Article

Assessment of Service Quality in the Mobile Financial Services Industry: An Application of the SERVQUAL Model

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Abstract: *This study used the model of SERVQUAL to look at the quality of service in Bangladesh's Mobile Financial Services (MFS) industry, mostly from the urban and young people's perception. Consumers shared their feedback that service quality is more important than ever before in light of the rapid changes in MFS platforms and their impact on mobile banking and other service consumption patterns. To examine the quality of service, the study focused on the five primary components of the SERVQUAL model: tangibility, reliability, responsiveness, assurance, and empathy. We got relevant perceptual information from 231 people who use mobile banking services in Bangladesh, who are mostly young people, students, and residents in urban areas. In this study, we used Partial Least Squares Structural Equation Modeling (PLS-SEM), which is a widely used statistical method to look at the data and assess the hypotheses that were created. The results show that all five SERVQUAL categories have a positive effect on the quality of service on these platforms. These results gave service providers useful information on how to improve service quality, make customers happier, and create long-term connections with them in the competitive MFS market.*

Keywords: Service Quality, Mobile Financial Services, SERVQUAL Model, Customer Perception, PLS-SEM

1. Introduction

1.1 Background of the Study

In Bangladesh, where the financial system is changing quickly with the help of technology, mobile financial services (MFS) are becoming more and more vital for boosting economic activity and making it easier for people to access financial services. One interesting fact is that MFS platforms are driven by most people who have mobile phones and who cannot get to a bank or any financial institution easily. These simple and easy-to-use services help people to do a lot of different financial operations, such as sending money, paying utility bills, such as electricity, gas, and water bills, and buying things at online and offline stores. This is very important for bringing the untapped people who do not have bank accounts into the official financial market and letting them contribute to this vast economy conveniently. According to Islam et al. (2024), the use of MFS platforms has grown a lot in Bangladesh since 2024, with companies like bKash, Rocket, and Nagad leading the market. There are also some new MFS platforms, such as Upay and Tap, but those are very niche players in this market, so we will be focusing on the leaders of the market in general. This increase in the number of services shows how important it is to check service quality in this domain of financial services to ensure long-term growth and user retention appropriately. There are some important factors, such as reliability, responsiveness, assurance, empathy, and tangibility that shape client satisfaction, which in turn affects service quality in Mobile Financial Services (MFS). By focusing on the

consumers' expectations and actual views of service performance, the SERVQUAL model, which was created by Parasuraman et al. (1988), offers a strong framework for assessing these five aspects (Parasuraman et al., 1988, as referenced in Khan et al., 2020). The SERVQUAL model helps us to find out the service gaps in the mobile financial services sector and some opportunities to improve them for operational excellence and better service quality. The SERVQUAL model has been widely and commonly used in the assessment of MFS platforms in Bangladesh. As an example, Khan et al. (2020) found some interesting facts, such as the correlation between bKash customers' satisfaction with service quality and their overall satisfaction using structural equation modeling. We are also using the same statistical approach to review the current scenario of the MFS market. So, they found that customer satisfaction is significantly impacted by responsiveness. Businesses in the MFS sector should prioritize providing quick service, benefits, and some individual care in order to succeed in this competitive landscape. Similarly, Uddin (2023) examined mobile banking services and discovered that reliability, responsiveness, assurance, and comprehension are service quality aspects that contribute to consumer contentment. Despite this, the study also indicated that tangibility was less related to customer satisfaction. Even with these attributes, providing high-quality MFS in Bangladesh is still hard. Problems like bad customer service have been noted, where users have trouble getting in touch with service reps and have to pay a lot of money while they wait (Akhtaruzzaman et al., 2017). Many of the time, agents don't know how to properly answer customer questions, and there have been times when agents were involved in deals that were not allowed or were illegal. Interoperability issues between MFS providers are also a big problem, as users have to keep multiple accounts to get full access to all services (Islam et al., 2024). This separation makes things harder for users and stops the development of a more open and unified banking system. A recent study has also looked into how people see technical problems and how that affects their happiness. Islam et al. (2024) looked at the link between MFS use and customer happiness by looking at things like image, purpose of use, and technical issues. The study discovered that customer happiness and perceptions have a big effect on their decision to use MFS. Interestingly, technical issues did not have a big effect on total satisfaction. This shows that users value service dependability and speed more than occasional problems. Because of these results, MFS companies in Bangladesh need to focus on improving the parts of service quality that have a direct effect on how happy their customers are. Focusing on timeliness and understanding by providing quick customer service and customized services can help you keep more users. Taking care of the problems of connectivity and service separation can also improve the user experience and make the financial world more open to everyone. MFS companies can find service gaps, make focused changes, and build a happier and more loyal customer base by using the SERVQUAL model in a planned way.

1.2 Research Question

How significantly do the five elements of the SERVQUAL model (reliability, responsiveness, assurance, empathy, and tangibility) affect service quality in Bangladesh's mobile financial services sector?

1.3 Objectives of the Study

In the context of the MFS industry in Bangladesh, this study intends to examine the link between customer satisfaction and service quality. The following are the main objectives of this research:

- To examine the influence of the five dimensions of the SERVQUAL model on service quality in the mobile financial services sector of Bangladesh.

- To identify which service quality dimension(s) have the most significant impact on service quality among users of mobile financial services in Bangladesh.

2. Literature Review

Mobile Financial Services (MFS) in Bangladesh—led by platforms such as bKash, Rocket, and Nagad—have transformed financial access, particularly for unbanked and underbanked communities. This digital shift has significantly contributed to Bangladesh's financial inclusion goals, aligning with the broader Sustainable Development Goals. Many studies have shown the importance of the need to monitor service quality, which is commonly assessed using the SERVQUAL model introduced by Parasuraman et al. (1988) to ensure long-term user retention and satisfaction. This chapter synthesizes the latest empirical research that applies the SERVQUAL framework to the MFS context in Bangladesh. It also explores differences in perceptions across demographic groups, investigates the interplay among SERVQUAL dimensions, and highlights implications for financial inclusion and service improvement.

2.1 Growth and Adoption of Mobile Financial Services in Bangladesh

Akhter and Khalily (2020) found that these MFS platforms have been very helpful in bypassing traditional and lengthy banking systems, also promoting financial inclusion and supporting micro-entrepreneurship in Bangladesh. Their study also showed us that users in rural areas have started to rely heavily on MFS for receiving remittances, making payments, and savings. Bkash is dominating the market at this moment, and there is no doubt about that, accounting for over 80% of all MFS transactions, which is well documented, with Rocket and Nagad also maintaining substantial user bases (Kabir et al., 2020). Sharif et al. (2024) showed us that this sector saw a heavy growth after the COVID pandemic, particularly among rural users, due to expanded agent networks and increased trust in mobile platforms. However, user satisfaction and service perception differ significantly across population groups. Sultana and Rahman (2022) found and showed us that low-income and rural users often have less digital literacy and adequate training, making them more vulnerable to service quality issues such as transaction delays or agent misconduct. Similarly, Fagun et al. (2022) observed and stated that while MFS usage increased a lot during the COVID-19 pandemic, lower-income households decreased their savings and started to increase their reliance on digital transfers like payments and send money options, highlighting the unequal distribution of benefits across user groups. According to a different study by Jahan and Shahria (2022), the most important factors that influenced young users who were primarily students using mobile banking were responsiveness, perceived cost, and security features of the system. Their structural model analysis also showed that the perception of high costs could be somewhat reduced by increased responsiveness.

2.1.1 Financial Inclusion & Cost Burden

Financial inclusion is the main or basic theme in the development of this sector in Bangladesh. Akhter and Khalily (2020) found that these mobile platforms (especially bKash) significantly increased savings rates and access to finance among many groups. However, these same users often experience and complain about higher transaction costs. Jahan and Shahria (2022) also reported in their article that young users also think that these services are expensive despite the relatively small nominal fees, especially when using multiple services frequently. Agent commission structures, as discussed by Kabir et al. (2020), tend to lack transparency and consistency, which heavily affects low-income users who rely on cash-based transactions through agents.

2.1.2 Demographics, Digital Literacy & Satisfaction

User satisfaction is highly dependent on age, education, and location. Urban users prioritize features such as mobile app design and transaction speed, whereas rural users emphasize reliability, trust in agents, and transaction success rates (Sharif et al., 2024). Security concerns are especially pronounced among older users and those with limited digital literacy (Jahan & Shahria, 2022), indicating that trust and assurance are critical components of user satisfaction in this demographic.

2.1.3 Interplay among SERVQUAL Dimensions

Few studies directly explore the interplay among SERVQUAL dimensions in the MFS context. However, Jahan and Shahria (2022) used Partial Least Squares Structural Equation Modeling (PLS-SEM) to show that responsiveness and perceived expense are interlinked; users are more tolerant of higher costs when service is prompt and reliable. Akhter and Khalily (2020) further observed that consistent performance (reliability) enhances user trust (assurance), particularly for financially vulnerable users who cannot afford transactional errors.

2.2 Reliability

Reliability means the consistent and accurate performance of services as promised by the provider, which is widely acknowledged as the cornerstone and base of service quality within the SERVQUAL framework (Parasuraman et al. 1988). In Bangladesh's Mobile Financial Services (MFS) ecosystem, which includes platforms like bKash, Rocket, and Nagad, reliability is particularly critical and very important. Users very depend on these important services for receiving remittances, bill payments, cash withdrawals, and merchant transactions. Any disruption or error in delivery can compromise trust and discourage continued usage. A 2024 empirical study led by Abureza M. Muzareba of the University of Dhaka, using an enhanced SERVQUAL model on bKash, emphasized reliability as a key driver of user satisfaction and intention to reuse. The study found pronounced gaps between user expectations and perceptions of reliability, with rural users and women showing the largest discrepancies. (Muzareba, 2024) This underscores the fact that even the leading MFS platforms face significant challenges in reliably delivering core services. In the broader financial services domain, Yusuf et al. (2024) applied SERVQUAL within Bangladeshi banking and found that reliability had a strong positive correlation with satisfaction, ranking among the top predictors of service quality. While this study did not focus exclusively on MFS, it reinforces that reliability carries substantial weight across digital and branch-based services. Moreover, reliability issues disproportionately impact vulnerable and low-income user groups who lack alternative financial channels. A mixed-methods analysis by Rahman and bin Ahsan (2024) highlighted that rural MFS users frequently experienced transaction failures or delays; such events were not only inconvenient but sometimes led to financial loss and a breakdown in trust. This vulnerability is aggravated when users rely on agents with limited accountability or on poor digital literacy to resolve issues.

2.3 Responsiveness

Responsiveness means the willingness and ability of service providers to offer prompt and fast assistance and timely resolution of customer inquiries or complaints, which is a crucial dimension in the SERVQUAL model (Parasuraman et al., 1988). In the highly time-sensitive environment of Mobile Financial Services (MFS), prompt response plays a significant role in shaping user satisfaction and sustaining trust. Jahan and Shahria (2022), which is mainly a study of young MFS users, identified responsiveness as one of the key determinants of

satisfaction, alongside perceived cost and relative advantage. Using PLS-SEM analysis, the authors found that responsiveness had a strong direct effect on user satisfaction, and also mitigated perceptions of expense, demonstrating how prompt service can offset costs in the eyes of tech-savvy users. Uddin's 2023 analysis of mobile banking satisfaction among 170 customers in Chittagong revealed a statistically significant positive relationship between responsiveness and overall satisfaction. The study found that customers place high value on quick confirmation of payments, resolution of transaction issues, and speedy support via agents or call centers. In broader financial services research, the study by Wang et al. (2023) confirmed that responsiveness, along with reliability and assurance, had a strong positive effect on customer satisfaction for non-banking financial institutions in Bangladesh. Though not specific to MFS, these findings reinforce the fundamental importance of responsiveness in all financial channels. The rural MFS landscape in Bangladesh reveals even greater responsiveness gaps. Kashem and Hayat's 2024 study of regional MFS users (drawing upon E-S-QUAL extensions) highlighted that slow support and delayed confirmation messages disproportionately affect underbanked customers. In rural contexts, where users frequently rely on live agents for assistance, responsiveness directly impacts perceived service quality.

2.4 Assurance

Assurance refers to the staff's competence, courtesy, and ability to instill trust and confidence in customers (Parasuraman et al., 1988). In the context of Mobile Financial Services (MFS) in Bangladesh, assurance primarily involves transaction security, reliable information, and staff—or agent—expertise. For users dependent on digital platforms, particularly during monetary transactions, perceived assurance is critical in determining continued engagement and adoption. A recent SERVQUAL and Structural Equation Model (SEM) study conducted with 550 MFS users in Bangladesh by Rouf (2023) found that assurance, along with reliability, responsiveness, and security, significantly influences customer satisfaction. Although assurance ranked lower compared to reliability, it still played a statistically significant role (Rouf, 2023). In the banking sector, Yusuf et al. (2024) demonstrated in a study of 240 respondents that assurance exhibits a strong positive correlation with overall satisfaction, similar in magnitude to reliability and responsiveness, within the SERVQUAL framework. This comparative insight underscores assurance's crucial role, even when services are digital—or hybrid digital and agent-based—rather than purely in-person. Beyond generic notions of trust, user perceptions of assurance in MFS reflect concerns about fraud, data security, and agent credibility. Kashem and Hayat (2024) found that rural users expressed anxiety over transaction security and agents' honesty, and that improved training and certification for agents significantly enhanced assurance scores in SERVQUAL assessments. Evidence from state-owned banks offers further perspective: Tasnim and Patwary's (2022) study of Sonali Bank using SERVQUAL indicated that assurance was evaluated as "moderate to satisfactory." However, they noted that customers expected higher levels of staff competence and integrity—insights that are applicable to MFS agent networks as well.

2.5 Empathy

Empathy refers to the degree of caring, individualized attention that a service provider offers to its customers (Parasuraman et al., 1988). In MFS—an often-impersonal digital environment—the agent interface and perceived human touch become crucial, especially in rural or low-digital-literacy contexts where personal empathy fosters trust and continued use.
In a 2022 study focusing on mobile banking users across Rangpur and Rajshahi, Huq (2022) found empathy to be a key determinant of client satisfaction. Specifically, users valued agents' attentiveness to queries, staff approachability, and tailored assistance, despite their reliance on

mobile phone platforms. Empathy consistently outperformed other SERVQUAL dimensions in predicting positive user reactions. Yusuf et al. (2024) reported in their study that empathy had a positive, important relationship with customer satisfaction in Bangladeshi banking services, alongside tangibility and reliability. Their regression analysis showed us that empathy's contribution was comparable in strength to assurance and responsiveness, reinforcing its role in shaping emotionally resonant service experiences. Let us look at the international evidence that also supports this finding. Sherwani et al. (2024), studying e-banking in Pakistan, found that empathy significantly influenced purchase intentions, mediated by customer satisfaction. Variables like age and gender moderated this relationship, which also suggested that empathy's impact varies by demographic segment, a finding with direct relevance for this sector in Bangladesh. Akter, M. (2021) found that empathy had the strongest beta coefficient in predicting customer satisfaction, which surpassed reliability and assurance, which also suggests that personalized attention may be one of the most underserved, yet impactful, domains in MFS service quality.

2.6 Tangibility

Tangibility in the SERVQUAL framework refers to the physical aspects of service delivery: facilities, equipment, interface design, and the appearance of personnel (Parasuraman et al., 1988). In the Bangladeshi Mobile Financial Services (MFS) sector, "tangibles" extend beyond the app interface to include usability of USSD menus, presence and appearance of agent outlets, and the professionalism of agents. Although often considered less impactful than other dimensions, tangibility can make or break user trust, particularly among first-time or low-literacy users. In a 2023 empirical study of mobile banking users in Chittagong, Uddin (2023) applied the SERVQUAL scale and found that tangibility had no statistically significant effect on customer satisfaction, unlike reliability, responsiveness, assurance, and empathy. The author suggests that convenient, functional interface designs are taken for granted, and only become salient when they significantly fail to perform. However, recent research in mainstream banking indicates otherwise. Yusuf et al. (2024), in a wider national sampling of 240 bank customers, identified a negative correlation between perceived tangibility and customer satisfaction—users viewed outdated interfaces or poorly maintained agent outlets as a signal of poor service quality overall. For non-bank financial institutions (NBFIs) operating hybrid digital-agent models, the study by Wang et al. (2023), confirmed that tangibility remains a significant positive predictor of user satisfaction. Their extended SERVPERF analysis showed that clear, well-branded agent outlets and intuitive transaction screens are instrumental for building confidence and satisfaction in these less-structured financial environments. Evidence from state-owned banking also highlights the importance of tangibles. Tasnim and Patwary (2022), studying Sonali Bank, found that tangibility significantly affected overall perceptions of service quality, while other dimensions were inconsistent, factors like branch cleanliness and staff presentation consistently improved satisfaction.

2.7 Demographic Factors in Service Quality and Customer Satisfaction

Gender has emerged as one of the most prominent determinants affecting the usage and satisfaction of MFS. Dey and Majumder (2024) found that among over 12,000 ever-married women surveyed in Bangladesh, education, occupation, and residence were strong predictors of mobile banking usage. Their study revealed a stark gap in awareness and utilization between men and women, especially in rural areas. According to The Daily Star (2023), the International Finance Corporation (IFC) found that compared to higher rates among urban men, only 14.8% of women were found to be active MFS users, indicating that social, educational, and infrastructure barriers prevent women from participating. Geographic locations can also shape

service quality. Extremely rural users who often lack access to physical bank branches and their services, and on the other hand, they depend heavily on MFS platforms. Kashem and Hayat (2024) found that users in rural areas placed a higher value on tangibility and responsiveness than urban users. Their study revealed that rural customers reported greater dissatisfaction with empathy and support, indicating unequal service experiences based on location. These disparities were echoed in national user data, which showed that while MFS penetration was high in divisions like Rangpur (28.1%), overall service satisfaction was considerably lower due to delayed confirmations, weak agent networks, and limited user training. Educational background can also further influence service perceptions and usability. Dey and Majumder (2024) showed us that educated women used MFS more frequently and regularly, and they also reported more consumer satisfaction due to a better understanding of the systems and greater confidence in transactions. This finding was reinforced by Fagun et al. (2022), who found and showed us that educated users in rural areas adapted more quickly and fastly to these platforms and were better at avoiding transaction errors. In contrast, users with limited education often faced challenges in navigating digital platforms and lacked access to reliable support systems. Income level is an important demographic factor. According to Kashem and Hayat (2024), low-income users frequently expressed their frustration over service fees and transparency, which they viewed as barriers to satisfaction. Higher-income users, on the other hand, were less price-sensitive and more focused on interface quality and added features. Digital literacy and age are also very important to assess consumer satisfaction and service quality. According to Fagun et al. (2022), older users, such as farmers over 50, reported having trouble utilizing app-based or USSD-based services unless they receive assistance from agents, which may compromise their privacy. These users appreciated agent-led support, clear instructions, and simplicity. Younger users, particularly those under 35 in cities, on the other hand, showed a high level of digital confidence. The necessity of creating MFS platforms that support a variety of user competencies is highlighted by this generational gap.

2.8 Service Gaps and Policy Implications

High transaction fees disproportionately affect low-income users. Transparency International Bangladesh (2025) reports that MFS users pay 7–15 times more per withdrawal compared to traditional banks, driven by the market dominance of bKash and Nagad and weak regulatory oversight. Reforms like fee caps, increased competition, and independent regulation are needed. Security concerns also hinder adoption, with over 6% of users and 17% of agents facing fraud incidents in 2024, and over USD 7.8 billion laundered illicitly (Transparency International Bangladesh, 2025). Strengthening KYC, agent vetting, and anti-money laundering measures is critical. Digital infrastructure remains uneven, especially in rural areas, where poor network coverage, low smartphone penetration, and limited digital literacy disrupt transactions and erode trust. Additionally, the lack of interoperability among MFS platforms creates extra costs and inconvenience. Standardized protocols and regulatory frameworks are necessary to enable seamless cross-platform transfers (FutureStartup, 2025). Policy responses should include fee regulation, security enhancements, infrastructure investment, digital literacy programs, and mandated interoperability to make MFS safer, affordable, and accessible for all, especially marginalized groups.

3. Development of Hypothesis

3.1 Tangibility and Service Quality

A service's tangibility, according to the SERVQUAL model, can be defined as its outward look, including its buildings, machinery, employees, and promotional materials (Parasuraman et al., 1988). Things that are easy to touch and feel include aesthetically pleasing interfaces, skilled

customer care representatives, and mobile apps that are easy to use when it comes to Mobile Financial Services (MFS). According to studies, customers' views of service quality are greatly influenced by how tangible the service is. As an example, in the MFS industry in Bangladesh, a study conducted by Rouf (2023) indicated that concrete factors, such as the functioning and design of mobile applications, greatly impact consumer satisfaction. Similarly, Ananth et al. (2010) found that customers are more satisfied with banking services when the atmosphere is pleasant and visually appealing. In our case, we have seen that some researches show that tangibility's effect might change and vary based on the service setting and environment. In one study, Abdelhadi (2021) discovered no correlation between tangibility and consumer happiness in a service situation is one such example. Although there might be some differences, almost every scholar agrees that tangibility is a major and important factor in how people perceive the quality of a service, particularly for services that don't have many country-wide physical support centers, such as MFS platforms.

H1*: Tangibility has a positive effect on the service quality of mobile financial services.*

3.2 Reliability and Service Quality

The ability of a service provider (in our case, MFS platforms) to provide consistent and accurate benefits of the services that have been promised is called “reliability” in our chosen model (Parasuraman et al., 1988). Consistent and reliable processing of transactions, the operations also need to be correct, such as account information of both or multiple parties in a transaction, and the system performance should also be very consistent, ensuring all aspects of reliability in this industry. A vast amount research showed that reliability has a big effect on how customers feel about service quality in this market. In Bangladesh, for instance, Khan et al. (2020) found that consumers were happier with mobile banking services that worked well, with less errors, less bugs in the mobile applications, and smooth operation. Bala et al. (2021) also discovered that during the COVID-19 outbreak in rural Bangladesh, reliability, responsiveness, and efficiency have a big effect on consumer satisfaction. These results show that making sure that service delivery is reliable is very important for improving how people think about the quality of service in this industry.

H2*: Reliability has a positive effect on the service quality of mobile financial services.*

3.3 Responsiveness and Service Quality

Parasuraman et al. (1988) stated that responsiveness is one of the parts of the SERVQUAL model. This usually means how fast, quickly, and effectively service providers can help their customers with their problems. Being responsive in the space of Mobile Financial Services (MFS) involves being able to serve consumers properly, fix problems as soon as possible, and complete transactions with no error, all these things at the same time. Many research studies also showed that how quickly a company responds to customers has a big impact and effect on how they actually feel about the quality of service in the MFS arena. For example, Khan et al. (2020) found that clients in Bangladesh were happier with mobile banking services that were very quick to respond. In the research article of Uddin (2023), it was also shown that responsiveness, reliability, and assurance had the biggest effect on how satisfied customers were with mobile banking services in Bangladesh. These results show us that to increase the quality of service in this industry, it is important to make sure that services are delivered quickly.

H3: *Responsiveness has a positive effect on the service quality of mobile financial services.*

3.4 Assurance and Service Quality

Parasuraman et al. (1988) tried to demonstrate that one of the most important aspects of the SERVQUAL model is assurance, which means the knowledge, politeness, and ability of staff to inspire confidence and trust in the consumers or potential consumers. Assurance in the context of Mobile Financial Services (MFS) means the competence of service providers, the safety of transactions, or we can say the guarantee of the best quality of services, and the ability to provide users with faith in the management and the employees with their financial data. In this industry, many research studies shows us that assurance has a major and big impact on how consumers perceive the quality of service. In our case of mobile banking services in Bangladesh, for example, Uddin (2023) discovered and demonstrated a correlation between the assurance dimension and customer happiness. The same holds true for mobile banking services in Bangladesh; according to Khan et al. (2020), client satisfaction is vastly and greatly impacted by assurance, responsiveness, and reliability. According to these unique results, improving this industry's perceived service quality needs guaranteeing promised service delivery.

H4*: Assurance has a positive effect on the service quality of mobile financial services.*

3.5 Empathy and Service Quality

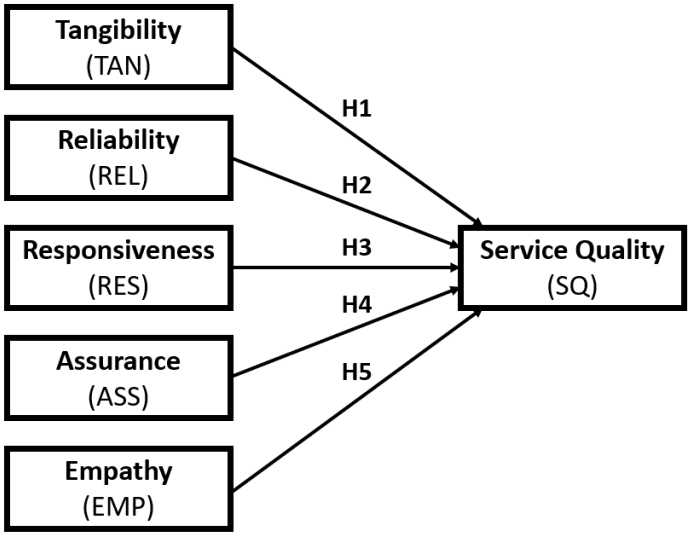
Empathy is an important part of our chosen model in this study. It means giving consumers personalized care and special attention to their needs and problems (Parasuraman et al., 1988). In this industry, empathy is mainly knowing what customers want, giving them personalized services, and showing that the company or brand really cares about their well-being. Many studies have shown that empathy has a big effect on how customers think about the quality of service in this sector. Let us see an example, Yusuf et al. (2024) observed and explained that in the banking industry in Bangladesh, the empathy factor of their study was linked to higher customer satisfaction. In the same way, Uddin (2023) found that empathy, reliability, and responsiveness had a big impact on how satisfied customers are with MFS platforms in Bangladesh. These results show us that showing empathy to the consumer while providing service is very important for improving how people think about the quality of service in this industry.

H5*: Empathy has a positive effect on the service quality of mobile financial services.*

3.6 Research Framework

The research framework or conceptual framework for this study is based on the SERVQUAL model developed by Parasuraman et al. (1988). This study has five main elements of service quality parameters that are identified: responsiveness, tangibility, reliability, assurance, and empathy. In our study, we are using these five aspects as independent variables. The dependent variable is the service quality, which is determined by these five factors. In our research, we did not modify the framework; we are using the exact same model that was proposed by the respective author (Figure 1).

Figure 1: Research Framework



Source: Author's Compilation.

Each SERVQUAL dimension is hypothesized to have a positive effect on service quality (H1–H5), the research framework, therefore, illustrates how service quality components contribute to quality service in the Mobile Financial Services (MFS) sector in Bangladesh.

4. Research Methodology

4.1 Data and Sampling

This study's target group is people in Bangladesh who use Mobile Financial Services (MFS) on a regular basis. Some examples of MFS are bKash, Rocket, and Nagad. People utilize these services a lot for financial operations, including paying bills, sending money, and making payments on their phones. The total number of MFS users in Bangladesh is always changing and not known for sure, so this study uses a non-probability convenience sampling method. This is a common way to do exploratory research when the target population is hard to define or reach (Etikan et al., 2016; Hair et al., 2011). Structured questionnaires were sent out online to collect information. There were 231 valid responses that were looked at for analysis. We chose the responders based on their availability and willingness to take part, making sure that they had already used MFS platforms before. Because Partial Least Squares Structural Equation Modeling (PLS-SEM) was utilized to test the hypothesis, the sample size of 231 is statistically valid. Hair et al. (2011) say that for PLS-SEM, the sample size should be at least ten times the maximum number of structural routes that lead to any construct in the model. There were four items for each of the five SERVQUAL categories (Tangibility, Reliability, Responsiveness, Assurance, and Empathy) and three items for the dependent variable (Quality of Service). Goodboy and Kline (2017) say that a sample size of more than 200 is enough for PLS-SEM to make sure that the path estimates are trustworthy and that the statistical power is strong, especially in behavioral science research. So, the sample size of 231 fits these requirements and backs up the testing of the structural model. When there are time, price, or accessibility limits for respondents, convenience sampling is a good alternative for studies in the mobile financial and service quality field (Hair et al., 2011). This method isn't very generalizable, but it lets researchers collect useful information quickly from a real-world group of people in the target population. This is very important for applied business research in emerging markets like Bangladesh.

4.2 Measurement Instrument

We designed a structured questionnaire using measuring scales that had already been tested to meet the goals of this research. The questionnaire had sections for each of our chosen model's constructs, which are Tangibility, Reliability, Responsiveness, Assurance, and Empathy. We also have a section for Service Quality, which was the dependent variable in the research model. We mainly chose four items to measure each SERVQUAL dimension. These items were based on the well-known scale created by Parasuraman et al. (1988) and improved in other studies of service quality (Ladhari, 2009). We made some small changes and adjustments to the measurement items in the survey to make sure they were relevant to the situation of mobile financial services and relatable to the consumers in Bangladesh, and that the people answering them could easily understand and answer them. We used three items for our dependent variable, which is service quality that were based on research on service quality in digital and financial services (Caruana, 2002; Ayo et al., 2016). We used a 5-point Likert scale to rate all of the items, with 1 being "Strongly Disagree" to 5 being "Strongly Agree." Many scholars in the social sciences often use this kind of measurement scale to evaluate how people feel about something (Joshi et al., 2015). Usage of multi-item constructs makes the measurements more reliable, logical, and valid, making sure that the data collected appropriately reflects the theoretical constructs being examined (Hair et al., 2011). Some previous studies have demonstrated that using the SERVQUAL model to evaluate the quality of financial services is a good way to do it (Kang & James, 2004).

4.3 Data Analysis Technique

Our research used some statistical methods to examine and evaluate the data and see if the theory and research framework were correct. The analysis was done using the SmartPLS 4 computer software, which is a statistical measurement software. To evaluate the structural model and measurement model, SmartPLS 4 was used in conjunction with Partial Least Squares Structural Equation Modeling (PLS-SEM). According to Hair et al. (2011) and Sarstedt et al. (2014), PLS-SEM is very best suited for exploratory researches which have small sample sizes and a non-normally distributed dataset. We used PLS-SEM because our study had 231 responses from mostly young and well-educated people and latent components with reflective indicators. Convergent validity, discriminant validity, construct reliability, and indicator reliability all were checked to ensure the measurement model was reliable, logical, and sound. Composite reliability and Cronbach's alpha were properly utilized to evaluate internal consistency, and convergent validity was also confirmed using Average Variance Extracted (AVE) (Fornell & Larcker, 1981). We calculated the Heterotrait-Monotrait Ratio (HTMT) and the Fornell-Larcker criterion to evaluate the discriminant validity (Henseler et al., 2015). In order to test and examine our proposed hypotheses, the structural model was evaluated once the measurement model had been validated. For this analysis, we used a bootstrapping method using 5,000 subsamples to estimate path coefficients, t-statistics, and p-values of our elements. By using this system, we strengthened the model's resilience and increased confidence in the results obtained from the empirical data we collected from the survey. The inclusion of several latent constructs in the model necessitates a robust, solid, and versatile estimation strategy. So, PLS-SEM was proved to us to be the most appropriate choice (Hair et al., 2019).

5. Data Analysis & Findings

5.1 Respondents' Profile

Our study received responses from 231 people to look into how people in Bangladesh feel and think about the quality of service in Mobile Financial Services platforms. The demographic distribution showed us important information about the people who utilize these digital or online services for banking. Most of the people who took part were between the ages of 25 and 34, which made up almost 71% of the total people. This shows that the people who utilize the Mobile Financial Services platforms the most are young individuals who are just starting to work or have just finished university. This seems like the platform has a large number of younger users, likely students, since 21% of the respondents were in the age group of 18 to 24. Users in the 35–44 age group represented 6% of the overall population, and users in the 45+ age range for 1% of the total, indicating that the platform did not attract many people who were retirees or older (Table 1). A total of 64% male respondents and 36% female respondents, according to the sample's gender profile. As a result, it appears that the utilization and acceptance of MFS systems are tilted toward men. This could be because of social or economic issues in Bangladesh that make it harder for women to get digital financial services. Regarding education, the sample was highly educated. Nearly half of the respondents (48%) had completed a Master's degree or higher, and another 45% held a Bachelor's degree (Honors Passed). A smaller segment of the sample had attained education at the HSC (5%) or SSC (1%) level. This education profile shows that those with greater levels of education are more likely to utilize MFS platforms. This could be because they are more digitally literate and have better access to mobile and financial technology. The overwhelming majority of respondents (94%) said that bKash was their favorite MFS platform. This fits with bKash's status as the top mobile financial service provider in Bangladesh. Nagad was the second most popular platform, but only 4% of users said it was their main service provider. Rocket and other platforms were used by just 1% each, highlighting a limited presence compared to bKash. The research demonstrates that MFS has become a regular element of how people handle their money. More than half of the people who answered (51%) said they used MFS platforms several times a week, and 13% said they used them every day. That many people were using them is evident from this. Among those who took the survey, 21% said they used it weekly, while 13% stated monthly. Fewer than three percent of respondents indicated they seldom used MFS platforms. This indicates that these services are an integral and regular component of most people's financial lives. In Bangladesh, the average The Mobile Financial Services user is a young man with a university degree who uses bKash and other online payment methods frequently. They are either a student or an industry employee. If service providers want to meet the needs of their main clients, they need the information that this profile delivers to them.

Table 1: Demographic Profile of the Respondents

		Frequency (N= 231)	Percent
Age Level	18-24	48	21
	25-34	165	71
	35-44	15	6
	45+	3	1
Gender	Male	147	64
	Female	84	36
	Master's degree or higher	111	48

Level of Education	Bachelor's degree (Honors Passed)	105	45
	Higher secondary education (HSC Passed)	12	5
	Secondary education (SSC Passed)	3	1
Occupation	Unemployed	18	8
	Student	90	39
	Service holder (public/private)	111	48
	Homemaker	3	1
	Business owner	3	1
	Freelancer	6	3
Most Used Mobile Financial Service (MFS) Platform	bKash	216	94
	Nagad	9	4
	Rocket	3	1
	Others	3	1
Frequency of the usage of the MFS Platforms	Daily	30	13
	Several times a week	117	51
	Weekly	48	21
	Monthly	30	13
	Rarely	6	3

Source: Author's Computation.

5.2 Measurement Model

The measuring model shows how quantifiable indicators can show latent constructs that can't be seen directly. It makes sure that these indicators appropriately represent the ideas being examined (Hair et al., 2019). It wants to find a way to measure and prove a theoretical idea or trait that can't be seen immediately. For assessing the data, we look at both convergent validity and discriminant validity.

5.2.1 Convergent Validity

The term "convergent validity" in PLS-SEM means the extent to which signals effectively represent the latent construct that the signals were designed to analyze. Item loadings, Cronbach's Alpha (CA), Composite Reliability (CR), and Average Variance Extracted (AVE) are used to verify this, according to Hair et al. (2022). In the current measurement model, all constructs show proper convergent validity. The majority of the item loadings are above the required level of 0.70, although a few items (such as REL2 = 0.614 and TAN4 = 0.792) are still acceptable because they are beyond 0.60. The AVE values for all constructs are greater than the requisite of 0.50, with values ranging from 0.636 to 0.789. This means that the constructs capture a lot of variance from their indicators. The Composite Reliability (CR) values (both rho_a and rho_c) are within 0.856 and 0.937, which is much greater than the recommended value of 0.70. This means that the data seems fairly consistent. The Cronbach's Alpha (CA) numbers, which range from 0.815 to 0.911, are higher compared to the 0.70 threshold. The findings demonstrate that the measurement theory is appropriate, as all of the model's constructs—Tangibility, Reliability, Responsiveness, Assurance, Empathy, and Service Quality—are very consistent and convergent (Hair et al., 2022; Henseler et al., 2009) (Table 2).

Table 2: Item Loading, Convergent Validity and Reliability

	Items	Loading Values	CA	CR (rho_a)	CR (rho_c)	AVE
Tangibility (TAN)	TAN1	0.91	0.901	0.917	0.931	0.771
	TAN2	0.895				
	TAN3	0.911				
	TAN4	0.792				
Reliability (REL)	REL1	0.896	0.815	0.917	0.872	0.636
	REL2	0.614				
	REL3	0.894				
	REL4	0.751				
Responsiveness (RES)	RES1	0.863	0.877	0.877	0.915	0.73
	RES2	0.881				
	RES3	0.839				
	RES4	0.834				
Assurance (ASS)	ASS1	0.871	0.874	0.88	0.914	0.727
	ASS2	0.889				
	ASS3	0.839				
	ASS4	0.809				
Empathy (EMP)	EMP1	0.89	0.911	0.912	0.937	0.789
	EMP2	0.893				
	EMP3	0.871				
	EMP4	0.899				
Service Quality (SQ)	SQ1	0.901	0.851	0.856	0.91	0.771
	SQ2	0.878				
	SQ3	0.854				

Source: Author's Computation.

5.2.2 Discriminant Validity

Hair et al. (2022) stated in their study that discriminant validity is the level to which something is actually different and unique from other constructs in both a conceptual and statistical sense. One important and significant part of the construct validity is that it includes being sure and confirming that each construct is measuring what it is intended to measure and not measuring another factor that may be similar. Scholars and researchers use discriminant validity to make sure and confirm that their constructs are different from one another and not too connected to other variables. Fornell and Larcker (1981) in their study suggested a widely known and accepted way to check discriminant validity, which is that the square root of the Average Variance Extracted (AVE) for each construct should be higher than its correlation coefficients with other constructs. This strategy lets researchers and scholars to check that each construct has greater variance with its own indicators than with indicators of other constructs. We can see the diagonal numbers in Table 3 shows us the square root of the AVE for each construct which are ASS (0.852), EMP (0.888), REL (0.797), RES (0.854), SQ (0.878), and TAN (0.878). The inter-construct correlation coefficients given below the diagonal are used to compare these values. The correlation between ASS and EMP (0.246), REL and SQ (0.514), RES and TAN (0.353), and other off-diagonal values are all smaller than the square root of AVE for their

respective constructions. This pattern shows us that the constructs have more shared variance with each other than with other constructs, which proves and validates that discriminant validity exists. All of the constructs in the table match the Fornell-Larcker criterion for discriminant validity, which means that they are statistically different, unique, and measured correctly without too much overlap.

Table 3: Correlations among the Constructs (Fornell and Larker Test)

	ASS	EMP	REL	RES	SQ	TAN
ASS	**0.852**					
EMP	0.246	**0.888**				
REL	0.326	0.041	**0.797**			
RES	0.361	0.342	0.277	**0.854**		
SQ	0.435	0.398	0.514	0.44	**0.878**	
TAN	0.361	0.248	0.396	0.353	0.538	**0.878**

Source: Author's Computation.

Henseler et al. (2015) stated in their study that the Heterotrait-Monotrait ratio (HTMT) is a very new, dependable, and reliable way to validate the discriminant validity of latent components in structural equation modeling. Discriminant validity makes sure that each aspect of the model is actually unique and different from the others. This is also very important for a correct, valid, and beneficial structural model assessment. Hair et al. (2019) and Kline (2023) showed in their study that the HTMT value should be less than 0.85 to show that the discriminant validity is satisfactory and acceptable. According to the HTMT values in the table, all pairwise comparisons between the constructs ASS, EMP, REL, RES, SQ, and TAN are below the advised threshold. The HTMT values between ASS and EMP (0.276), ASS and REL (0.364), ASS and RES (0.413), ASS and SQ (0.502), and ASS and TAN (0.412) are all less than 0.85, for example. In the identical way, additional inter-construct values, including EMP and REL (0.117), EMP and RES (0.382), EMP and SQ (0.452), EMP and TAN (0.277), and so on, stay below the important number. The greatest HTMT value found is 0.607 between SQ and TAN, which is still within the range of what is acceptable for discriminant validity. So, we can argue that the constructs in the model have enough discriminant validity. This shows that the measurement model matches reality and can be used to look more closely at the structural links within the variables (Table 4).

Table 4: Heterotrait Monotrait (HTMT) Ratio

	ASS	EMP	REL	RES	SQ	TAN
ASS						
EMP	0.276					
REL	0.364	0.117				
RES	0.413	0.382	0.302			
SQ	0.502	0.452	0.554	0.507		
TAN	0.412	0.277	0.395	0.407	0.607	

Source: Author's Computation.

5.3 Structural Model

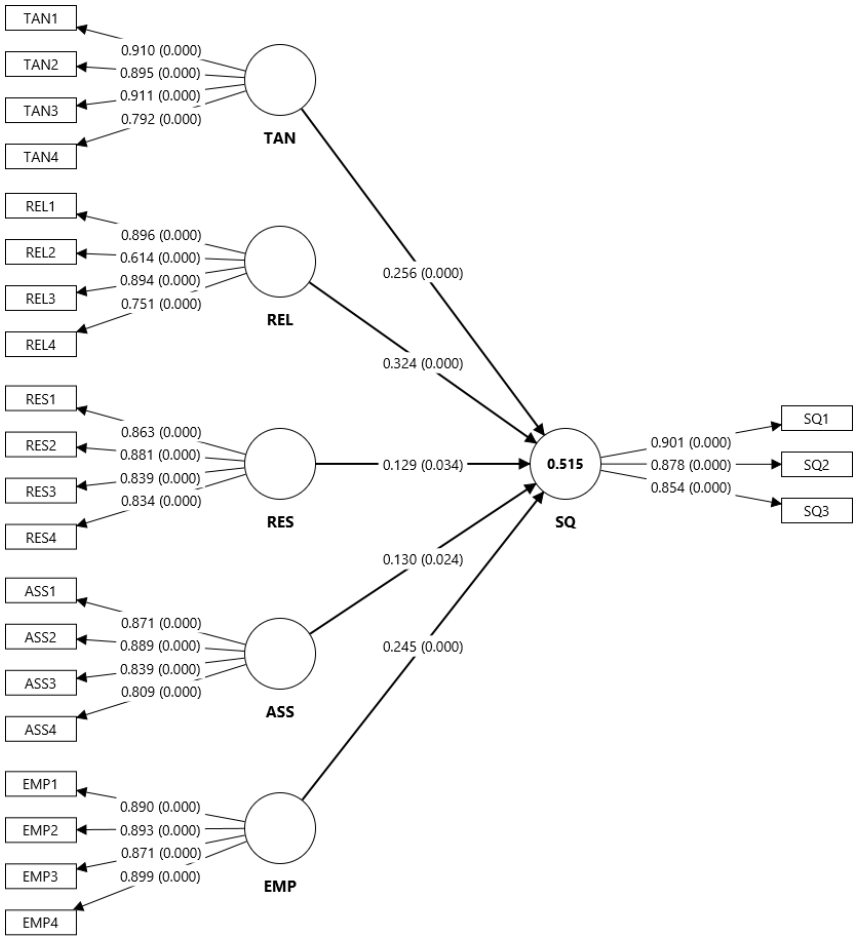
The structural model outlines the relationships between constructs, which are derived by estimating a series of regression equations (Purwanto, 2021). The corresponding β values, standard deviations, t-values, and p-values for all variables are presented in the three tables below. The p-value indicates the significance of the hypothesized relationships among the independent variables, mediating variable, and dependent variable. The β coefficient indicates how significantly the dependent variable varies when the independent variable changes. If the p-value is less than 0.05 ($p < .05$), it means that there is a significant association between the two variables. The path coefficient analysis in Table 5 shows the findings of the hypothesized correlations between the independent variables (TAN, REL, RES, ASS, EMP) and the dependent variable (SQ). All five hypotheses (H1 to H5) are supported by statistics, which means that each of the five dimensions has a significant positive effect on service quality (SQ). In particular, hypothesis H1 appears at a connection between Tangibles (TAN) and Service Quality (SQ). This is backed up by a path coefficient (β) of 0.256, a standard deviation of 0.053, a t-statistic of 4.804, and a p-value of 0.000. The result is of statistical importance because the p-value is less than 0.05 and the t-statistic is greater than 1.96. In the same way, hypothesis H2 looks at how Reliability (REL) impacts Service Quality. It has the largest effect of all the predictors, with a β of 0.324, a t-statistic of 6.504, and a p-value of 0.000, which indicates a positive effect. Hypothesis H3 looks into how Responsiveness (RES) affects Service Quality. It finds that it has a positive, negligible effect ($\beta = 0.129$), but it is still important with a t-statistic of 2.125 and a p-value of 0.034. This means that even though RES has the smallest effect size, it still has a statistically significant effect on service quality. Hypothesis H4 likewise supports the link between Assurance (ASS) and Service Quality, with a β value of 0.130, a t-statistic of 2.254, and a p-value of 0.024. This suggests that certainty, which is typically linked to staff's competence and politeness, is an important factor in how people think about the quality of service. Lastly, hypothesis H5 looks at how Empathy (EMP) affects Service Quality. This is highly supported by a β of 0.245, a t-statistic of 4.446, and a p-value of 0.000. The result shows us that all of the aspects importantly impact the quality of service because the t-statistics are quite strong (higher than 1.96) and the p-values are very minimal (less than 0.05), we can trust the model from this observation and there is an important statistical connection between the factors that influence customers' perceptions of service quality and factors like tangibility, reliability, responsiveness, assurance, and empathy. To improve mobile financial services, these findings will be very useful for further research on the same structural model.

Table 5: Path Analysis

Hypothesis	Paths	β, Original sample (O)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	Decision
H1	TAN -> SQ	0.256	0.053	4.804	0.000	Supported
H2	REL -> SQ	0.324	0.05	6.504	0.000	Supported
H3	RES -> SQ	0.129	0.061	2.125	0.034	Supported
H4	ASS -> SQ	0.13	0.058	2.254	0.024	Supported
H5	EMP -> SQ	0.245	0.055	4.446	0.000	Supported

Source: Author's Computation.

Figure 2: Result of Path Coefficient with p-value and R-square of SQ



Source: Author's Computation.

The R Square value for the SQ (Service Quality) variable is 0.515, according to Table 6. The R-squared value, which also goes by the name the coefficient of determination, shows the extent to which the dependent variable's variance can be explained by the independent variables in the model (Field, 2024). Hair et al. (2019) and Henseler et al. (2009) say that R Square values of 0.75, 0.50, and 0.25 represent significant, mild, and poor levels of accuracy in prediction, correspondingly. So, a R Square value of 0.515 means that the predictor variables related to SQ demonstrate about 51.5% of the change in the dependent variable. This shows that the chosen independent variables have a major and significant effect on the dependent variable, but not overpowering. The result shows how important the model's predictors are for explaining changes in the dependent construct. It also shows that looking into other factors that may have an effect could make the model better at estimating (Figure 2).

Table 6: R-Square

	R-square
SQ	0.515

Source: Author's Computation.

6. Discussion of Findings

The aim of the present research was to find out more about how people in Bangladesh make use of and evaluate mobile financial services (MFS). As MFS evolves increasingly popular, it's important that we understand what users are really concerned about when they consider the standard of these services. The primary objective of this research was to look into how five important factors—Tangibility, Reliability, Responsiveness, Assurance, and Empathy—affect how users evaluate the quality of a service as an entire thing. SERVQUAL is an established framework that helps quantify the quality of service in a number of fields. These five elements derive from it. The study used this approach to look at the MFS industry in Bangladesh to find out which of these areas had the most effect on how users rate the quality of the service they get. The goal was not only to test whether these factors matter but also to see which one matters the most.

6.1 Tangibility

From the findings, we see that tangibility plays a meaningful role in shaping users' perception of service quality. In other words, when the app looks well-designed and runs smoothly, people are more likely to trust it and enjoy using it. If a mobile financial service has a clear layout, visually appealing design, and feels modern, users are more confident that the company behind it is reliable and professional. This matters because even though people may be using the app for serious financial tasks, their first impression often comes from what they see and how easy the app is to use. The results clearly show that tangibility has a strong positive effect on service quality. This means service providers should pay close attention to the user interface and overall design of their app. A well-designed, user-friendly experience not only makes tasks easier for users but also increases their satisfaction and trust. It's not just about looking good—it's about building confidence and providing a smooth, comfortable experience that users can count on.

6.2 Reliability

From the study's findings, reliability had the strongest positive effect on service quality out of all five factors. This shows that people care deeply about whether the service consistently works as expected. For example, if someone is sending money to a family member, they want to be sure it reaches them quickly and without errors. Even a small mistake or delay can create stress and reduce confidence in the platform. That's why reliability stands out—it builds trust, and trust is essential when dealing with people's finances. Because of this strong connection, mobile financial service providers in Bangladesh should focus on improving system stability, reducing transaction errors, and ensuring smooth service around the clock. Users want to feel secure knowing that the app will work the same way every time they use it. When a service is reliable, it not only meets customer expectations but also builds long-term loyalty.

6.3 Responsiveness

The study found that responsiveness does have a positive effect on service quality, even though its impact was smaller compared to other factors like reliability and tangibility. This still means it plays an important role. When users face problems, they expect quick solutions. If they have to wait too long for help, or if their issues aren't resolved properly, their trust in the service drops—even if the rest of the app works well. So, while it may not be the biggest factor, responsiveness still matters a lot. For many users in Bangladesh, having fast and clear communication from the service provider can make a big difference in how they feel about using the platform. Companies that want to improve their overall service quality should invest in better customer support systems, such as live chat, helpful call centers, or in-app help

features. A prompt and respectful response helps users feel valued and cared for, which leads to greater satisfaction and continued use of the service.

6.4 Assurance

The study found that assurance improved the quality of service. Even if it wasn't the most important component, it still had a big impact. Individuals are happier to use a service if they think the people who run it are competent, nice, and trustworthy. Trust is extremely important in the financial services industry; thus, this is pretty significant. People might not want to utilize the service or move to a different one if they don't think their money or data is protected. In Bangladesh, where digital financial services are still expanding, giving users a lot of faith can help them get more people to use them. Service providers can achieve this by giving their employees better training, ensuring the app has straightforward directions and security messages, and making sure users always feel secure and supported. Even minor things, like sending clear notifications to confirm transactions or answering questions in local languages, can make people feel more confident. People are more inclined to keep using and promote a service if they think it is safe and well-managed.

6.5 Empathy

The study found that empathy has a big effect on how users think about the quality of service. This proves that it really matters when businesses take the effort to be kind and helpful. For example, if a user is experiencing challenges with a transaction and the support employees patiently listen and help them fix it, it makes them trust the company and feel good about it. But a consumer may get angry and lose faith in the service if they feel like they are being ignored or rushed. In Bangladesh, many users of mobile financial services may not be highly tech-savvy, especially among older or less educated individuals. Showing empathy—like offering simple explanations, guiding them step-by-step, or providing help in their preferred language—can create a better user experience. Service providers who are kind, understanding, and willing to help customers on a personal level will stand out in a competitive market (Table 7).

6.6 Most Significant Service Quality Dimensions

One of the key goals of this study was to find out which of the five service quality dimensions (Tangibility, Reliability, Responsiveness, Assurance, and Empathy) has the greatest and most impact on how users perceive the overall quality of mobile financial services in Bangladesh. Based on the findings of the data analysis, all five dimensions were found to have a positive, related, and significant effect on service quality. However, some factors stood out more than others in terms of their strength, logic, and influence.

- Reliability emerged as the most important dimension in our study. This means that users place the highest value on how dependable the service is—whether their transactions go through accurately, the app functions smoothly without errors, and the system is consistent every time they use it. When an MFS platform is reliable, it builds the foundation and base of trust that users need to keep coming back, which will eventually increase profits for the brands and companies.
- In our study, Tangibility and empathy also had a big effect and impact on the quality of service after Reliability. Tangibility, which has to do with the app's design, how easy it is to use, and the physical support centers, can affect how sure and connected consumers are about the service itself. Empathy, or the ability of the service provider to understand

and care about each user's requirements, on the other hand, helps build a positive emotional connection that leads to loyalty and pleasure.

- From our studies, we got to know that Responsiveness and Assurance still matter, but their effects were a little smaller yet still significant. Responsiveness, or how quickly the service providers respond to their consumers' wants and problems. It is one thing that makes users feel supported. Assurance, which has to do with the service provider's knowledge, politeness, and ability to make people feel safe it also means the guarantee of the promised benefits, also helps people feel safe when they do business with them.

6.7 Policy Implications

The findings of this study show us important implications for policymakers, regulatory authorities associated with the government, and mobile financial service providers operating in Bangladesh. Primarily, the results highlight and show us the critical importance of reliability and tangibility in shaping customers' perceptions of service quality. Given that reliability—the ability to perform promised services dependably and accurately exerts the strongest influence, stakeholders should prioritize strengthening technological infrastructure and operational systems. Increasing the physical network of agents and devices, decreasing transaction errors, and guaranteeing steady system uptime will all contribute to increased customer satisfaction and trust. The usability of devices and the appearance of physical facilities are examples of tangible factors that have a significant impact. This suggests that investments in user-friendly interfaces and prominent service points can improve the overall experience. In addition to these, responsiveness, though exerting a relatively smaller effect, remains a statistically significant dimension. Therefore, efforts to improve customer support, accelerate complaint resolution, and train frontline agents in efficient communication should not be overlooked. Likewise, the dimensions of assurance and empathy, which relate to the trustworthiness and personalized attention delivered by service personnel, are crucial for securing user confidence in financial transactions. Policy measures that enforce transparent communication standards, robust data privacy protections, and customer-centric staff training can boost these aspects, thereby reinforcing user loyalty and platform reputation. The demographic makeup of users is another crucial policy lesson. According to the study, MFS platforms primarily draw young, educated men, suggesting a lack of outreach to older adults, women, and less educated demographics. National initiatives to improve digital literacy, close gender gaps, and boost rural connectivity are crucial for promoting inclusive financial access. In addition to increasing the user base, these programs will advance socioeconomic justice. Although there appears to be little competition in the MFS industry given bKash's dominant market share. Diversifying service offerings, improving quality, and lowering costs for customers may all be facilitated by fostering an equitable regulatory environment that encourages innovation and competition. Incorporating regular and systematic feedback mechanisms into MFS platforms will also allow regulators and providers to keep an eye on service quality in real time and modify policies as necessary to meet user expectations and needs.

6.8 Methodological Transparency and Bias Acknowledgement

Although this study provides us with some insightful information about how service quality is perceived in Bangladesh's mobile financial services sector, it is crucial to acknowledge and reveal certain methodological flaws and potential biases to maintain openness and improve the study's reproducibility. The demographics of the study's sample are one of its main limitations. Younger people between the ages of 18 and 34 make up the majority of the data; 64% of them are men, and the vast majority have bachelor's or master's degrees. A sampling bias is introduced by this over-representation of men and educated youth, which could restrict how

broadly the results can be applied. Notably, under-represented are the viewpoints of women, older adults, and people with less education—groups that might encounter particular difficulties when utilizing these platforms. In order to address this imbalance and get a complete and more representative picture, future research could use stratified sampling techniques or purposefully oversample these groups. Outreach efforts could also be expanded to include rural and digitally illiterate populations. In order to promote replicability and allow future researchers to expand on this work. For instance, sample items assessing reliability might ask participants to use a Likert scale to score the promptness and accuracy of transaction processing. In addition, there are some drawbacks to using self-reported data, including recall errors and social desirability bias. Although respondents' opinions might not always accurately represent the caliber of services. This restriction might be lessened, and a more comprehensive evaluation could be produced by adding operational metrics from MFS providers to survey data. Also, accurate interpretation of the results and improved reproducibility require documentation of the data collection context, including the timing, survey platform, and distribution channels. Future researchers will be better able to comprehend possible influences on respondent behavior and data quality thanks to this contextual transparency.

7. Limitations and Future Research Direction

The analysis on the quality of service in the mobile financial services industry in Bangladesh has some challenges, which are very normal to have in any research. The study mostly included young, educated, urban users, which means that it is not applicable to older, less educated, or rural people whose perspectives may be very different from those of our respondents in the survey. It only looked at how customers saw things, and it also didn't take into account things like infrastructure and personnel training from the provider side. One fact is that people submit their own personal beliefs and data, which might give rise to many biases, and only using the SERVQUAL model may miss additional important factors like trust, safety, and cost, which may be beneficial to learn more about service quality. Also, the study's cross-sectional design makes it hard and challenging to comprehend how things have evolved and changed over the years in this fast-changing field. To fill in these gaps, future research should look at more wide demographics, look at more quality parameters, look at service providers' points of view, use longitudinal approaches to make the study more long to get more information from the consumers and look at how new technologies affect things, and look at how behavior and motivation affect how engaged users are.

8. Conclusion

This study gives mobile financial service providers and policymakers who want to improve service quality in Bangladesh useful information. It shows that reliability is the most important thing that affects how customers feel, which means that providers need to make sure that transactions are processed consistently and accurately with strong technology and network infrastructure. Reliability, tangibility, and empathy are also quite important. This shows that even in a digital world, things like user-friendly interfaces and a visible brand presence, along with empathic customer assistance, can make people much happier. Responsiveness and assurance are also important, since they show how important it is to have people who are informed and polite and can quickly solve problems. These results show that businesses should spend money on effective customer care channels, including hotlines, chatbots, and in-person help, so that they can quickly deal with user issues. To get more people to use these services, policymakers may help by teaching people how to use technology and making infrastructure better, especially in rural and less-educated areas. The study shows that all five SERVQUAL dimensions—tangibility, reliability, responsiveness, assurance, and empathy—make people

think the service is better. This is especially true for young, educated people who are working or going to school. But it also shows that more research has to be done on groups that aren't well represented and other possible quality problems. In short, the results give a great basis for creating personalized plans to improve customer satisfaction and help mobile financial services grow in Bangladesh in a way that is good for the environment.

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Appendix

Table 07: Factors Evaluating the Quality of a Service

Items	Constructs and Questions
Tangibility	
TAN1	The mobile financial service applications have a user-friendly interface.
TAN2	The visual materials (e.g., app layout, notifications, icons) of the service are visually appealing.
TAN3	The service provides up-to-date features.
TAN4	The physical facilities (e.g., retail outlets, agent points) related to the mobile financial services are well-maintained.
Reliability	
REL1	The mobile financial service performs transactions accurately without errors.
REL2	The service delivers as promised (e.g., money transfers, bill payments, etc.).
REL3	I receive the same quality of service every time I use it.
REL4	The service handles problems or complaints consistently.
Responsiveness	
RES1	The service provides prompt responses to my inquiries.
RES2	Customer service is always willing to help users.
RES3	The mobile financial services provide efficient support.
RES4	Help is readily available when I face issues with the service.
Assurance	
ASS1	I feel secure while using the mobile financial services.
ASS2	The service provider appears to be knowledgeable.
ASS3	I trust the service providers to protect my financial information.
ASS4	The behavior of the service staff instills confidence in me.
Empathy	
EMP1	The mobile financial services give me personalized attention.
EMP2	The service providers understand my specific financial needs.
EMP3	The customer support staff treat me with respect.
EMP4	The service providers show genuine concern for its users' well-being.
Service Quality	
SQ1	Overall, the mobile financial services provide high-quality service.
SQ2	I believe mobile financial services are superior.
SQ3	I am satisfied with the overall performance and functionality of the services.

Source: Author's Compilation.