

Cashless mobile financial services: Rapid growing financial sector in Bangladesh's financial industry

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Abstract

Purpose: This study explores the impact of mobile finance services in Bangladesh, focusing on their growth prospects and potential impact on improving the quality of life of low-income individuals, and their role in combating poverty.

Research Methodology: To gather data on the adoption and utilization of mobile financial services in Bangladesh, the research integrates primary and secondary sources, such as surveys, interviews, and case studies. The study also examines the socioeconomic and demographic factors influencing a country's adoption of mobile financial services.

Results: This study analyzed the economic benefits and potential drawbacks of mobile financial services. This study focuses on the possible impact of mobile finance services in enhancing financial inclusion, expanding access to credit, and promoting economic growth in Bangladesh. This thesis examines the potential impact of mobile financial services on enhancing the financial literacy of the population and boosting the nation's GDP.

Limitations: Bangladesh's ICT strategy shows weak digital initiatives and policy goals, indicating uncertainty regarding rural financial inclusion. To achieve digital services, rural populations need access to digital equipment and supportive social contexts, as digital services have not yet been fully implemented.

Contribution: This study examines Bangladesh's mobile banking regulatory system, identifies improvements in consumer protection, and analyzes the challenges and opportunities faced by mobile financial service providers. The findings can inform policymakers, financial institutions, and service providers in Bangladesh and other developing nations.

Keywords: Cashless, Mobile Banking, Mobile Financing

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1. Introduction

Bangladesh Bank defines Mobile Financial Services (MFS) as an excellent method to assist consumers by providing banking and mobile wireless services that enable users to conduct transactions quickly and conveniently. This pertains to the capability to initiate or receive money transfers, deposit funds, or withdraw funds via a mobile device. Mobile financial services are a method of delivering banking services that enables clients to conduct financial transactions. Mobile transaction processing is basic and inexpensive. In Bangladesh, Bangla QR eliminated point-of-sale equipment and revolutionized

cashless transactions. It includes all visa functionalities based on visa's robust mvisa platform. In November 2021, Bangladesh Bank's debit, credit, and prepaid card point-of-sale transactions increased by 23% (Fabris, 2019). Card-centric advertising and digital payment paradigm awareness have fueled this exponential growth. Bangladesh's substantial mobile and Internet connectivity has allowed 29 banks to obtain mobile financial services (MFS) licenses since 2011. The MFS built a financial development narrative through bill settlements and online banking.

In 2010, the Bangladesh Bank replaced regional clearing offices with the Bangladesh Automated Cheque Processing System (BACPS) for electronic payments. This paradigm shift cuts inter-bank check settlements from 2-3 days to one day. In the following year, BEFTN assisted with corporate payroll disbursements and bulk transactions. This flexible platform allows paying utility bills, debt settlements, and insurance premiums. Agent Banking is a 2013 participant who intends to formalize banking for rural, unbanked people. Two of the sixteen agent banks are expanding (Abbas, 2017). To ensure equitable access, banks must have two rural agent points per urban equivalent. According to Bangladesh Bank, commercial banks that open urban branches must also open two rural branches. Owing to reliability difficulties, rural agent outlets have a hidden trust deficit, which hampers agent banking growth.

Analysts say that the pandemic's acceleration of Internet shopping and digital payments has driven Bangladesh's cashless future. The course was planned, but virus breakout increased its acceptability, especially during travel limitations. The number of Internet banking clients increased by 400,000 in March 2022. According to central bank data, transactions rose from 25.82 billion to Tk 231.4 billion that month. This increase was multifaceted. ATM, POS, CRM, and e-commerce transactions rose to 3.63 million and Tk 43.2 billion, respectively, from December 2021. Real-time gross settlement transactions rose from 1 trillion Tk in December 2021 to 3.79 trillion Tk in March 2021 in three months. This shift is similar to that of the instant bank transfers. Effective cashless payment systems may minimize banks' default, liquidity, and systemic risk in Bangladesh. Banks in Bangladesh measure cashless banking through transactions that utilize MFS, ATMs, debit cards, and online money transfers. ROE and ROA measure profitability, an ongoing issue. We need cards and an MFS to establish a cashless society. Bangladesh issued 2.86 crore debit, credit, and prepaid cards in January 2020, permitting Tk 27,072 crore in transactions, up to 31% of the previous year. This cashless path began approximately 25 years ago when cards were introduced. The 2010 Bangladesh Bank introduced debit and credit card one-time passwords to encourage e-Commerce. In 2010, the Bangladesh Bank introduced BACPS as a replacement for manual clearing. In this new era, banks settle inter-bank checks a day, a considerable improvement over two to three days. In December 2021, 10,000 Tk 72.39 lakh checks were presented daily (Abbas, 2017). BEFTN's orchestral entry in 2011 simplified corporate salaries and payments. This platform accepts bills, loans, and insurance payments. The December 2021 transaction count was 4.77 lakh, averaging Tk 48,254. The MFS entered the financial world in 2011, winning hearts owing to its simplicity and accessibility. In January 2022, there were 11.4 crore MFS followers and Tk 2,366 crore in daily transactions, an increase of 3.08%. The NPSB, founded in 2012, promotes bank interoperability to develop seamless cards and Internet retail transaction tapestry. The NPSB's careful equipment handles the IBFT, POS, and interbank ATM transactions. In 2015, the RTGS allowed secure, real-time interbank transfers, particularly those exceeding Tk 1 lakhs. This technological marvel places Bangladesh at the top in terms of digital payments (Abbas 2017).

According to BRAC Bank's audited financial reports, the king of Bangladesh's mobile financial services (MFS), bKash, witnessed a 22% revenue gain to Tk 3,196 in 2021. With 57 million members, bKash controls 75% of the market. Despite increased customers and sales, the balance sheet indicates a Tk 123 crore deficit due to planned expenditures to improve earnings. Government donations rose by 20% to the Tk 763 crore, supporting financial coordination. Nagad is a formidable competitor with 13.35% daily transactions, 9.59% monthly cash out transactions, and 13.54% agent coverage. Rocket, the first MFS, leads with 23.29% of agents and 19.27% of daily transactions (Tamaruddin, Firdaus, & Endri, 2020). The Rupali Bank's SureCash accounts for 11.69% of the total. Eleven MFS maestros were properly distributed in the remaining 4.67%. The dominant quartet—bKash, Nagad, Rocket, and SureCash control 70% of agents and 99% of transactions (Duncombe 2012).

Trust In 2018, Bangladesh's regulatory embrace facilitated a 51-49% collaboration between Trust Bank and Axiata Digital Services to create Axiata Digital, a mobile financial services and payment giant (Ricardianto et al., 2023)

Many banks operating in Bangladesh provide their clients with highly beneficial financial services via mobile technology (Ong & Chong, 2023). The research focuses on expanding the MFS market within the financial industry through interviews with service providers, users, and agents. The following objectives were established in pursuit of this research.

1. The primary aim of this study is to investigate the expansion and influence of the MFS in Bangladesh's financial industry.
2. The daily interdependencies among clients, representatives, and the service provider

2. Literature Review

The term "mobile financial services" (MFS) refers to providing consumers with financial services that allow them to maintain their banking transactions without physically visiting bank offices. This approach uses a wireless mobile network. MFS is one of the most significant global phenomena influenced by new technical breakthroughs and financial institutions (Obinabo, 2017). This phenomenon has occurred worldwide. Mobile financial services, often known as MFS, are a type of business model that provides financial services that are both easily accessible and technologically advanced. Using technologies such as blockchain and data science, the MFS intends to reduce the time spent on financial procedures while improving their safety and efficiency (Fachrudin & Silalahi, 2022).

Because a significant percentage of the population in Bangladesh did not have access to financial services, the MFS offered commercial banks with enormous potential. The MFS was introduced by Dutch Bangla Bank Ltd. (DBBL), one of the first commercial banks to do so in 2011, leading to the rapid expansion of the sector. As of 2014, at least 15 additional commercial banks had begun providing MFS services. Over 13.2 million registered customers carried out monthly transactions of over TK66 billion through 182,000 agents, nationwide. It has been demonstrated that the government of Bangladesh and the banking sector are committed to upgrading the payment system and increasing the use of electronic banking, even though there are hurdles related to infrastructure and regulations. Bkash, a joint venture between BRAC Bank Limited in Bangladesh and Money in Motion LLC in the United States, is now leading the mobile financial services (MFS) business. Currently, Bkash has a market share of 48%. The International Finance Corporation (IFC) and the Bill & Melinda Gates Foundation have also contributed to implementing MFS in Bangladesh through their respective investments (Ong & Chong, 2023).

2.1 Research Question

Considering the above debate, my work aims to contribute to the process of more properly recording how mobile financial services significantly influence our nation's economic growth. The following are some of the research questions that my research will address: As part of this investigation, the first focus will be on determining which MFS component is the most important by asking, "Who is the most important stakeholder of Mobile Finance Services?" When customers, agents, and service providers are separated, the client becomes the most crucial stakeholder in the MFS. The question that will be asked shortly is, "Which MFS operator is the most popular among the customers, and why is that?" using a Likert chart based on the many features of MFS and assessing the level of satisfaction customers have with the service. "How do they ensure the security of this financial transaction, and do they suggest any additional services that need to be included for better development in this financial sector?" is the question that will be asked from the agent's perspective." This will be carried out in the same manner as the method that follows customers (Obinabo, 2017).

Another essential aspect of this study is that MFS influences their day-to-day operations (from the perspective of both customers and agents). Income and geographic location (Tanha et al., 2022). A questionnaire based on sampling will be administered, and the results will be provided as comparison charts. The final section of this study will concentrate on the question, "What are the fundamental

differences MFS created compared to traditional banking services?” A secondary data collection method was used to determine these particular facts.

2.2 The concept of mobile financing and its components

Mobile phones became the main form of communication in developing nations such as Bangladesh in the early 2000s. Mobile banking is extensively used in affluent countries, but Bangladesh’s banking system must adapt to an information-based economy (Lai & Liew, 2021). Advanced technology has created a faster, more comprehensive, and user-friendly banking system. Mobile phones, a revolutionary technology, are being used worldwide. They offer simple and convenient financial services, providing a unique opportunity to participate in the economic system. Unlike SMS banking, Mobile Financial Services provide various services using novel approaches (Lai & Liew, 2021).

Mobile Financial Services (MFS) combine banking and wireless networks to provide consumer financial services. Several financial organizations have embraced this cutting-edge service to improve daily life using current technologies. Although DBBL was first in Bangladesh, Bkash has offered excellent services since 2011. Thus, alternative financial service providers require market significance (Achord, Chan, Nardani, & Rochemont, 2017).

A 2012 Bangladesh Bank study defined mobile financial services as banking over mobile wireless networks. This method allows users to deposit, withdraw, and transfer money to and from mobile accounts. Bank representatives usually allow mobile account users to transact to non-branch agent sites (Ravi, 2018).

2.3 The mobile financing sector in Bangladesh

Approximately 6 billion individuals out of the global population of 7 billion utilize mobile phones, whereas only 2 billion possess bank accounts. Mobile financial services might serve as an effective means of increasing financial inclusion in societies where the number of mobile phones exceeds that of bank accounts. Utilizing mobile phones in banking can extend financial inclusion beyond the confines of conventional bank-based services. This concept has been integrated into Bangladesh’s banking industry, in addition to standard banking services, and has garnered a highly positive reaction (Lai & Liew, 2021). In March 2019, the country had 67.54 million mobile banking subscribers (Chike, Mbamalu, Oguanobi, & Egbunike, 2023).

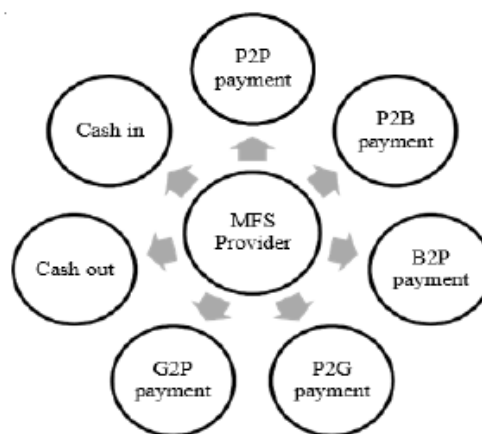


Figure 1. Existing services provided by MFS providers in Bangladesh

2.4 Stakeholders and their Expectations from Mobile Financial Services (MFS)

The importance of mobile financial services is increasing in all industries because of recent improvements in mobile technology and growing awareness among the public. Several parties are interested in this sector because of their capacity to enable transfers and foster global financial inclusion (Ravi, 2018).

Mobile banking services are provided to meet the requirements of busy people, including bank customers. Financial institutions always seek opportunities to implement services that enhance efficiency, save costs, offer prompt responses, and meet the needs of their clients. These are the key factors that motivate banks to provide mobile financial services (Ebole, Kuyoro, & Aremu, 2016). The following are the primary expectations of clients who utilize and embrace mobile banking services:

Traders

Merchants are essential for consumer engagement and substantially impact the growth of mobile banking services. This industry's acceptance and development level might increase proportionately with the number of merchants supporting and promoting services (Rozanna, 2023). Merchants anticipate specific requirements, including quick transaction durations, minimal or nonexistent expenses related to system usage and setup, and elevated degrees of security.

Telecommunications service providers Telecom network providers have expectations from the mobile financial services business, which is primarily focused on generating revenue and growing network traffic. In addition, they anticipate forming partnerships with content suppliers to provide a consistent revenue stream and foster consumer loyalty (Lai & Liew, 2021).

2.5 Producers of portable electronic devices

The advancement of mobile communication technology has been rapid, transitioning from SMS-based services to immediate application-based services. In the past, customers' mobile device use was constrained by device functionalities. Manufacturers are currently focusing on achieving widespread use of embedded mobile payment apps (Fachrudin & Silalahi, 2022).

This may enhance profitability and stability by quickly entering the market and generating more income per user (Zahedi & Piri, 2023). The mobile financial service business is expected to meet the following key demands of mobile device manufacturers:

2.5.1 Financial institutions

Both banks and consumers want to decrease their expenses. Research indicates that banks' operational costs have risen, resulting in the implementation of extra charges. These fees are often justified, because most banks (83.33%) levy less than 1,000 takas annually. The Trust Bank's charge structure is contingent on certain conditions and cannot be ascertained (Ebole et al., 2016). Moreover, prior studies have shown that the client base in certain banks has grown following the implementation of mobile banking services, despite their recent debut and incomplete service offerings (Fabris, 2019).

2.5.2 Providers of software and technology

Mobile banking vendors responsible for mobile software and technology have constantly helped to promote mobile banking services and convince stakeholders of their benefits. Despite the pushback of the banking industry, these trailblazers have promoted mobile banking and shaped industry decisions. Recently, they have become crucial security managers for banks and clients (Uddin & Akhi, 2014).

The institution or organization that makes and enforces laws in a country or region is called the "government." The government manages the mobile banking market and specifies criteria (Ravi, 2018). Taxing mobile payments, enforcing mobile banking regulations, and distributing government allowances to rural and urban residents are expected to generate cash (Mashizha, Gumbo, & Chimwe, 2023).

2.6 Limitation of Stakeholders: Consumer Literacy and Awareness

The degree of consumer education and awareness plays a vital role in the acceptance and implementation of mobile banking and financial services. Our survey in Bangladesh found that 56% of families lack information and literacy regarding these services, despite the broad accessibility of mobile phones. Many customers have a restricted comprehension of the functionalities offered by mobile financial services (Abdullah, Redzuan, & Daud, 2020). Some individuals mistakenly believe that these services can facilitate basic peer-to-peer transfers and must know their potential for more sophisticated operations, such as bill payments or savings. In addition, several clients perceive the service fees

imposed by mobile banking companies as excessively costly. These findings emphasize the necessity for more consumer education and awareness (Reddy, Indraj, & Nikhil, 2017).

2.6.1 Security and efficiency

The mobile money business continues to need assistance in maintaining both security and efficiency. Over 50% of adults in the United States are apprehensive about the safety of utilizing mobile money (Huebner, Frey, Ammendola, Fleisch, & Ilic, 2018). Hence, in Bangladesh, it is imperative to employ a personalized strategy when choosing clients or subscribers (Mahmod, 2022).

2.6.2 Scarcity of competition in the mobile financial services sector

Many banks and mobile firms offer mobile financial services (Abdullah et al., 2020). Of the 28 banks licensed to offer mobile financial services (MFS), only two suppliers, Bkash and ROCKET, have managed to capture most of the market, despite 18 institutions establishing their own MFS services. (Srouji & Torre, 2022).

Mobile Financial Services (MFS) are now seeing significant and rapid growth in financial technology, especially in Bangladesh. The MFS enables financial transactions for individuals across all socioeconomic backgrounds and occupations. Mobile account holders can conduct various transactions with agents outside the bank facilities (Abdullah et al., 2020). These transactions include services such as depositing or withdrawing cash at agent points, withdrawing cash at ATMs, checking account balances, purchasing airtime, paying utility bills, transferring funds between individuals, making payments to businesses, transferring funds from a bank account to a mobile financial services (MFS) wallet, transferring funds from an MFS wallet to a bank account, transferring funds from a card to an MFS wallet, and collecting mini statements (Ravi, 2018).

Bangladesh has 61 banks in 10,467 locations. Dutch Bangla Bank Limited (DBBL), BRAC Bank Limited, and Trust Bank Limited launched mobile banking in 2011. Mobile Financial Services (MFS) such as bKash and DBBL Mobile Banking (now "Rocket") have grown quickly. Nagad, a Bangladesh Post Office (BPO) Digital Financial Service (DFS), delivers Mobile Financial Services (MFS) nationwide at low cost (Huebner et al., 2018). Financial inclusion in Bangladesh has increased significantly since the introduction of these services, especially after 2013. Mobile financial services (MFS) are limited to cash-in/out, peer-to-peer, airtime, internet, and bill payments (Srouji & Torre, 2022).

Among the 16 mobile financial service (MFS) providers in Bangladesh, Kash and Nagad dominate the market (Abdullah et al., 2020). USSD codes and mobile apps with various functionalities are available from all MFS providers. Mobile Financial Services (MFS) links banking services with wireless networks to allow users to move money across mobile accounts (Huebner et al., 2018).

Market share:

Bangladesh's Mobile Financial Services (MFS) business is booming because of its digital financial products and services. In July 2022, over 181 million Bangladeshi accounts had 13 MFS operators. This marked a 16% increase over the previous year. Microfinance has promoted financial inclusion and facilitated transactions, particularly during the COVID-19 pandemic. This has boosted the economy and finances (Uddin & Akhi, 2014).

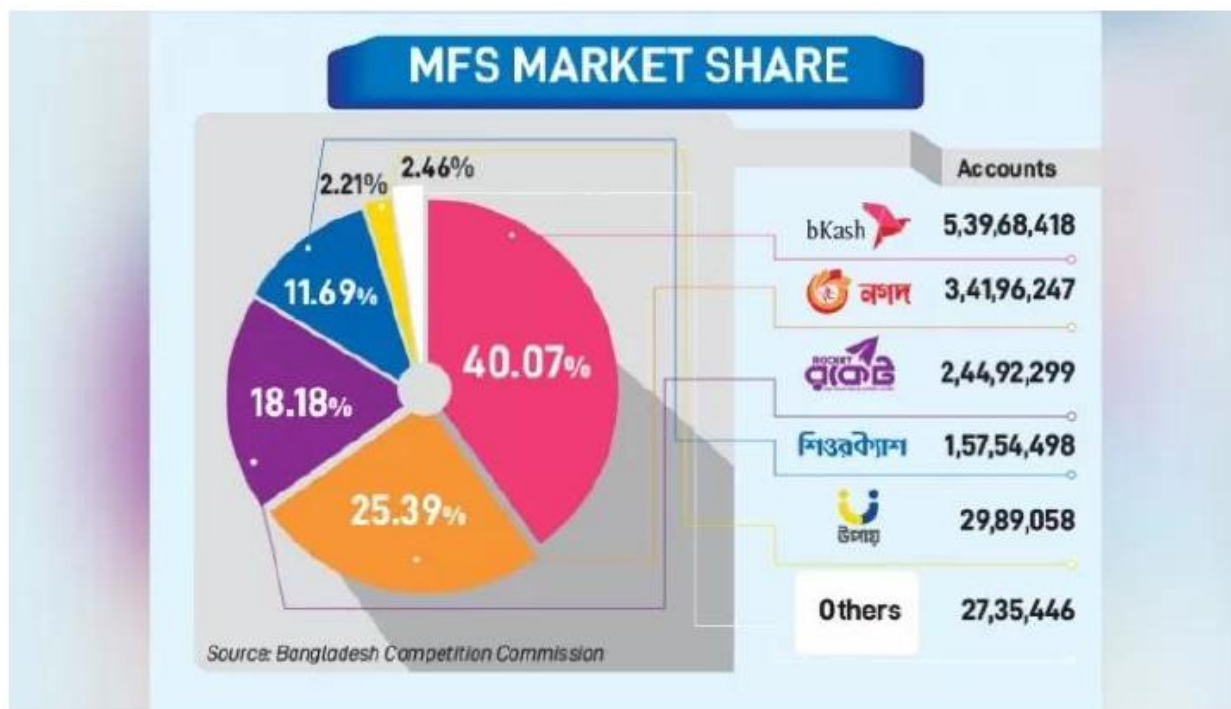


Figure 2. displays the dominant market share of the Mobile Financial Services (MFS) sector with data sourced from Bangladesh Bank.

Bangladesh Bank has started issuing licenses for Mobile Financial Services (MFS) to include persons without bank accounts in the official financial system (Abdullah et al., 2020). Government bodies find MFS appealing because of their multifaceted impact and ability to generate income. The expansion of the MFS sector has been bolstered by factors such as the technologically proficient population, widespread mobile connection, and increasing internet access since its establishment (Hidayah, Waspada, & Sari, 2023). According to Bangladesh Bank estimates, the value of mobile financial services (MFS) transactions showed a 30% growth in FY 2022, reaching Tk9,900 billion compared to Tk7,595.6 billion in FY 2021. Bangladesh has 1.53 million MFS agents (Achord et al., 2017). bKash, Nagad, Rocket, and SureCash are the leading Mobile Financial Service (MFS) providers, accounting for 39.9%, 18.1%, and 11.7% of market share, respectively. MFS clients utilize services for various financial activities such as bill payments, financial transactions, and other related tasks. The significant surge in clients has facilitated the expansion of MFS's range of services, leading to improved customer satisfaction (Hidayah et al., 2023). According to these figures, enterprises in this field prosper and make consistent profits (Chow & Singh, 2022).

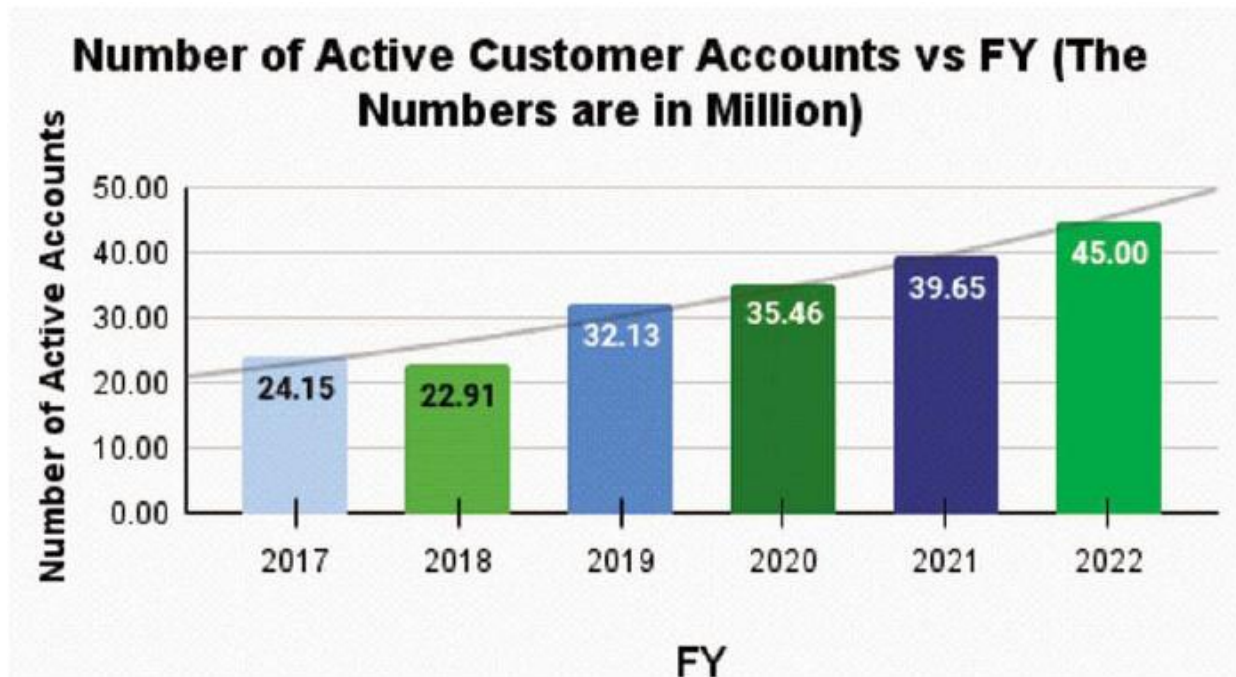


Figure 3. displays the active customer trends sourced from Bangladesh Bank.

Nevertheless, it remains to be determined whether these enterprises can sustain their operations in the long term regardless of their recent financial achievements. For example, bKash, Bangladesh's leading mobile financial service (MFS) provider, has experienced consecutive financial losses over the past three years. Specifically, the company reported losses of BDT 625 million, BDT 814 million, and BDT 1,234.2 million in 2019, 2020, and 2021, respectively. The firm has invested significantly in technology and client acquisition, thus impacting its profitability (Berkimbayeva, 2019). bKash executives assert that they are allocating resources to develop innovative technologies and solutions to address increasing demand and resolve consumer concerns, including fraudulent activities, server disruptions, cybercrime, and account breaches. They are implementing robust Anti-Money Laundering/Combating the Financing of Terrorism measures to provide consumers with more secure services (Hidayah et al., 2023). With a few rare deviations, most MFS providers in Bangladesh face comparable difficulties (Berkimbayeva, 2019).

Without a doubt, bKash and Nagad are the dominant competitors in the Mobile Financial Services (MFS) sector, providing a diverse array of services to their customers (Goel, Sahai, Vinaik, & Garg, 2019). bKash is responsible for conducting over 60% of all MFS transactions in Bangladesh, and more than 70% of active clients hold accounts for the business. Moreover, bKash accounts for more than 70% of the sector's income. Competitors in the industry, such as Rocket, SureCash, MCash, and Upay, need to help retain a substantial market share. Consequently, several smaller competitors may face the prospect of being compelled to cease operations. The industry's monopolistic or oligopolistic structure challenges the established and emerging participants. Considering bKash's substantial market influence, it is appropriate for the central bank to develop "Significant Market Power" regulations for the Mobile Financial Services (MFS) sector, similar to what was implemented for Grameen Phone in 2020 (Goel et al., 2019). This measure can mitigate monopolistic practices and foster robust competition, thus yielding advantages for both minor and major participants. If there are more efficient or effective solutions than SMP (Standard et al.), another option to examine may be a merger. Companies behind the competition may require a diagnostic assessment to ascertain the reasons for their underperformance and identify customer expectations (Datta, 2021).

2.7 Macroeconomic Analysis

Bangladesh has a surface area of 147,570 square kilometers and population of approximately 156 million, making it one of the most densely inhabited countries in the world. Over the past decade, the

country's economy has experienced an annual growth rate of approximately 6%, leading to a corresponding improvement in human development (Farquhar & Rowley, 2009). As a result, poverty has decreased by about 33%, while life expectancy, literacy rates, and per capita food consumption have improved. Although poverty rates have substantially decreased in both urban and rural regions, a considerable number of individuals still live below the poverty threshold. Approximately 47 million individuals reside below the poverty threshold, signifying their ability to earn a daily income of less than \$2. This issue is predominantly prevalent in rural regions where 67% of Bangladesh's population resides. However, a notable proportion of impoverished people can also be found in metropolitan areas (Goel et al., 2019). The graphic below clearly illustrates a significant disparity in socioeconomic factors between urban and rural locations (Davis, Bagozzi, & Warshaw, 1989).

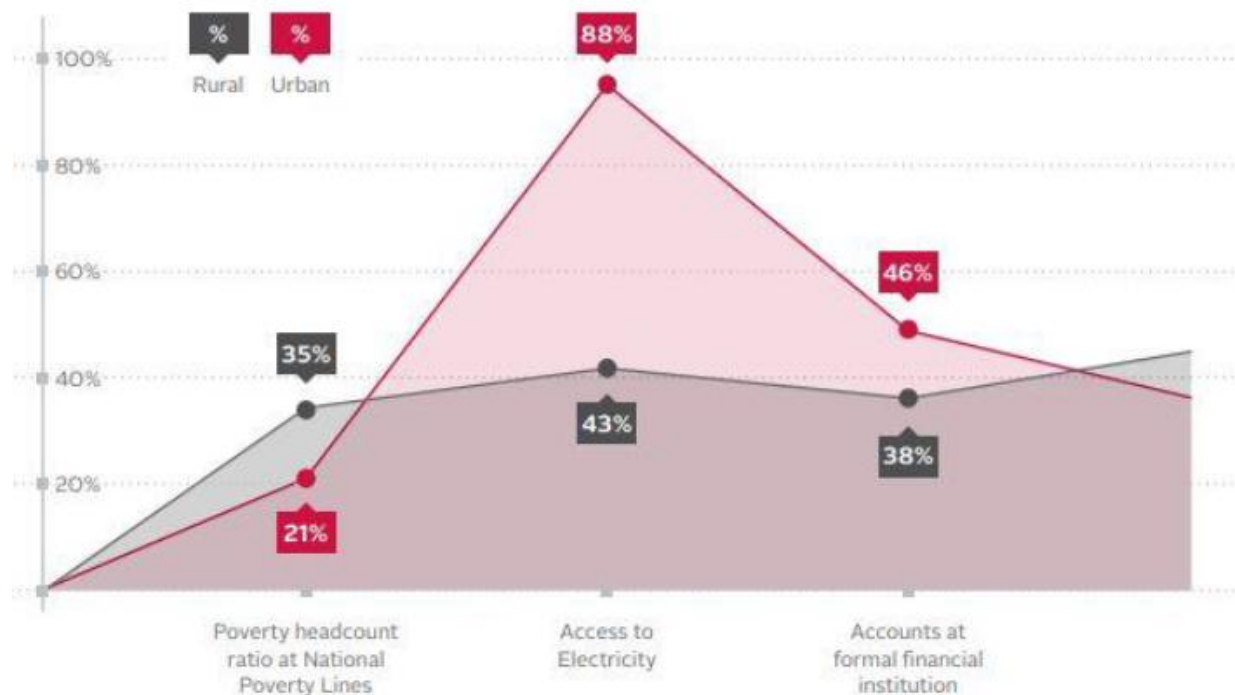


Figure 4. Socio-economic characteristics of urban and rural areas

Although agriculture accounts for only approximately 17% of the country's GDP, almost half of Bangladesh's labor force is employed in agriculture, with another 40% working in services and 17% in manufacturing, primarily in the ready-made garment sector. Although the unemployment rate is high, it is estimated that around 40% of the population is under-employed (Farquhar & Rowley, 2009). Despite declining Bangladeshi emigration from its highest point of over 875,000 in 2008, the country's economy still benefits dramatically from the substantial financial remittances sent by migrant workers. The influx of remittances from the Bangladeshi diaspora has been growing at a double-digit annual pace since the 1980s. In recent years, these remittances averaged approximately 11% of the country's GDP, much higher than the average of approximately 7.1% observed in other Asian nations. In FY13, Bangladesh had an unprecedented surge in remittance inflows, reaching a remarkable amount of USD 14.5 billion by the end of June 2013 (Farquhar & Rowley, 2009).

2.8 Consumer's intention to use Mobile Financial Services (MFS)

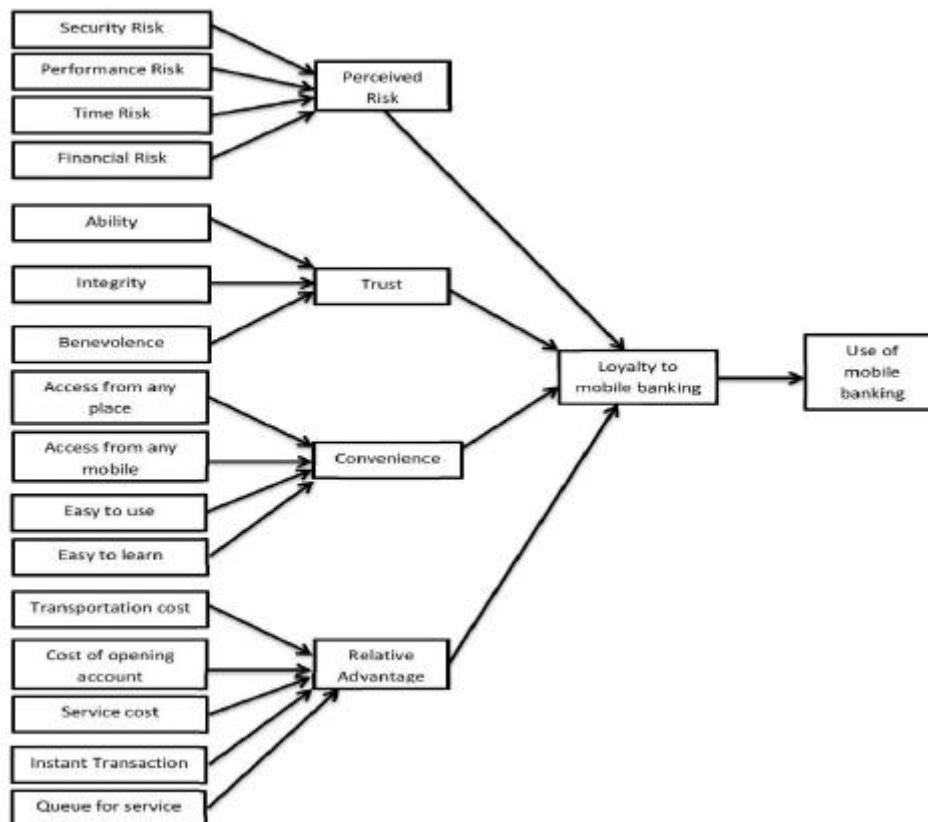


Figure 5. Consumer behavioral matrix utilizing MFS

Current payment methods: Bangladesh Bank owns bKash, a significant mobile financial service provider that promotes financial inclusion. The Internet has saved over 70% of rural people, who lack official financial access. BKash started in Bangladesh in 2010, when 68% had mobile phones. This unique BRAC bank–money in-motion partnership used mobile technology to serve people experiencing poverty. For this wonderful purpose, the International Finance Corporation and the Bill and Melinda Gates Foundation became equity partners. Ant Financial, an Alibaba Group affiliate, supported this initiative in 2018. BKash is a financial empowerment tool that has several functions. Over 200,000 Bangladeshi agents have accepted mobile wallet deposits, withdrawals, and transfers. Over 50 million verified accounts provide affordable and accessible banking services. Both banked and unbanked individuals benefit, particularly in rural regions. People in Bangladesh have praised Blessed bKash for their tireless efforts to promote financial inclusion and mobile banking. Fortune Magazine honored bKash by listing it among its top 50 businesses that impacted society in 2017. Bangladesh's best brand and top mobile financial services brand awards show its supremacy, testament to its rising client base, and industry impact (DiFranco, 2008). Nagad: The Bangladesh Post Office modified the Postal Service Act in 2010 to benefit e-commerce and rural areas financially.

DBBL Mobile Banking began to rocket in 2016. Bill payments, merchant transactions, cell phone top-ups, overseas remittances, and personal and business cash transfers are all available. DBBL, Bangladesh Krishi Bank branches, ATMs, and 142,000+ agents. This complex financial web is woven around mobile phones and PINs, accessible via the USSD menu by calling *322# across all networks except Citycell or SMS on Citycell. More than 300,000 users utilize the ROCKET financial app with 40,000 agents. It offers ATM-free- and cash-in-free accounts for various financial needs (Duncombe, 2012).

Bangladesh Bank approved the United Commercial Bank's Upay Digital Finance Arm's Debut in early 2021. With this promising start, Upay introduced more mobile-banking services. It offers mobile transactions, bill settlements, offline and online payments, remittances, salary distributions, and airtime

recharges. These services are affordable and accessible to Upay's many agents and merchants. Upay supports Bangladesh's 'Digital Bangladesh,' which promotes financial inclusion and frictionless digital solutions.

OK Wallet: ONE Bank Limited's OK Wallet makes mobile payments, money transfers, shopping and bill payments. OK Wallet welcomes people without bank accounts to reduce financial inclusion gaps. This versatile platform allows customers to deposit and withdraw cash from the ONE Bank's 95 branches and extensive Bangladeshi agent infrastructure. Wallet offers real-time transfers, smartphone recharges, and secure digital banking.

Axiata Pay Trust: In 2020, Bangladesh Bank approved the TADL-led mobile financing. TADL celebrates its beautiful marriage with Trust Bank Limited from Bangladesh (51 %) and Axiata Digital Services from Malaysia (49 %). TADL want to dominate Bangladesh's banked and unbanked mobile financial services (MFS). In late December 2020, it debuted 'tap' MFS, promising financial simplicity, flexibility, security, and cost. 'tap' aspires to transform client life through digital payment technology and access. 'tap' aims to lead MFS through innovation and strategic partnerships. Bangladesh Bank makes mobile banking affordable for unbanked Bangladesh.

Relative advantage refers to the unique benefits that mobile banking users can have, which are unavailable through traditional banking services, such as ATMs or non-mobile online banking. Fahim, Al Mamun, Hossain, Chakma, and Hassan (2022) Customers are more inclined to embrace mobile banking if they perceive it as offering more benefits than other channels. The perceived reductions in cost and time can quantify this advantage. Perceived cost savings pertain to expenses associated with mobile banking transactions, such as airtime and bank fees. The cost may encompass transactional expenses, such as bank fees, charges from mobile networks for transmitting communication traffic (including SMS or data), and the costs associated with mobile devices.

b) "Perceived Time Saving" relates to consumers' perception of the duration required to execute a mobile banking transaction (Duncombe, 2012).

2.9 Research Objective:

The temporal aspect is a vital component to consider when deciding to utilize mobile banking services. This dimension is defined as follows:

1. Real-time Transaction: Users' opinions on whether mobile banking transactions can be completed instantly.
2. Service Wait Time: Users' impression of whether there is a line to access mobile banking services.

3. Methodology

The objective of this study is to investigate the positive and negative effects of mobile financial services on Bangladesh's economy. The aims of this study will be considered when analyzing data acquired from persons of varying ages. Although a few other approaches may be used to collect this information, a survey approach was utilized in this study. Specifically, the following areas were the focus of the study methodology.

This research will be designed descriptively from a qualitative viewpoint. A survey will be used to gather data, and its primary objective will be to determine whether there is a correlation between fundamental information, such as gender and income level, and perceptions of quality, cost, and distribution. The number of people using mobile financial services has grown significantly in both population and geographic locations. To obtain sample data for this study, I will conduct surveys in Dhaka, Barisal, and Comilla.

I intend to conduct a poll involving 100 clients and 50 agents, working together. Furthermore, I will converse with staff members from the top ten mobile finance service providers.

A combination of primary and secondary data sources will be used to conduct the study. Secondary data from previously conducted research, such as articles published in newspapers and journal papers published within the present period, were collected. The suggested research survey collected primary data during the study.

Mobile financial services (MFS) are significant in the digital economy.

More than ten years ago, the government of Bangladesh introduced Vision 2021, also known as Digital Bangladesh, as a long-term aim for the nation's socioeconomic growth. The government subsequently implemented various steps to achieve this goal. One such initiative is the Bangladesh Bank issuing licenses for Mobile Financial Services (MFS). This initiative aimed to improve financial intermediation, promote economic growth, and include the unbanked population in the official monetary system.

In 2017, The Economist published a widely read piece asserting that data surpassed oil as the most valuable resource in the world. Data are the fundamental basis of the digital economy, and in Bangladesh, Mobile Financial Services (MFS) play a crucial role in providing essential economic information.

Leaders in both public and commercial sectors make choices based on information. The event trends and volume data of 10.27 million customers can serve as valuable resources for disaster relief efforts and for implementing government safety nets, social security, and other development programs. This can be achieved by utilizing artificial intelligence and machine-learning technology.

4. Result and discussions

Availability of financial services: The majority of the people who participated in our survey needed a bank account, according to our research findings. This was expected because as of 2018, 53 percent of the working population in Bangladesh still needs an account with a bank, mobile money, or any other non-bank financial institution. This problem has persisted throughout history in Bangladeshi banking sector. Nevertheless, this problem allows the MFS to provide accessibility to financial services, enabling MFS users to engage and participate in the complex ecosystem of financial services. Even though they do not have a bank account, our respondents believe that they can accomplish many essential financial transactions by utilizing an MFS. 444 in total. To take advantage of this, our respondents adopted a range of application techniques. These strategies include gaining a deeper understanding of MFS, analyzing the benefits and drawbacks of transferring money from a carrier, and establishing personal accounts since they may be unable to find an agent in an emergency. There is no requirement for a smartphone to utilize applications for the MFS. To do business, all you need is a phone in working order. Many respondents who do not have bank accounts find the procedure overly tricky, and many claim that they prefer to work with independent agents. There are a few of them who admit that they initially used MFS out of fear since they were unable to "see the money" because they were feeling afraid. On the other hand, if you continue to employ them, they will ultimately carry out their instructions.

4.1 Ability to exercise self-control

We find that individuals who do not have bank accounts regularly use MFS accounts for savings, indicating that they perceive MFS as a tool for achieving independence. Many people who participate in the poll are worried that if they keep their money at home, they may be misappropriated or stolen. To cover potential expenditures in the future, such as exam or school admission fees, which are both "once a year" charges for many of our respondents, they keep some of their money in the MFS account. This allows them to cover their potential expenses in the future. This conduct is unreasonable based on the assumption that our respondents are rational economic actors. Undoubtedly, this money is necessary for forthcoming expenses. They believe that it is necessary to erect a barrier that would prohibit them from swiftly obtaining money. They wish to refrain from retaining cash.

One of the implementation tactics is opening a personal account that respondents may use as a savings account. This is done even though most respondents either need to learn the interest rate applied to the balance or care about modest prospective interest income. In addition, respondents stated that they

regularly make an effort to forget that they have savings to prevent themselves from withdrawing money from their MFS account, unless there is an immediate necessity to do so. Several female respondents reported that they occasionally conceal the fact that they have savings in the MFS account from their spouses or sons, out of fear that they could be compelled to withdraw money.

4.2 The ability to move around in space and time

During a transaction, one of the concerns that respondents commonly raised was the capability to achieve mobility in different locations and at different times. It is a common practice for banks to be open only during certain hours and at a specific location. In rural areas, the "Bazar" (the local village market) is often the location of bank branches. This market serves as the center of economic activity in these areas. It is essential to note that the "bazaar" is frequently located in a region far from the places many families call home. The utilization of financial services may cause difficulties when it comes to the transfer or receipt of monetary funds. Participants in the survey regularly brought up this issue and mentioned how the MFS enabled them to circumvent the time and space limits imposed by the bank. Social environment is another factor that must be considered.

To take advantage of this benefit, our responders employed a variety of unique application strategies. In many instances, agents are small shop owners or neighbors with cell phones and MFS accounts who can pay to join a mobile phone network. They advise family members to return to villages to make an effort to preserve positive connections with agents. This eliminates the need for family members to visit the banks.

4.3 Capability to act as a disintermediation

Several respondents mentioned that adopting MFS allows them some flexibility. In this scenario, affordability is compromised. The vast majority of our respondents do not have a bank account, and according to them, one of the most significant challenges in opening a bank account is the requirement of a variety of documents, many of which still need to be possessed. These documents included an identification card, proof of employment, regular income, minimum balance, service fees, and other similar items. Even though they have a bank account, some respondents prefer to use MFS to transfer modest sums. This is because it takes sufficient time to complete banking operations, and it is frequently challenging for working respondents to find time to complete the necessary tasks.

Regarding signature matching, which is a requirement that banks adhere to 24 hours a day, some people point to this difficulty. Some responders cannot sign, and even if they can, they still need to meet the stringent verification requirements of the banks. A few respondents mentioned that MFS agents frequently refuse to withdraw tiny sums of money; thus, maintaining a personal MFS account was the most advantageous choice. Based on the topic presented previously, it is clear that the agency's capabilities have two tiers of implementation methodology. First, they are liberated from banks using an agent-based system, and second, they are liberated from agents through personal accounts.

Because it is difficult to transmit money to villages through banks, several respondents who had bank accounts stated that they prefer that money be sent through MFS. As many banks are located at a significant distance from their homes, it is sometimes challenging for elderly parents to withdraw money. Respondents reported that MFS is easier and requires less time from their parents than other educational options.

4.4 Efficient self-sufficiency

Participants also discussed the resilience they gained as a result of their involvement with the MFS. Resilience refers to the ability to perform specific responsibilities with minimal or no support from others. Most respondents without bank accounts were migrant workers who relocated to the capital in search of better opportunities. In the past, these workers were required to request a villager to get money in the form of tea for their families. Naturally, the passage of time is beyond anyone's ability to regulate. Those who participated in the survey were utterly dependent on other people and occasionally had to pay a portion of the transportation cost. Some people have also had harmful incidents, such as carriers reporting pickpocketing and theft, or family members not receiving the money promised to them.

Because they could not check these claims and were forced to rely on what the airline informed them, migrant workers felt insecure.

The fact that they do not have to go out to use the MFS is something that many female migrant workers have mentioned, giving them a sense of security. Most of these women are employed as domestic workers in affluent households. They are responsible for performing daily tasks and caring for their employers' children. As a result, it is challenging for them to obtain free time and, in some instances, permission from their employers to engage in activities such as going out and sending money, either through a friend or acquaintance in the village or through an MFS agent. Many women have entered the capital for the first time and need a greater understanding of the region in which they reside. They assert that these circumstances are no longer legally enforceable because they can utilize the MFS to trade, even inside.

Some respondents expressed relief that the agent system eliminated their need to input the number and complete their transactions manually. This is because they were afraid of making mistakes. Whenever one of these 25 scenarios occurs, the money transfer is sent to the incorrect account. A few of them had this problem and were never compensated for their money. As a result, they argue that the agent-based system helps complete transactions even though they need a complete understanding of the system.

Several respondents perceived that they could handle this task independently because they were confident of the cashless nature of MFS. It is dangerous to carry money on the road in Bangladesh and earn money at home. The respondents reproduced their likelihood of being robbed. A few respondents mentioned that MFS provides backup if they leave their wallets at home.

Two techniques for gaining trust are opening personal accounts and establishing strong connections with agents. Many respondents needed help in understanding what a mobile phone is, even if it is simple. Additionally, members of the village's family are strongly encouraged to maintain communication with any agents or neighbors who have a personal online financial service account.

4.5 Maintainability of confidentiality

Considering the data, there is a fascinating possibility of secrecy. Participants in the survey considered the MFS to be a valuable instrument for protecting the confidentiality of their financial dealings and finances. When it comes to the necessity of giving money to family members in secret, without informing their husbands or adult children, older women most commonly address the matter. These females feel empowered because money may be held in their account, and their family members cannot withdraw themselves because they frequently do not know their personal identification number (PIN). Additionally, according to the responses of some individuals, they still needed to inform their children about their MFS accounts.

One method that may be used to carry out elections covertly is keeping a personal account secret and being cautious not to disclose any information about it to other people.

4.6 Capability to network

This money can be sent every month or at times of need. The term 'non-network' describes this alternative, which is defined as an online option. Most of the time, our responders are the ones who give the family all of their financial assistance and consistently send money through the MFS. In other circumstances, they provide financial assistance for unforeseen costs such as surgical procedures or medical treatment.

Quite a few respondents claimed that it makes them feel good to assist their relationships with family members. Due to the collectivist attitude that prevails in Bangladesh, they are obligated to divide their belongings. They also provide money to their cousins, maternal and paternal uncles, and other relatives, besides their family members. Many individuals are happy to do this because they believe that they will be rewarded with a future "kindness," which is an act that may be reciprocated. To create social capital, our respondents made a conscious effort to take advantage of the chance to network through the MFS.

People have been leveraging their relationships in the village to move money for a long time; the introduction of MFS has made networking more efficient and less time consuming. Defendants take advantage of this benefit by establishing personal or agency accounts, and typically teach their family members unfamiliar with MFS about the benefits of using it.

4.7 Transforming Bangladesh's Financial Landscape

The rapid growth of cashless mobile financial services (MFS) has significantly transformed Bangladesh's financial industry, with notable results reflecting widespread adoption and impact. In recent years, MFS platforms such as bKash, Rocket, and Nagad have seen exponential growth, driven by their accessibility, convenience, and increasing penetration of mobile phones across the country. A substantial increase in the number of registered users indicates broad acceptance of these services, with millions of transactions now conducted daily through mobile wallets.

The results show that the MFS has substantially increased financial inclusion, particularly among unbanked and underbanked populations in rural and remote areas. People who previously had limited access to traditional banking services were now able to perform financial transactions, save money, and even access credit facilities through their mobile devices. This shift empowered marginalized communities by providing them with financial tools that were previously out of reach.

Moreover, the growth of MFS has spurred economic activities, with small and medium-sized enterprises (SMEs) leveraging these services for business transactions, thereby improving their operational efficiency and expanding their customer base. Government initiatives and regulatory support have also played a crucial role in fostering this growth, ensuring a secure and user-friendly environment for cashless transactions. Overall, the rapid expansion of cashless MFS in Bangladesh highlights a pivotal shift towards a more inclusive and efficient financial ecosystem.

5. Conclusion

Enhancing the understanding and utilization of MFS: MFS providers should consider enhancing public awareness of their services rather than just P2P transfers to promote them effectively. To ensure that agents can adequately guide consumers in utilizing their services, improving their agent-training programs may be necessary. To enhance knowledge and skills in using MFS goods, it is advisable to provide training to both staff and beneficiaries. It also encompasses consumer rights, comprehension of standard pricing (and how to deal with agents attempting to overcharge customers), safeguarding of accounts, and the advantages of using MFS beyond withdrawals, withdrawals, and P2P transfers. Furthermore, it is crucial to meticulously record the precise expenses associated with MFS compared with alternative methods, considering additional aspects such as transportation costs and unproductive time. mSTAR assisted many USAID implementing partners in this cost-benefit study, providing valuable proof for doubters in comprehending the genuine advantages of mobile financial services (MFS) over cash. An effective strategy to promote an MFS as a money transfer channel might involve emphasizing its potential as a savings tool, particularly considering the significant interest in saving expressed by a substantial percentage of respondents. Men accounted for 80% of recipients and 78% of workers, whereas women accounted for 63% of beneficiaries and 73% of workers. Perceiving an MFS as more than a basic transfer service would help reduce the number of over-the-counter transactions and enhance financial inclusion.

Diversify the implementation of MFS products beyond money transfer: Exploring the potential of mobile credit services while expanding the range of payment options is recommended. The restricted availability of loans from conventional financial institutions for the general public, along with the findings from our sample, indicates the possibility of utilizing mobile phone usage data for credit risk analysis and scoring. Mobile reviews of this type have already been conducted in several global markets, either by MFS providers (such as M-Shwari in Kenya) or third-party vendors (for example, through contracts). Bangladesh's credit availability gap can be eliminated by implementing comparable credit assessment services and microloan products based on mobile wallets.

The number is 28.

1. Taking gender disparities into account in a more explicit manner,
There are disparities between men and women regarding access to mobile phones and mobile financial services (MFS). In Bangladesh, women have limited access to financial services and mobile phones. 62% of individuals who do not yet have a bank account and possess a cell phone are female.
2. Enhancing Local Language Accessibility
Given that most MFS menus are now exclusive to the English language and that most Bangladeshis cannot read or communicate in English, it is imperative to create a USSD menu in Bangla. However, more is needed, as over 40% of people in Bangladesh cannot read or write in Bangla. Hence, service providers may contemplate providing interactive voice response (IVR) menus that clients can utilize to manage their accounts. With the increasing number of Bangladeshis using smartphones, mobile financial service (MFS) providers may eventually develop applications that seamlessly include Bangla language, voice, and visual iconography. These features assist illiterate users. However, this development is expected to take a few years.
3. Enhancing Existing Regulations
Although Bangladesh's existing rules for Mobile Financial Services (MFS) have created a favorable environment for its growth, our conversations with service providers and customers have identified some areas where the legislation might be enhanced. Implementing a hierarchical KYC system, in which accounts with lower values need less verification compared to accounts with better values, may incentivize the establishment of MFS accounts, particularly among those at the lower end of the socioeconomic spectrum. Establishing a centralized KYC database that includes pertinent information from the national ID database may expedite the KYC process by enabling MFS providers to quickly obtain the necessary customer authentication data. MFS providers should be able to ascertain whether another provider has already authenticated a person through the KYC procedure. This would enable them to promptly validate accounts in such instances.
4. Enhancing the usefulness of MFS records.
Financial staff and beneficiaries have highlighted concerns regarding the need for readily available transaction data. Receiving separate SMS confirmations in English after each transaction poses difficulties for high-volume users, particularly those with limited English proficiency, in tracking the transaction history of beneficiaries, especially those who utilize MFS for their organization.

Most service providers continue to use a predominantly manual approach for managing business accounts and delivering transaction reports via email after processing. The finance staff needs to be immediately apprised in these reports.

5.1 Research Implication

Financial inclusion is crucial to creating a more inclusive society. The academic discourse in business and economic studies is highly intrigued by digital technology's economic growth and advancement. Recently, there has been growing interest among researchers and policymakers in exploring new digital financial services as a possible way to promote financial inclusion. The implementation of digital payment technologies has enhanced the accessibility of financial systems, utilization of digital platforms, and integration of online money transfer systems with mobile phone technology. The use and application of digital services can influence daily economic activities, thereby contributing to the economic advancement of society. Financial inclusion is a promising catalyst for change in several developing nations because it can alleviate poverty and promote a more inclusive society in terms of financial access. Commercial banks in Bangladesh have invested significantly in technological infrastructure to enhance transaction efficiency, improve client access, and deliver high-quality goods and services. Despite recognizing financial inclusion as a crucial factor for growth, Bangladesh still needs to catch up with overall access to financial institutions. Bangladesh has been acknowledged by the World Bank Group (WBG) under the Global Financial Access Framework (UFA) as one of the 25 nations with 73% of the world's economically excluded population. A recent survey conducted by Financial Inclusion Insights (FII) in Bangladesh revealed that 47% of the population is financially included through mobile money. In comparison, 17% utilize banks and 5% rely on non-bank financial

institutions. The data also indicate that only 32% of women utilize digital payments, while 56% of males do so.

5.2 Future Scope of This Study

Although the financial industry has proliferated, studies are yet to explore the potential drivers and challenges of using digital means to promote financial inclusion. The emergence of mobile banking and digital financial services, such as bKash, has led to a new business trend and unique strategy for accessing the Bangladeshi market. Bangladesh's Information and Communication (ICT) strategy highlights the government's digital initiatives and policy goals as weak in digital inclusion. Consequently, the extent to which digital services and financial technology (fintech) provide financial inclusion in rural Bangladesh remains to be determined. To achieve financial inclusion in the digital economy, rural populations must have access to digital technology and a supportive social context.

References

- Abdullah, N., Redzuan, F., & Daud, N. A. (2020). E-wallet: Factors influencing user acceptance towards cashless society in Malaysia among public universities. *Indonesian Journal of Electrical Engineering and Computer Science*, 20(1), 67-74.
- Achord, S., Chan, J., Nardani, S., & Rochemont, S. (2017). A Cashless Society-Benefits, Risks and Issues. *London: Institute and Faculty of Actuaries. Search in.*
- Berkimbayeva, A. (2019). Transition to a Cashless Society: Impact on Economic Activity.
- Chike, N. K., Mbamalu, E. I., Oguanobi, C. A., & Egbunike, C. F. (2023). Big Data Analytics and market competitiveness of selected firms in Lagos State, Nigeria. *Annals of Management and Organization Research*, 4(4), 251-269.
- Chow, T. W., & Singh, H. (2022). Cultivating emerging leadership competencies for individual and organizational success. *Annals of Management and Organization Research*, 4(2), 129-145.
- Datta, R. K. (2021). Relationship between Cashless Banking and Bank's Profitability of Bangladesh. *International Journal of Science and Business*, 5(7), 21-32.
- Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management science*, 35(8), 982-1003.
- DiFranco, F. (2008). The cashless revolution. *Seced*, 2008(4).
- Duncombe, R. (2012). An evidence-based framework for assessing the potential of mobile finance in sub-Saharan Africa. *The Journal of Modern African Studies*, 50(3), 369-395.
- Ebole, A., Kuyoro, S., & Aremu, I. (2016). Intelligent GSM Based Prepaid Energy Meter in a Cashless Economy. *International Journal of Science and Research*, 5(1).
- Fabris, N. (2019). Cashless society—the future of money or a utopia. *Journal of Central Banking Theory and Practice*, 8(1), 53-66.
- Fachrudin, K. A., & Silalahi, A. S. (2022). A Study of the Use of Cashless Payments in Relation to Income, Financial Behavior, and Almsgiving Behavior in Sumatera, Indonesia. Paper presented at the Second International Conference on Public Policy, Social Computing and Development (ICOPOSDEV 2021).
- Fahim, A. Y., Al Mamun, A., Hossain, A., Chakma, T., & Hassan, E. M. (2022). Unpacking Brand Imperialism in Bangladesh: Emerging Market Perspective. *International Journal of Financial, Accounting, and Management*, 4(2), 219-239.
- Farquhar, J. D., & Rowley, J. (2009). Convenience: a services perspective. *Marketing theory*, 9(4), 425-438.
- Goel, R., Sahai, S., Vinaik, A., & Garg, V. (2019). Moving From Cash to Cashless Economy: A Study of Consumer Perception Towards Digital Transactions. *International Journal of Recent Technology and Engineering (IJRTE)*, 8(1).
- Hidayah, N., Waspada, I., & Sari, M. (2023). The Dynamics Of Cashless Society: A Systematic Review. *Advanced International Journal of Business, Entrepreneurship and SMEs*, 5(15).
- Huebner, J., Frey, R. M., Ammendola, C., Fleisch, E., & Ilic, A. (2018). What people like in mobile finance apps: An analysis of user reviews. Paper presented at the Proceedings of the 17th international conference on mobile and ubiquitous multimedia.

- Lai, P. C., & Liew, E. J. (2021). Towards a cashless society: The effects of perceived convenience and security on gamified mobile payment platform adoption. *Australasian Journal of Information Systems*, 25.
- Mahmod, S. (2022). Demystifying work-related outcomes and life satisfaction of Bangladeshi working women during the COVID-19 pandemic. *Annals of Management and Organization Research*, 4(2), 109-127.
- Mashizha, M., Gumbo, L., & Chimwe, E. (2023). Addressing Barriers to entry into international trade by SMEs in Zimbabwe. *Annals of Management and Organization Research*, 4(4), 309-323.
- Obinabo, C. R. (2017). Cashless economic policy: An analysis of financial intermediation in the pre and post cashless policy periods. *Journal of Policy and Development Studies*, 11(2), 1-12.
- Ong, H.-B., & Chong, L.-L. (2023). The effect of cashless payments on the internet and mobile banking. *Journal of Financial Services Marketing*, 28(1), 178-188.
- Ravi, P. (2018). A Study Of Cashless System And Cashless Society: Its Advantages And Disadvantages. *Indian Journal of Applied Research*.
- Reddy, M. S., Indrajaya, S., & Nikhil, L. (2017). Implementation Of Neural Network For Cashless Transactions In Credit Card Transactions. *International Journal of Recent Trends in Engineering & Research*, 1-13.
- Ricardianto, P., Soekirman, A., Pribadi, O., Atmaja, D., Suryobuwono, A., Ikawati, I., . . . Endri, E. (2023). Perceived of ease of use and usefulness: Empirical evidence of behavioral intention to use QR code technology on Indonesian commuter lines. *International Journal of Data and Network Science*, 7(4), 1815-1828.
- Rozanna, M. (2023). What is strategic management research? *Annals of Management and Organization Research*, 4(4), 271-280.
- Srouji, J., & Torre, D. (2022). The global pandemic, laboratory of the cashless economy? *International Journal of Financial Studies*, 10(4), 109.
- Tamaruddin, T., Firdaus, A., & Endri, E. (2020). Customer satisfaction mediates the effect of self service technology on customer loyalty in of islamic bank E-banking services in indonesia. *ILTIZAM Journal of Shariah Economics Research*, 4(2), 1-15.
- Tanha, M., Fahim, A. Y., Tasnim, S., Raju, M. A. R., Islam, W., Shawn, F., . . . Islam, M. J. (2022). Different dimensions of conspicuous consumption in the emerging market of Bangladesh. *Annals of Management and Organization Research*, 4(1), 65-87.
- Uddin, M. S., & Akhi, A. Y. (2014). E-wallet system for Bangladesh an electronic payment system. *International Journal of Modeling and Optimization*, 4(3), 216.
- Zahedi, M. R., & Piri, M. (2023). Evaluation chain management model with emphasis on intellectual capital using blockchain technology. *Annals of Management and Organization Research*, 4(4), 281-295.