

The Evolution and Current State of Mobile Banking Adoption in Bangladesh

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Abstract

This review paper looks at how mobile banking has grown and where it stands today in Bangladesh, pulling insights from a broad mix of studies, theoretical models, and policy reviews. Mobile banking has become a powerful tool for increasing financial inclusion, especially for people in rural and low-income areas who have traditionally been left out of the formal banking system. The growth of this sector has been fueled by rapid improvements in mobile technology, supportive government policies, and innovations from both fintech startups and traditional banks.

The paper takes a critical look at the current research landscape, covering topics like how consumers behave, the state of digital infrastructure, concerns about security, demographic factors, and how the COVID-19 pandemic accelerated mobile banking use. While popular models like the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT) are commonly used to explain adoption, the paper also points out that these models often miss key cultural and behavioral factors specific to the Bangladeshi context.

Several important research gaps are identified, including the lack of long-term studies, a heavy focus on urban users, limited intersectional analysis, and not enough evaluation of whether current regulations are truly effective. To help move the field forward, the paper suggests future research should focus more on how mobile banking impacts people's financial behavior, the importance of digital literacy, the role of gender, and how well policies are working.

By bringing together what we currently know and highlighting what's missing, this review offers a solid foundation for researchers, policymakers, and industry professionals who are working to make mobile banking in Bangladesh more inclusive, secure, and sustainable.

1. Introduction

The blending of technology and finance has made mobile banking a vital tool for improving financial access in developing countries. In Bangladesh, what started as a secondary banking option has now become an essential service for millions—especially those living in rural and underserved communities. Thanks to the country's widespread mobile phone use and strong support from the central bank, mobile financial services (MFS) have grown rapidly since the early 2010s. This growth has been powered by improvements in mobile technology, proactive government policies, and a rising number of fintech innovators.

However, despite this progress, challenges remain. Limited infrastructure, uneven digital literacy, concerns about trust, and inconsistent regulation still hold back broader adoption.

This review paper sets out to answer some key questions:

- How has mobile banking changed and grown in Bangladesh?
- What technological, behavioral, and policy-related factors shape how people adopt it?
- How do banks and fintech companies help—or sometimes hinder—this growth?
- What impact did COVID-19 have on how people use mobile banking?
- What gaps still exist in current research, and where should future studies focus?

The paper is organized around these questions. It starts by looking at the history and technology behind mobile banking in Bangladesh, then moves into adoption patterns and demographic trends. Finally, it explores regulatory issues, financial inclusion efforts, and what we've learned since the pandemic.

2. Methodology

This review used a narrative literature review method to bring together what is currently known about how mobile banking has developed and is being used in Bangladesh. The goal was to assess the scope of existing research, highlight trends and patterns, point out gaps, and uncover insights that could be useful for both academics and practitioners.

2.1 Search Strategy

Relevant studies were found through detailed searches in several academic databases, including:

- Google Scholar
- ScienceDirect
- SpringerLink
- IEEE Xplore
- ResearchGate

Search terms included:

“mobile banking”, “digital financial services”, “Bangladesh”, “mobile banking adoption”, “technology acceptance”, “m-finance”, “FinTech Bangladesh”, “financial inclusion”, and “mobile banking challenges”.

The search focused on English-language publications from 2010 to 2024 to capture both early developments and recent trends.

2.2 Inclusion and Exclusion Criteria Included:

- Peer-reviewed journal articles
- Conference papers
- Working papers that explored mobile banking adoption in the Bangladeshi context

Excluded:

- Studies focused only on other countries
- News articles, short commentaries
- Duplicate entries

2.3 Data Extraction and Analysis

From the selected studies, the following key details were collected:

- Author(s) and publication year
- Research aims
- Methodology (qualitative, quantitative, or mixed methods)
- Theoretical models used (like TAM, UTAUT, or DOI)
- Major findings and conclusions
- Noted limitations and suggestions for future research

These were then sorted into major themes such as:

- Historical trends
- Technology infrastructure
- User behaviour
- Regulation
- Impact on financial inclusion

2.4 Review and Synthesis

The findings were analysed using a thematic synthesis approach. This involved:

- Comparing how different studies were conducted
- Identifying where findings agreed or differed

- Highlighting areas that need more research
- Evaluating how applicable the conclusions are to broader contexts

3.1 Historical Development of Mobile Banking in Bangladesh

Mobile banking in Bangladesh began to take shape in the early 2010s, spearheaded by Dutch-Bangla Bank and bKash in partnership with BRAC Bank. These trailblazing efforts aimed to bring financial services to people who previously had limited or no access to traditional banking—especially those living in rural areas. As noted by Hasan et al. (2011), the initial services were fairly basic, focusing on things like checking balances, transferring funds, and recharging mobile phones, often through USSD and SMS platforms. Their study found that owning a mobile phone significantly boosted access to banking, particularly where physical branches were few and far between. However, these early investigations tended to be more descriptive than analytical. They often relied on small-scale surveys and didn't use extensive statistical models or track changes over time. They also didn't explore how cultural attitudes or trust issues might have affected people's willingness to adopt mobile banking. While these studies highlighted mobile banking's promise to close financial gaps, they frequently ignored real-world challenges like poor internet infrastructure or unclear regulations that made it hard to expand. One major area still needing attention is the lack of long-term research comparing the early adoption period with today's more mature market—especially in terms of how users' behaviors and habits have changed. Future studies would be more insightful if they followed early adopters over the years, examining how improvements in infrastructure and policy reforms have impacted their continued use of mobile banking.

3.2 Technological Infrastructure and Innovation

Technological infrastructure has been a key driver in the development of mobile banking in Bangladesh. The fast growth of mobile network coverage and the rising use of smartphones laid the groundwork for mobile financial services (MFS) to thrive. According to Islam and Ghosh (2015), the early spread of mobile banking was made possible largely by the widespread use of basic mobile phones, which allowed even lower-income users to access USSD-based services without needing internet access. As 3G and 4G networks became more

common, banks and fintech firms rolled out app-based platforms featuring more advanced tools like biometric logins, QR code payments, and the ability to link multiple accounts. Karim et al. (2018) observed that these upgrades led to increased investment in digital platforms aimed at improving customer service and making operations more efficient. Despite these advances, most studies have focused mainly on describing the technologies rather than analyzing how well they work for users or what obstacles remain. For instance, there's limited research comparing how rural users—who often rely on USSD—engage with mobile banking versus urban users who benefit from high-speed internet and apps. Additionally, not much has been done to compare how different banks and fintech companies have adopted these technologies based on their own capabilities. This leaves room for future studies to look at interoperability issues, backend limitations, and how API integrations affect service delivery. There's also a gap in exploring how newer technologies like AI, machine learning, and blockchain could be used to make Bangladesh's mobile banking systems more efficient and secure.

3.3 Consumer Behaviour and Adoption Models

Understanding how consumers behave has been a key focus of mobile banking research in Bangladesh. Many researchers have used well-known models like the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT) to guide their work. For instance, Alam et al. (2014) used TAM to identify factors such as perceived usefulness, ease of use, and trust as major influences on whether people adopt mobile banking. Similarly, Hoque and Sorwar (2015) applied the UTAUT model to show that social influence and supportive conditions play a big role in shaping people's intentions to use mobile banking services. These frameworks have been useful in understanding behavior, especially among users in urban areas. But there are some limitations. Most of these studies haven't adapted the models to fit Bangladesh's specific context. While TAM and UTAUT are widely accepted, they don't always reflect the unique social and cultural factors at play—like low levels of digital literacy, informal financial habits, or differences in access between men and women. Also, the majority of the research relies on one-time surveys, which makes it hard to track how behavior changes over time or how people actually use the services beyond just saying they intend to. Psychological factors like habit formation, fear of risk, or resistance to change—especially in environments where trust is low—are often left out of the analysis. To close these gaps, future research should use mixed methods that blend data analysis with interviews,

observations, or real usage tracking. There's also potential to apply newer behavioral models that take into account economic, cultural, and emotional factors to better understand how people make decisions in a fast-changing digital finance landscape.

3.4 Demographic and Social Factors

Demographic and social factors play a major role in shaping how people in Bangladesh adopt mobile banking. Several studies have pointed to education, income, age, and gender as key influencers. For example, Khatun and Islam (2016) found that younger people—especially those between 18 and 35—are more likely to use mobile banking because they're more familiar with digital tools and comfortable using mobile technology. Likewise, research by Alam and Islam (2019) showed that people with higher education and income levels tend to use mobile banking apps more frequently, especially those that offer added features like paying utility bills or managing digital savings. While these findings align with global patterns, they also highlight a growing digital divide. Many studies focus on urban or semi-urban users, often overlooking poorer or rural communities. Gender issues also don't get enough attention. Although mobile banking is often seen as a way to boost women's financial independence—especially through platforms like bKash—there's very little research on the challenges women face in using these services on their own. Things like traditional gender roles, limited phone ownership among women, and male-dominated financial decision-making can create serious barriers, but they're rarely examined in depth. What's also missing is an understanding of how these demographic factors overlap—for example, how being a woman, living in a rural area, and having limited education might all combine to affect mobile banking usage. To fill this gap, future studies should take a more intersectional approach and use stratified sampling to better reflect the experiences of different groups. In-depth qualitative research, such as interviews and storytelling, can also help shed light on the social and cultural challenges that shape how people engage with mobile banking across Bangladesh.

3.5 Security and Risk Perception

Security and perceived risk often come up as major concerns in discussions about mobile banking in Bangladesh. Many studies point to these issues as key

reasons why some people hesitate to use such services. For example, Kabir et al. (2021) found that users in rural and semi-urban areas are particularly worried about things like fraud, data leaks, and making mistakes during transactions that can't be undone. These fears are made worse by the fact that many people don't know how to resolve disputes or don't feel protected as consumers. Islam and Sultana (2020) also noted that because of these concerns, users often avoid making large transactions through mobile banking apps, fearing they might lose their money without any way to recover it. While these studies do a good job of highlighting user fears, they usually don't take the next step to evaluate how well service providers are addressing these concerns through technology. There's also a lack of focus on whether users are even aware of security features that already exist. Most of the research depends on people's own reports, which might not give a full picture of how often security issues actually happen or how serious they are. In addition, we still don't know enough about how banks or regulators respond to fraud or enforce data protection laws. This opens up a chance for future research to explore how well tools like two-factor authentication, transaction alerts, and biometric logins work to ease user fears and prevent fraud. Comparing how different banks and mobile service providers handle security could also reveal best practices and help shape better policies. Going forward, combining user feedback with technical evaluations and a closer look at the security systems used by providers will be key to building trust and boosting confidence in Bangladesh's growing digital banking sector.

3.6 Role of Financial Institutions and Fintech Firms

The growth of mobile banking in Bangladesh has been strongly influenced by the changing roles of traditional banks and emerging fintech companies. In the beginning, mobile financial services (MFS) were mainly driven by partnerships between banks and mobile network operators. Pioneers like bKash (linked to BRAC Bank) and Dutch-Bangla Bank Mobile led the way. Later on, fintech firms such as Nagad—supported by the Bangladesh Post Office—entered the scene, bringing in new digital solutions like easier sign-ups, instant onboarding, and links to the national ID system. According to Chowdhury and Rahman (2020), fintech companies have been quicker than banks to roll out customer-friendly innovations because of their flexibility and deeper understanding of people who don't have access to traditional banking. Still, even with these changes, most research tends to lump all providers together, without comparing different business models like agent banking, bank-led services, or those led by mobile network operators. There's also not much academic work on the challenges that

banks face internally—like outdated IT systems, strict regulations, and a cautious approach that slows down innovation. Only a few studies explore how things like API integrations or open banking could help fintechs and banks work together to reach more people. In addition, we don't know much about how competition between these institutions affects service prices, quality, or customer loyalty. To better understand the industry, future research should take a closer look at how each provider operates—examining their strategies, technical capabilities, and ability to innovate. This could include case studies or performance comparisons to find out which approaches work best in delivering safe, inclusive, and scalable financial services to different groups of people across Bangladesh.

3.7 Government Policies and Regulatory Environment

The regulatory framework introduced by Bangladesh Bank has been key to the rise of mobile banking in the country. Starting with the Mobile Financial Services (MFS) Guidelines issued in 2011—and later updated in 2022—the central bank set out clear rules around licensing, transaction limits, identity verification (KYC), and risk management. These measures were designed to expand financial access while keeping the overall system stable. Research by Hossain and Islam (2017) suggests that these regulations helped build public trust and fueled the rapid growth of services like bKash and Rocket. However, more critical perspectives—like those from Nabi and Sultana (2020)—point out gaps in how these rules are enforced and highlight the lack of system-wide integration between service providers as a major issue. Even though Bangladesh Bank has tried to encourage innovation through tools like agent banking and regulatory sandboxes, there's still very little research assessing how effective these efforts have been. What's also missing from the current literature are in-depth policy reviews that look at the real-world impact of specific regulations—like how the introduction of e-KYC or limits on transaction sizes have influenced user behavior or the reach of services. Consumer protection is another area that hasn't been given enough attention, especially when it comes to handling complaints, preventing fraud, and safeguarding user data. This is a serious gap considering how quickly mobile transactions are growing. Going forward, researchers should focus on examining how well the regulatory system is working—possibly by interviewing key stakeholders, conducting compliance checks, or comparing Bangladesh's approach with that of other developing countries. Such studies would be essential in helping policymakers create smart, balanced regulations that support both innovation and user safety.

3.8 Impact of Mobile Banking on Financial Inclusion

Mobile banking has become a powerful tool for promoting financial inclusion in Bangladesh, especially among low-income groups, rural communities, and people who've never had access to traditional banks. A number of studies, including Rahman et al. (2018), have shown how platforms like bKash and Nagad have allowed users to carry out important financial tasks—such as sending money, saving, and paying bills—right from their mobile phones. These services have been especially helpful for rural families and migrant workers by lowering transaction costs and making financial services more convenient. Research by Ahmed and Haque (2020) also emphasized how mobile banking played a key role in distributing government-to-person (G2P) payments, including social safety net programs that expanded during the COVID-19 crisis. While these studies clearly show that mobile banking has improved access, fewer of them look into how deeply it is actually helping people—such as whether users are saving regularly, getting access to credit, or becoming more financially stable in the long term. Much of the existing research focuses on how many people are using mobile banking, not how well it's working for them or what the outcomes are over time. Structural issues like low digital literacy, unequal access to mobile phones, and the reliability of mobile banking agents also don't get enough attention, even though they can have a big impact on whether people keep using these services. Another gap is the lack of gender-specific data, which makes it hard to know if mobile banking is truly empowering women or just recreating existing inequalities in a digital format. To better understand the real impact, future studies should go beyond just measuring access and look at how mobile banking affects users' financial health over time. This could be done by combining data analysis with personal stories from users across different income levels and backgrounds.

3.9 COVID-19 Pandemic and Digital Shift

The COVID-19 pandemic played a major role in speeding up digital transformation in Bangladesh's financial sector, pushing more people to adopt mobile banking across different user groups. With lockdowns and social distancing limiting access to physical banks and cash transactions, mobile financial services became a crucial alternative. Ahmed et al. (2022) reported a sharp rise in mobile banking transactions during this period, driven by urgent consumer needs and government efforts. For instance, stimulus packages and welfare payments were distributed through mobile wallets, prompting many first-

time users—especially in rural and low-income areas—to turn to these services. Some providers also rolled out special features during the pandemic, like fee waivers and touch-free payment options, to help ease the transition. While these developments are well known, most studies have only scratched the surface. They often rely on broad usage data from telecom companies or service providers, leaving out deeper analysis of how people's habits and behaviors changed—and whether those changes lasted beyond the pandemic. There's also been little focus on the user experience itself, such as the challenges people faced in signing up, learning to use new app features, or getting help when they needed it. Another missing piece is insight into how different sectors or groups—like small businesses, students, or women—adapted to mobile banking during the crisis. To fully understand the impact, future research needs to explore whether this shift to digital was temporary or if it led to long-term changes in financial habits. Gathering long-term data and following up with users will be key to understanding whether this digital momentum will continue and what factors are helping or holding it back.

4. Study Limitations and Recommendations for Future Research

While there's been a noticeable increase in research on mobile banking in Bangladesh, some important gaps still remain. Many of the studies we have tend to focus on specific areas—mostly urban settings—and often rely on one-time surveys. This limits our understanding of how mobile banking is being used across the country, especially in rural areas or among groups that aren't usually represented, like women, older adults, or people with limited digital skills.

This section breaks down some of those key limitations (in Section 4.1) and then suggests ways future research can go further (in Section 4.2). The goal is to help researchers, policymakers, and financial service providers take a more complete and realistic view of how mobile banking works on the ground.

By filling in these research gaps—through more long-term studies, a wider range of participants, and more diverse research methods—we can move closer to building a mobile banking system in Bangladesh that truly works for everyone, not just the digitally connected or urban populations.

4.1 Limitations in Current Research

Even though there's a growing amount of research on mobile banking in Bangladesh, several key gaps still limit how useful and accurate these studies really are. One of the biggest issues is that many rely too heavily on cross-sectional surveys with small samples focused mainly on urban areas. This makes it hard to apply the findings to rural communities or other underrepresented groups. A lot of the data comes from people living in Dhaka or Chattogram, leaving out the diverse experiences of users in more remote parts of the country. Another problem is the use of self-reported data, which can be influenced by what participants think they're expected to say—especially when it comes to sensitive topics like trust, fraud, or women's financial independence. On top of that, most studies only look at whether people are willing to use mobile banking, without exploring how often they use it, whether they're satisfied, or how it affects their financial lives in the long run. Research often sticks to popular models like TAM and UTAUT, but this limits new perspectives—other frameworks like behavioral finance, cultural theory, or systems thinking are rarely used. There's also a lack of long-term or experimental studies, which are crucial for really understanding how user behavior changes over time. Very few studies make use of actual usage data, like mobile app activity or transaction records, which could provide a more accurate picture of user habits. Finally, interdisciplinary research is rare—there's little collaboration between experts in tech, economics, and sociology, which is needed to fully understand mobile banking adoption. To address these issues, future studies need to use more diverse methods, include a broader range of participants, and blend quantitative data with rich qualitative insights to capture the full story of how mobile banking is being used across Bangladesh.

4.2 Future Research Directions

As mobile banking in Bangladesh continues to grow and adapt to new technologies and regulations, several exciting areas for future research have come to light. One of the most important is the need for long-term studies that track how user behavior, trust, and transaction habits change over time. This kind of research could reveal patterns in how users stick with mobile banking, move from basic to more advanced features, and whether the platform truly supports long-term financial inclusion. Comparing Bangladesh's progress with that of neighboring countries like India, Nepal, and Pakistan could also offer valuable lessons in building better infrastructure, policies, and user engagement.

strategies. Another area that deserves more attention is digital literacy—especially programs that help women and older adults confidently use mobile banking on their own. Researchers might also explore how cutting-edge technologies like artificial intelligence and machine learning can be used to detect fraud, improve credit scoring, and offer personalized financial services. With Bangladesh preparing for wider 5G access and digital ID integration, it's also worth studying how these advancements will affect mobile banking access and user experience. On the policy front, more detailed evaluations are needed to understand how recent regulatory changes—like digital identity checks (e-KYC), transaction limits, or efforts to make platforms work better together—are actually impacting users and the market. Finally, future research should take a more holistic approach by combining insights from economics, behavioral science, gender studies, and tech fields. This kind of interdisciplinary work could help paint a fuller picture of how mobile banking is being adopted and how to make it more inclusive, secure, and sustainable for everyone in Bangladesh.

5. Conclusion

This review has taken a critical look at how mobile banking has developed and where it currently stands in Bangladesh, pulling together insights from a wide range of studies, theories, and real-world contexts. The evidence suggests that mobile banking has made a real difference in expanding financial access, especially for people in rural areas and those previously excluded from the traditional banking system. Its growth has been fuelled by a mix of technological progress, supportive government policies, and innovative efforts by both banks and fintech companies. However, the review also shows that progress hasn't been evenly spread. Issues like limited digital skills, regional inequality, concerns around trust and security, and a lack of solid evaluations of policy outcomes continue to hold things back. One of the key findings is that most research has focused on whether people are adopting mobile banking, often using models like TAM and UTAUT. While helpful, these models don't go far enough in capturing the deeper behavioural and cultural aspects of how people use financial tools. There's a strong emphasis on access and adoption rates, but much less attention to how often people use these services, whether their financial habits are changing, or if they feel more empowered in the long run. Also, the research methods used so far tend to be fairly narrow—there's not much longitudinal data, not enough qualitative exploration, and not enough work that brings together different academic perspectives. This makes it harder to truly understand how mobile banking fits into everyday life.\n\nLooking forward, future research needs

to move past static models and start exploring how people's financial engagement changes over time and in different contexts. There's a clear need for long-term and experimental studies that focus on retention, financial improvement, and digital empowerment. More attention should be given to hearing directly from those who are often left out—like women, older adults, and rural communities—using approaches that mix data with personal stories and look at overlapping challenges. There's also room to explore how new technologies like AI, biometrics, and 5G could improve security, access, and user satisfaction. Lastly, policy research should go beyond just describing what's happening—it should measure what's working and what's not, and offer practical, evidence-based suggestions. By filling these gaps, researchers and practitioners can help shape a more inclusive, resilient, and future-ready mobile banking system in Bangladesh.

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Appendices

Appendix A: Summary of Adoption Models

Technology Acceptance Model (TAM): This model highlights how people's decisions to adopt technology are mainly influenced by how useful they think it is and how easy it seems to use.

Unified Theory of Acceptance and Use of Technology (UTAUT): This expands on TAM by also considering the impact of social pressure and whether users feel they have the support and resources needed to use the technology.

Both of these models have been widely used in studies on mobile banking adoption in Bangladesh. However, they often don't take into account local cultural differences or the unique infrastructure challenges in the country.

Appendix B: Policy Timeline - Mobile Banking in Bangladesh

- 2011: Bangladesh Bank introduces Mobile Financial Services (MFS) guidelines.
- 2015: Revised transaction caps and agent banking rules introduced.
- 2020: Push for digital transactions during COVID-19.
- 2022: Updated MFS regulations with focus on interoperability and consumer protection.