, including those with limited tech skills. This simplicity makes it more feasible to create an inclusive economy through MFS, ensuring that a broader range of people can participate.

H_0: There is a significant relationship between requiring less technological knowledge and the growth of MFS

H_1: There is no significant relationship between requiring less technological knowledge and the growth of MFS

Total N	106
Test Statistic	2.000
Degrees of Freedom	1
Asymptotic Sig. (2-sided test)	.157

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distributions of It does not require excellent technological knowledge and The economic growth of the country has increased due to the effect of cashless economy in the country are the same.	Related-Samples Friedman's Two-Way Analysis of Variance by Ranks	.157	Retain the null hypothesis.
2	The distributions of It does not require excellent technological knowledge and The economic growth of the country has increased due to the effect of cashless economy in the country are the same.	Related-Samples Kendall's Coefficient of Concordance	.157	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Table 3: Hypothesis test result of Friedman's Analysis of Variance

This suggests that we can draw the conclusion that the adoption of mobile financial services is on a swift rise. It's reasonable to infer that Mobile Financial Services (MFS) are indeed undergoing substantial growth, largely because they demand less advanced technological knowledge. So, we accept the Null Hypothesis.

8.3.Transaction cost of MFS and economic growth:

Managing physical cash involves expenses for printing, transporting, and securing money. A cashless economy can reduce these costs. The lower transaction costs associated with Mobile Financial Services (MFS) can stimulate economic growth.

H_0: There is a significant relationship between the lower Transaction cost of MFS and economic growth.

H_1: There is no significant relationship between the lower Transaction cost of MFS and economic growth.

Total N	106
Test Statistic	1.110
Degrees of Freedom	1
Asymptotic Sig. (2-sided test)	.292

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distributions of It reduces transaction cost and The economic growth of the country has increased due to the effect of cashless economy in the country are the same.	Related-Samples Friedman's Two-Way Analysis of Variance by Ranks	.292	Retain the null hypothesis.
2	The distributions of It reduces transaction cost and The economic growth of the country has increased due to the effect of cashless economy in the country are the same.	Related-Samples Kendall's Coefficient of Concordance	.292	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Table 4: Hypothesis test result of Friedman's Analysis of Variance

This indicates that we can reasonably conclude that the uptake of mobile financial services is rapidly increasing. It's a valid inference that Mobile Financial Services (MFS) are experiencing significant growth, primarily due to their lower transaction costs compared to traditional banking systems. So, we accept the Null Hypothesis.

8.4.The efficiency of opening MFS account and transactions:

Digital transactions are often faster and more efficient than traditional cash-based methods, reducing transaction times and enhancing overall economic efficiency.

H_0: There is a significant relationship between the less time to open MFS accounts and the increase in the number of transactions.

H_1: There is no significant relationship between the less time to open MFS accounts and the increase in the number of transactions.

Total N	106
Test Statistic	2.951
Degrees of Freedom	1
Asymptotic Sig. (2-sided test)	.086

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distributions of It takes few minutes to open and make transactions and Any time Any transaction are the same.	Related-Samples Friedman's Two-Way Analysis of Variance by Ranks	.086	Retain the null hypothesis.
2	The distributions of It takes few minutes to open and make transactions and Any time Any transaction are the same.	Related-Samples Kendall's Coefficient of Concordance	.086	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Table 5: Hypothesis test result of Friedman's Analysis of Variance

These findings support a reasonable conclusion that the simplicity of creating accounts plays a pivotal role in driving the rapid expansion of Mobile Financial Services (MFS). It's a valid deduction that MFS is indeed undergoing substantial growth, primarily because of its user-friendly account registration processes compared to traditional banking systems. Consequently, we accept the Null Hypothesis.

8.5.Financial Inclusion through MFS to ensure a cashless economy:

Cashless options can extend financial services to underserved populations, as they don't require traditional bank accounts. Mobile financial services, for example, can provide access to banking for the unbanked.

H_0: There is a significant relationship between the financial transactions through MFS accounts and becoming a cashless economy.

H_1: There is no significant relationship between the financial transactions through MFS accounts and becoming a cashless economy.

Total N	106
Test Statistic	.671
Degrees of Freedom	1
Asymptotic Sig. (2-sided test)	.413

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distributions of significant impact of a cashless economy on the number of financial transactions statistically to enhance the country's economic condition and Due to the MFS transactions marginalized people will be included in the financial transactions and economic growth will be ensured. are the same.	Related-Samples Friedman's Two-Way Analysis of Variance by Ranks	.413	Retain the null hypothesis.
2	The distributions of significant impact of a cashless economy on the number of financial transactions statistically to enhance the country's economic condition and Due to the MFS transactions marginalized people will be included in the financial transactions and economic growth will be ensured. are the same.	Related-Samples Kendall's Coefficient of Concordance	.413	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Table 6: Hypothesis test result of Friedman's Analysis of Variance

In Bangladesh, achieving financial inclusion through Mobile Financial Services (MFS) is pivotal for transitioning to a cashless economy. MFS empowers the unbanked and underbanked, offering them access to digital financial solutions. This result reasonably affirms the conclusion

that the surge in financial transactions is attributable to the widespread acceptance and popularity of Mobile Financial Services (MFS), driving the nation toward a cashless economy. Hence, we validate the Null Hypothesis.

9. Practical Contributions:

The introduction of Mobile Financial Services (MFS) in Bangladesh has been crucial in propelling the nation towards a cashless economy. Providers like bKash and Rocket have significantly transformed financial transaction processes within the country.

This article demonstrates that MFS has broadened access to financial services for previously unbanked or underbanked populations, particularly in rural areas, empowering more people to engage with the formal economy.

MFS provides a convenient and secure method for sending and receiving money, paying bills, and making purchases via mobile phones, reducing reliance on physical cash and its associated risks. Additionally, the growth of e-commerce platforms is closely tied to MFS, enabling easy online transactions that drive the digital economy, benefiting both consumers and businesses by expanding their market reach.

The Government of Bangladesh has acknowledged the potential of MFS, integrating it into various governance aspects, such as subsidy distribution, government payments, and tax collection. This integration promotes transparency, minimizes leakage in social welfare programs, and encourages the adoption of digital payments among citizens.

Overall, the practical contributions of MFS in Bangladesh have not only reduced the reliance on physical cash but have also spurred economic growth, financial inclusion, and improved access to financial services. These developments are crucial steps towards a more cashless economy, with benefits for individuals, businesses, and the country's overall financial stability. The convenience, accessibility, and security offered by MFS have paved the way for a digital financial revolution in Bangladesh, and the ongoing expansion of these services holds great promise for the nation's financial future.

10. Implications for future research:

The rapid expansion of Mobile Financial Services (MFS) in Bangladesh and their role in steering the country towards a cashless economy have several key implications for future research. These insights are crucial for policymakers, researchers, and businesses aiming to comprehend, support, and optimize this transition.

Future research should investigate the adoption and usage patterns of MFS in Bangladesh, examining who uses these services, the frequency of use, and the types of transactions conducted. Such studies can help tailor services and incentives for specific user groups and identify adoption barriers among certain demographics.

Additionally, research should explore the long-term effects of MFS on financial inclusion in Bangladesh. Key questions include whether MFS has genuinely reached the unbanked and

underbanked populations and if it has improved their financial well-being. Investigating the role of MFS in enhancing women's financial inclusion and empowerment is also vital, as it can help bridge gender-based financial disparities.

The shift to a cashless economy carries significant economic and social implications. Researchers should analyze how MFS influences economic growth, job creation, and poverty reduction. They should also examine the social impacts, such as changes in social behavior, trust, and community dynamics resulting from decreased reliance on physical cash.

Bangladesh's regulatory and policy frameworks for MFS may need continuous adjustments. Future research can assess the effectiveness of these frameworks and suggest improvements to ensure a secure and inclusive financial ecosystem.

11. Limitation of the study:

Like in any typical research endeavor, this study is not exempt from limitations. However, it's important to note that these limitations can serve as guiding pointers for prospective research initiatives.

To begin with, a limitation arises from the fact that the empirical data were gathered exclusively from two districts, namely Rangpur and Khulna in Bangladesh. However, it is imperative to conduct additional research in various emerging districts of Bangladesh to verify and substantiate the findings of this study. Moreover, obtaining reliable and extensive data in Bangladesh poses a considerable challenge, impeding the ability to conduct in-depth research. Numerous transactions within the informal sector remain unregistered, thereby obstructing a comprehensive assessment of the MFS environment.

The regulatory environment in Bangladesh is evolving. Frequent changes in regulations can impact the MFS ecosystem and the findings of research studies. In this study, we collected responses from 106 young minds who are real users of technologies where Conducting surveys or interviews in remote or underprivileged areas can be challenging.

12. Conclusion:

The pursuit of a cashless economy in Bangladesh through Mobile Financial Services (MFS) holds great promise and significant potential. The practical contributions of MFS, including financial inclusion, convenience, and reduced reliance on physical cash, have already begun reshaping the country's financial landscape. As smartphone penetration continues to rise and government support remains steadfast, the journey towards a cashless economy gains momentum.

However, amidst this progress, challenges persist. Promoting digital literacy, addressing security concerns, and refining regulatory frameworks are ongoing imperatives. Yet, Bangladesh is firmly on the path of transformation, and the ongoing expansion and innovation within the MFS sector, coupled with intensified financial education and improved infrastructure, positions the country to realize its ambition of achieving a cashless economy (Sahay et al., 2020).

This article effectively demonstrates the substantial economic growth resulting from the adoption of mobile financial services. It analyzes various factors, including the efficiency of digital transactions compared to traditional cash-based methods, which often result in faster transaction times and improved overall economic efficiency. Moreover, the reduced transaction costs associated with mobile financial services can serve as a catalyst for economic growth. Additionally, the simplicity of transactions through mobile financial services, requiring less technological expertise, further contributes to their positive impact on economic development.

References:

Achor, P. N., & Robert, A. (2013). Shifting policy paradigm from cash-based economy to cashless economy: The Nigeria experience. *Afro-Asian Journal of Social Sciences*, *4*(4), 1-16.

Adegoke, Y. (2020). Digital platforms have been a boon for social assistance in African countries during the pandemic. *Quartz Africa*, *9*.

Akara, C. K., & Asekome, M. O. (2018). Cashless policy and commercial banks profitability in Nigeria. *Advances in Social Sciences Research Journal*, *5*(3), 395-406.

Al-Dalaien, B. O. A. (2017). Cashless economy in India: challenges ahead. *Asian Journal of Applied Science and Technology*, *1*(7), 168-174.

Ali, S. S., & Bharadwaj, R. K. (2010). Factor analysis approach of decision making in Indian E-banking: A value adding consumer's perspective. *International Journal of Business Innovation and Research*, *4*(4), 298-320.

Allen, F., Demirguc-Kunt, A., Klapper, L., & Peria, M. S. M. (2016). The foundations of financial inclusion: Understanding ownership and use of formal accounts. *Journal of financial Intermediation*, *27*, 1-30.

Anderson, J. (2010). M-banking in developing markets: competitive and regulatory implications. *info*, *12*(1), 18-25.

Ashaduzzaman, M., Ahmed, S. M., & Khan, M. M. (2022). Consumer choice behavior towards mobile phone Operators in Bangladesh.

Bansal, S. (2017). Cashless economy: opportunities and challenges in India. *Worldwide Journal of Multidisciplinary Research and Development*, *3*(9), 10-12.

Bassens, D. (2020). Emerging geographies of FinTech: A comparative study of organizational, institutional, and strategic financial center change. *COSMOPOLIS Working Paper*.

Chen, L. (2016). From fintech to finlife: The case of fintech development in China. *China Economic Journal*, *9*(3), 225-239.

Chen, M. A., Wu, Q., & Yang, B. (2019). How valuable is FinTech innovation?. *The Review of Financial Studies*, *32*(5), 2062-2106.

Chen, Z., Li, Y., Wu, Y., & Luo, J. (2017). The transition from traditional banking to mobile internet finance: an organizational innovation perspective-a comparative study of Citibank and ICBC. *Financial Innovation*, *3*(1), 1-16.
Clarke, G. R., Xu, L. C., & Zou, H. F. (2006). Finance and income inequality: what do the data tell us?. *Southern economic journal*, *72*(3), 578-596.

Coulibaly, S. S. (2021). A study of the factors affecting mobile money penetration rates in the West African Economic and Monetary Union (WAEMU) compared with East Africa. *Financial Innovation*, *7*(1), 25.

Dahlberg, T., Mallat, N., Ondrus, J., & Zmijewska, A. (2008). Past, present and future of mobile payments research: A literature review. *Electronic commerce research and applications*, *7*(2), 165-181.

Fernandez-Vazquez, S., Rosillo, R., De La Fuente, D., & Priore, P. (2019). Blockchain in FinTech: A mapping study. *Sustainability*, *11*(22), 6366.

Firdous, S., & Farooqi, R. (2017). Impact of internet banking service quality on customer satisfaction. *Journal of Internet Banking and Commerce*, *22*(1).

Gai, K., Qiu, M., & Sun, X. (2018). A survey on FinTech. *Journal of Network and Computer Applications*, *103*, 262-273.

Girón, A., Kazemikhasragh, A., Cicchiello, A. F., & Panetti, E. (2021). Financial inclusion measurement in the least developed countries in Asia and Africa. *Journal of the Knowledge Economy*, 1-14.

Gomber, P., Kauffman, R. J., Parker, C., & Weber, B. W. (2018). On the fintech revolution: Interpreting the forces of innovation, disruption, and transformation in financial services. *Journal of management information systems*, *35*(1), 220-265.

Jack, W., & Suri, T. (2011). *Mobile money: The economics of M-PESA* (No. w16721). National Bureau of Economic Research.

Jayawardhena, C., & Foley, P. (2000). Changes in the banking sector–the case of Internet banking in the UK. *Internet research*, *10*(1), 19-31.

Kabata, D. (2015). Determinants of mobile payment use by consumers in Kenya. *International Journal of Computer Applications & Information Technology*, *8*(1), 152-159.

Kamboh, K. M., & Leghari, M. E. J. (2016). Impact of cashless banking on profitability: A case study of the banking industry of Pakistan. *Paradigms*, *10*(2), 82.

Kaul, M., & Mathur, P. (2017). Impact of digitalization on the indian economy and requirement of financial literacy. In *Proceedings of International Conference on Recent Innovations in Engineering and Technology* (pp. 100-105).

Lema, A. (2017). Factors influencing the adoption of mobile financial services in the unbanked population. *Inkanyiso: Journal of Humanities and Social Sciences*, *9*(1), 37-51.

Malady, L. (2016). Consumer protection issues for digital financial services in emerging markets. *Banking & Finance Law Review*, *31*(2), 389-401.

Mattila, M. (2003). Factors affecting the adoption of mobile banking services. *Journal of Internet Banking and Commerce*, *8*(1), 101-119.

Muotolu, P. C., & Nwadialor, E. O. (2019). Cashless policy and financial performance of deposit money banks in Nigeria. *International Journal of Trend in Scientific Research and Development*, *3*(4), 465-476.

Odior, E. S. O., & Banuso, F. B. (2012). Cashless banking in Nigeria: Challenges, benefits and policy implications.

Ragaventhar, R. (2016). Cashless economy leads to knowledge economy through knowledge management. *Global Journal of Management and Business Research: B Economics and Commerce*, *16*(8), 1-5.

Siyanbola, T. T. (2013). The effect of cashless banking on Nigerian economy. *eCanadian Journal of Accounting and Finance*, *1*(2), 9-19.

Tabassum, R. (2020). Fintech MFS: Best Mobile Financial Services in Bangladesh.

UDDIN, M. M. (2018). Mobile Financial Services and Financial Inclusion in Bangladesh: A Case Study of bKash Limited. *Journal of Business and Technology (Dhaka)*, *6*, 86-98.Wambari, A. (2009). Mobile banking in developing countries (a case study on Kenya).

Yesmin, S., Paul, T. A., & Mohshin Uddin, M. (2019). bKash: Revolutionizing mobile financial services in Bangladesh?. *Business and management practices in South Asia: A collection of case studies*, 125-148.