



Customer Satisfaction Towards Mobile Financial Services (MFS): A Systematic Case Study Of Bkash In Bangladesh Perspective

¹Maskat Sharif, ²Abdullah Al Javed, ³Shahriar Abdullah, ⁴Mohammad Elias, ⁵Renzon Daniel Cosme Pecho, ⁶Nayeem Uddin Ahmed Khan, ⁷Akba Ull Hasna Era.

¹Department of Electronics and Telecommunication Engineering, CUET, Chattogram, Bangladesh.

²Department of Electrical and Electronic Engineering, USTC, Chattogram, Bangladesh.

³Department of Civil Engineering, Lamar University, Texas, USA.

⁴Department of Electrical and Electronic Engineering, The International University of Scholars, Dhaka, Bangladesh.

⁵Department of Environmental Science and Engineering, Lima, Peru.

⁶Department of Electrical and Electronic Engineering, University of Chittagong, Chattogram, Bangladesh.

⁷Department of Philosophy, University of Chittagong, Chattogram, Bangladesh.

Cite this article: Sharif, M., Al Javed, A., Abdullah, S., Elias, M., Pecho, R.D.S., Khan, N.U.A., Hasna Era, A.U. (2024). Customer Satisfaction Towards Mobile Financial Services (MFS): A Systematic Case Study Of Bkash In Bangladesh Perspective. *International Journal of Empirical Research Methods*, 2(2), 170-178. <https://doi.org/10.59762/ijerm205275792220240705094355>

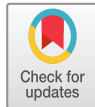
ARTICLE INFO

Article History:

Received: Jan-28-2024

Revised: April-28-2024

Accepted: May-20-2024



Corresponding Author:

Md. Maskat Sharif

Department of Electronics and Telecommunication Engineering, CUET, Chattogram, Bangladesh.

maskat.ieee@gmail.com

ABSTRACT

This study draws upon experience at bKash Limited as part of the organizational improvements, focusing on practical insights gained from the company. We chose to center the study on evaluating the Customer Satisfaction Level of bKash's Merchant Payment Facility within the broader context of "Customer Satisfaction towards Mobile Financial Services (MFS): A Study on bKash." The objective is to explain the operations of the Merchant Payment system, assess user satisfaction, and propose enhancements for improved performance. The paper highlights recommendations such as upgrading the server, enhancing communication about payment security, and reducing service charges. The prime goal of this study is to gather specific data on bKash based on the Bangladeshi perspective. While users generally express satisfaction with bKash's merchant payment service, addressing specific customer concerns identified in the survey will contribute to achieving a higher level of customer satisfaction."

Keywords: Customer satisfaction, Customer service, MFS business, bKash, Bangladesh.

1. INTRODUCTION

In this century, mobile phones emerged as the primary communication technology with a growing user base in developing nations like Bangladesh. The evolution of wireless telecommunications has provided a significant platform for business services. Globally, approaching seven billion mobile subscriptions, businesses and operators recognize the potential to connect with consumers through mobile phones (mobiThinking, 2015).

Technology plays a crucial role in reshaping the financial services industry, evident in the ongoing transformation of banking with new products, players, and channels. This revolution, spanning all banking sectors, is fueled by technology breaking geographical, legal, and industrial barriers and introducing innovative products and services. Mobile Financial Service (MFS) integrates banking with mobile wireless networks, enabling users

to conduct banking transactions such as deposits, withdrawals, and money transfers through mobile accounts (Das, et al., 2023). Typically facilitated by bank agents, these services allow mobile account holders to transact outside traditional bank branches (Bangladesh Bank, 2012). The widespread use of mobile phones in daily life presents an opportunity for the development of banking services, particularly for the unbanked population, who can access mobile phone banking services (Hosen, The ict on the education system and it's future prospects in bangladesh, 2022). The global progress of the mobile sector has created an exclusive avenue for delivering financial and social services through mobile networks (Kabir, 2013). In order to promote market growth, Mobile Financial Service was given authorization by Bangladesh Bank in July 2011. In the first instance, five banks responded favorably: Brac Bank, Dutch Bangla Bank Limited (DBBL), Islami Bank Bangladesh Limited, AB Bank, and Eastern Bank Limited. The three largest banks launched their services immediately, while the remaining two did so in early 2012. According to CGAP (2014), by the end of the first quarter of 2012, two notable banks experienced the quickest early expansion: bKash (Brac Bank) and Dutch Bangla Bank Limited (DBBL). Although more than 20 licenses for mobile financial services have been approved by the central bank, bKash Limited still accounts for more than 80% of transactions. bKash was founded in the second part of 2011, expanded to 3 million accounts by the end of 2012, and by the end of 2013, it had amassed 11 million registered accounts (Tarannum & Rasul, 2015). Additionally, the widespread adoption of mobile phones in Bangladesh, with a total of 118.493 million cell phones, contributed significantly to bKash's growth and popularity as a mobile financial service provider. "Consumer attitudes serve as both obstacles and advantages for marketers. Neglecting or discounting consumer attitudes while developing a marketing strategy ensures limited campaign success (Aziz, R, Pecho, Khan, Era, & Chowdhury, 2023). These attitudes can be obstacles when they are negative or resistant to change, hindering the acceptance of new products or messages. On the other hand, positive consumer attitudes can be advantageous, leading to higher acceptance rates and increased brand loy-

alty (Smith, 2018). Understanding and addressing these attitudes are crucial for marketers to develop effective strategies (Jones & Patel, 2020). Neglecting or discounting consumer attitudes while developing a marketing strategy ensures limited campaign success (Aziz, R, Pecho, Khan, Era, & Chowdhury, 2023). This research aims to explore consumers' attitudes toward mobile banking, particularly focusing on bKash Limited, the market's largest player. The study is practical for those researching Mobile Financial Services in Bangladesh and valuable for current and potential customers. Additionally, it holds importance for the government in acquiring information about Mobile Financial Services when needed. With a population of around 160 million in Bangladesh, only 13% have bank accounts, while over 90% are mobile phone users (World Bank, Global Findex Data Base). Over 70% reside in rural areas, facing challenges in accessing formal financial services (Bangladesh Bureau of Statistics). Despite this, there is a significant demand for such services, whether for receiving funds or utilizing financial tools for economic improvement. The use of mobile devices for financial information access and banking transactions is a relatively new service that is not yet widely accepted by mobile users (Hosen & Dhar, Impact of Construction Materials on Environment: A Case Study in Tangail District of Bangladesh, 2018). A broad and diversified environment is shown when looking at customer sentiments around mobile banking (Yesmin, Paul, & Uddin, 2018). Understanding the variables affecting consumers' acceptance or resistance to mobile banking services is critical for marketers. Because the industry is getting more and more competitive, companies need to come up with ways to draw clients in by providing improved amenities and enticing services. The primary goal of this survey is to determine how consumers feel about mobile financial services in general and bKash Limited in particular.

2. Literature Review

a) Mobile Financial Service (MFS)

MFS, often used interchangeably with mobile banking (M-banking), entails customers interacting with a bank through their mobile phones (Laukkanen, Sinkkonen, Laukkanen, & Kivijarvi, 2008). It encompasses activities like checking

account balances, reviewing transaction history, transferring funds, paying bills, conducting stock trades, managing portfolios, and even ordering insurance, all through a mobile device (Riquelme & Rios, 2010). The convergence of mobile technology and financial services is inherent in MFS or mobile banking requiring only a mobile device and network connection. Mobile payment, a subset of mobile banking, involves using a mobile device to initiate payment transactions, transferring money from a payer to a receiver, either through an intermediary or directly (Mallat, 2006, pp.17-22). Mobile devices facilitate various payment scenarios, such as digital content purchases, payments for physical goods, tickets, parking fees, transport fares, and electronic payment services for bills and invoices. Mobile banking has emerged as a significant revenue source for both banks and telecom service providers (Nysveen, Pedersen, and Thornbjørnsen, 2005, pp.330-46). Clark (2008, pp.3-27) suggests that mobile phones serve as an additional channel for consumers, offering low-cost self-service options for accessing funds, seeking banking information, transferring funds, and making payments. This banking approach allows customers to access the system anytime and anywhere. Despite its numerous advantages, the use of mobile phones in banking services is still evolving, with Internet banking maintaining its leading position in electronic banking (Laukkanen, 2007, pp.788-797).

b) Mobile Financial Services (MFS) Trend in Emerging Countries

As per the World Bank (2014), approximately 2.5 billion individuals aged fifteen and older, which is half of the global population, lack bank accounts. In emerging markets, formal banking serves around 37 percent of the population, while mobile phones have a penetration rate of 50 percent. These countries typically have one bank branch and one ATM for every 10,000 people but boast 5,100 mobile phones (Christopher, Beshouri, and Jon Gravrak, 2010). Despite almost 80 percent mobile subscriber penetration in the Philippines, only about 35 percent of the population has access to banking, leaving 21 million mobile subscribers without bank accounts. From a bank's perspective, extending basic financial services to the unbanked presents a significant market op-

portunity, both commercially and philanthropically (Saiz & Barandiaran, 2020). Although the opportunity isn't new, recent advancements in mobile technologies have made it a cost-effective delivery channel (Sanjay, 2013). Dutch Bangla-Bank Limited (DBBL) stands out as a pioneer in mobile banking for the unbanked. Launched in early 2012, DBBL's mobile banking services aimed at the unbanked and underbanked attracted over 1 million new customers within ten months. Subsequently, an average of 100,000 customers have been joining the platform each month, depositing more than \$7.75 million (Islam, 2010, pp.127-135). Mobile banking services are particularly popular in emerging markets like Mexico, Peru, South Africa, and India, where bank branches are scarce, roads are poor, and transportation options are limited. Mobile technology acts as a bridge in overcoming these challenges. Countries like China, Brazil, and Kenya have witnessed mobile banking user growth exceeding 100% in 12 months, with a Juniper Research report predicting that over 1 billion people will use mobile devices for banking by the end of 2017 (Thomas, 2010). While mobile banking transactions have shown growth in India post-launch, it still has a long way to go, as many customers prefer traditional banking methods (Ashta, 2010). Laforet and Li identified a lack of awareness and understanding as barriers to mobile banking adoption (2005, pp. 362-380). Gartner predicts that the widespread adoption of mobile devices and 3G technology will lead to the development of more sophisticated mobile banking services (2013, pp.2-47). As global economies shift towards mobile payments, it's crucial to ensure that mobile services meet the unique needs of those without bank accounts, both in developing and developed economies (Akinci, Aksoy, & Atilgan, 2004, pp.212-232). The success of mobile banking deployment by DBBL demonstrates the potential of mobile technology as a cost-effective delivery channel, and there is still ample room for further expansion. The successful model established in emerging markets for the unbanked could serve as a blueprint for developed economies to follow (Sanjay, 2013).

c) Consumers' Attitude and Perception towards Mobile Financial Service

Consumers' motivations play a crucial role in

shaping their attitudes and behaviors toward various banking technologies (Barczak, Ellen, and Pilling, 1997, pp. 131-139). Rogers (2003, p.175) identifies five perceived characteristics of innovation—relative advantage, compatibility, complexity, trialability, and observability—that influence attitudes towards innovations, providing a useful framework to assess factors influencing the adoption of mobile bank services. This framework, compared to other studies on innovation adoption, offers a comprehensive view by considering multiple predictors. Puschel and Mazzon (2010, pp. 389-409) note that predictors' influence on the criterion variable differs for mobile banking users and non-users. Ali & Bharadwaj (2010) argue that adoption hinges on customers perceiving the service as useful. Perceived usefulness, perceived risk, cost, and compatibility were identified as factors affecting consumer acceptance of M-banking. Wessels and Drennan (2010, pp. 547-568) support a mediation model where attitude transfers the effects of consumers' perceptions to their intention to use M-banking. Trust and credibility are critical in reducing the perceived risk of m-banking (Koenig-Lewis, Palmer, and Moll, 2010, pp. 410-432). Comninos et al. (2008) suggest that consumers opt for electronic transactions (online/mobile banking) only if there is convenience and security. Sharma and Singh (2009, pp.1-4) highlight Indian mobile banking users' concerns about security issues, financial fraud, account misuse, and user-friendliness issues. For consumers in developed countries, m-banking may serve as a complementary service alongside ATMs and Internet banking, emphasizing factors like convenience and ease of use. In contrast, consumers in developing countries may prioritize accessibility and affordability due to network coverage, connection quality, and costs (Donner and Tellez, 2008, pp.318-322). Laforet and Li's (2005, pp.362-380) study on online/mobile banking adoption in China reveals significant differences in user demographics, attitudes, and motivations compared to Western countries. In China, perceived risks (hackers and fraud) and technological skills are crucial factors, while convenience and free access to a range of services are less significant

3. Methodology

Research Methodology:

To determine how customers feel about mobile financial services, this study uses a qualitative, descriptive methodology. Surveys are used in data collecting to get pertinent information.

Target group:

The group this study is examining consists of Mobile Financial Service customers of BRAC Bank.

Sampling Framework:

The sample is limited to this particular geographic area since the study's focus is on the bKash sites in the Mirpur area.

Sample Approach:

A convenience sample strategy was utilized, using respondents chosen at random. Customers in need of services were surveyed at the locations of the closest mobile banking service agents.

Sample Size:

One hundred people participated in the poll.

4. Discussion

1) Bangladesh's Mobile Financial Services

Sector Financial Services Sector of Bangladesh
The concept of enhancing financial accessibility among Bangladeshis by facilitating money transfers through mobile phones has gained significant attention and interest in recent years. Individuals without formal access to traditional banking services are directly benefiting from this method, addressing their immediate financial needs and contributing to the improvement of their socio-economic conditions, including the establishment of small businesses. Policymakers and regulatory bodies are actively working to enhance the specialization and efficiency of this service on a daily basis. In the context of Bangladesh, where over 70% of the population resides in rural and semi-urban areas with limited access to formal financial facilities, the significance of mobile financial services becomes evident. It is estimated that less than 15% of Bangladeshis have conventional connections to the official banking system, leaving a considerable portion reliant on alternative means for cash transactions. Rural and remote areas, in particular, require secure and efficient financial services for seamless asset transfer over

long distances. The advent of mobile phones, as a groundbreaking technological discovery, has significantly improved communication networks worldwide. Since its introduction to Bangladesh in 1993, the mobile phone has evolved from a communication tool to a valuable instrument for quick financial transactions, addressing urgent financial needs. Currently, it is estimated that over 71% of Bangladeshis use mobile phones, with slightly over 50% utilizing them for financial transactions. Bangladesh demonstrates a high potential for Mobile Financial Services (MFS) due to the widespread adoption of mobile phones in the country.

2) Mobile Financial Services (MFS)

Any financial service that people may access and use using a mobile phone is included in the broad definition of Mobile Financial Services (MFS), according to the Alliance for Financial Inclusion (2012). These cover mobile money, banking, and payments, as well as the six basic economic operations of saving, payment, investing, transfers, credit, and security. The increased usage and functionality of smartphones have significantly heightened the demand for mobile finance (m-banking) services. This surge has prompted microfinance institutes, software houses, banks, and mobile phone operators to introduce innovative services, expand their customer base, improve operational efficiency, enhance customer retention, explore new service opportunities, and increase market share, as noted by Shaikh & Karjaluo in 2014. Several theoretical business models prove useful in the mobile financial sector. These include:

a) Regarding licensing and ownership:

In the bank-centric model, banks receive authorization to provide financial services through mobile platforms. Non-bank models mainly revolve around models created by mobile network operators (MNOs), wherein the non-bank entity holds the license.

b) Regarding functionality and operation:

The bank-led classical model is characterized by the bank being the primary driver of the product or service, leading in branding, marketing, and customer relationship management. The non-bank-led business model designates the

non-bank as the key driver of the product or service, taking the lead in branding, marketing, and customer relationship management.

3) The Emerging Market for Mobile Financial Services (MFS)

The World Bank (2014) estimates that 2.5 billion individuals do not have access to bank accounts globally. In developing nations, around 37% of people have access to formal banking services, although the rate of mobile phone adoption is almost 50%. Compared to 5,100 mobile phones, there is only one bank branch and one ATM per 10,000 inhabitants in these nations (Christopher, Beshouri, and Jon Gravrak, 2010). In the Philippines, for example, 21 million mobile users do not have a bank account, despite the country having a roughly 80% mobile user penetration rate and just around 35% banking saturation. Banks are attempting to offer financial services to this enormous untapped population after realizing how lucrative it is for them to do so. While not a brand-new chance, as global economies have recently shifted toward mobile payments, it is crucial to ensure that people without bank accounts are not left behind, emphasizing the need for mobile services that cater to their specific needs in both developing and developed economies. DBBL's success in mobile banking illustrates the immense potential in this sector, leaving ample room for further growth and innovation (Sanjay, 2013).

4) Customer Attitude and Perception toward Mobile Financial Service

Given that clients in developing countries already have access to ATMs and Internet banking, m-banking can be a beneficial service provided by financial institutions. Because of this, aspects like usability come into play when thinking about implementing m-banking. However, for customers in developing countries, the utilization of m-banking may be less about convenience and more about accessibility and affordability, taking into account network coverage and associated costs.

5) Mobile Money Merchants

The supplier and its channel partners in this industry have different roles and duties as a result of the previously outlined network expansion models. The following is a summary of these points:

a) Merchant/Agent selection & contracting:

Identifying, screening, and onboarding potential agents after gathering the necessary documentation and completing the contracting process.

b) Training & business advice:

Ensure that agents and their staff are thoroughly trained to conduct agency business, keep them informed about business optimization, and minimize fraudulent activities.

c) Liquidity management:

Rebalancing funds to address situations where there is an excess or shortage of cash compared to float

d) Branding and Service Monitoring:

Monitoring the economic performance of agents, ensuring agents adhere to relevant brand and customer service guidelines provided by the provider.

e) Commissions and Reconciliations:

Timely payment of commissions to agents, super agents, or master agents while ensuring compliance with rules and regulations.

f) Customer care:

Addressing customer and agent inquiries, handling financial reconciliation issues arising from transaction problems, incomplete contacts, and other exceptions (Ignacio Mas; Mike McCaffr , 2015).

6) Company Overview

BRAC Bank Limited and Money in Motion LLC, USA, originally formed bKash Limited, a subsidiary of BRAC Bank. The World Bank Group’s International Finance Corporation (IFC) joined the firm as an equity partner in April 2013, and the Bill &

Melinda Gates Foundation invested in it the following April (Dreher, Lang, & Richert, 2019). With a particular emphasis on servicing the low-income population by offering accessible, reasonably priced, and dependable services, bKash’s main objective is to guarantee that the people of Bangladesh have access to a wider range of financial services. With over 70% of the population residing in rural areas where formal financial services are challenging to access, bKash aims to address the needs of these individuals, whether it be receiving funds from distant loved ones or accessing financial tools for economic improvement. While less than 15% of Bangladeshis are connected to the formal banking system, over 68% own mobile phones, which bKash envisions as more than communication devices but as tools for sophisticated processing tasks. The primary purpose of bKash is to utilize mobile devices and widespread telecom networks to securely extend financial services to the underserved remote population of Bangladesh (Pranta, 2021).

7) Corporate Mission

In pursuit of broadening financial inclusivity, bKash strives to deliver financial services that are convenient, cost-effective, and dependable. The company seeks to furnish a Mobile Financial Services solution built on a highly adaptable Mobile Money platform, empowering the residents of Bangladesh to safely conduct money transactions using mobile devices.

5. Result Analysis

a) Competitor Analysis

DBBL Mobile is the primary competitor to bKash, offering similar mobile banking facilities to its customers. With 172,020 registered customers and cumulative transactions of \$11.0 Million in 2011, DBBL Mobile presents formidable competition to

Company	Agents	Customers	Cumulative Transactions	Market Share
bKash	40,000+	2.2 million	\$14.8 Million	71%
DBBL Mobile	23,974+	172,020	\$11.0 Million	24%

**Table 1:
Comparison between bKash and DBBL Mobile Banking**

bKash. Notably, DBBL Mobile has 23,974 agents and has established partnerships with insurance providers and employers for payment distribution. Services provided by DBBL Mobile encompass cash-in/out, international remittances, salary disbursement, P2P payments, mobile top-off, and bill pay.

b) SWOT Analysis

A SWOT analysis stands out as a crucial analytical tool. It has been proven over time to enable organizations to effectively respond to their surrounding changes. This analysis is vital for management, providing dynamic insights to help organizations thrive and adapt by evaluating their strengths, weaknesses, opportunities, and threats.

ecutes agent point promotions. With an extensive market presence boasting 85,000 agents, 300+ ATMs, and 1,000+ merchants nationwide, bKash’s coverage is not static but steadily expanding. This expansion is a vital aspect of bKash’s ongoing business development strategy to connect with more people. The pricing structure of bKash is both affordable and straightforward, charging customers based on the types of transactions. This competitive pricing approach positions bKash advantageously in the market.

d) Brand Exploratory

Customer Knowledge: BRAC has effectively utilized its rich history and commitment to excel-

Strength	Weakness	Opportunity	Threat
Strong Market Position	Complexity in the payment system.	A promising future with well-trained human resources.	Lack of national and global political stability.
Competent management and an active Board of Directors.	Stringent rules and regulations	Potential to diversify products.	Presence of alternative options like credit cards in the market.

**Table 2:
SWOT Analysis of bKash in Bangladesh**

c) Communications, Pricing, and Distribution of bKash

To introduce a novel service, bKash made substantial investments in above-the-line marketing, utilizing television spots, radio broadcasts, and billboards. The term “bKash” cleverly plays on words, resembling the local word for progress when spoken rapidly. bKash’s positive image is further reinforced by its widespread distribution network and cost-effective pricing. The bKash slogan, “The easiest and safest way to send or receive money instantly on your mobile, nationwide,” has become synonymous with mobile money payments. bKash’s communication strategy is characterized by simplicity, clarity, and ingenuity, featuring eight TV commercials, including a 3D advertisement, conveying messages about their services. Billboards, numbering 200 across the country, are extensively utilized, along with 200,000 square feet of wall paint in rural areas. Additionally, bKash effectively ex-

plence, combining it with innovation to emerge as the world’s most respected development organization. With a portfolio of around 18 special-purpose businesses, each expected to be responsible for its own performance, bKash aligns with this tradition. Consumers have a favorable perception of bKash, evident in its commendable performance thus far (Rafi, 2020). Additionally, bKash has cultivated positive and robust brand associations, contributing to its sustained high market growth.

e) Sources of Brand Equity

The bKash name, positioned as one of the world’s largest mobile banking service providers, stands as the company’s paramount source of brand equity. The very term “bKash” has become synonymous with mobile banking in the country. The bKash logo, a crucial element of brand equity, enjoys widespread recognition. The primary contributors to bKash’s brand equity are its functional benefits, particularly credibility, convenience, and accessi-

bility. Its extensive distribution positions it as a brand for the masses. It is reinforced by successful TV commercials portraying relatable stories, such as Sokhina, a garment worker, showcasing how bKash has simplified her life. Furthermore, bKash's corporate social responsibility initiatives, like providing computers to the Alumni Association of the History Department of Dhaka University, contribute to brand equity. Additionally, continuous partnerships with various organizations enhance brand awareness through co-branding, allowing consumers of these organizations to utilize bKash for payments (Rios & Riquelme, 2010).

f) The Customer-Based Brand Equity Pyramid (CBBE)

The bKash customer-based brand equity pyramid exhibits strength on both sides and from bottom to top. bKash boasts the highest brand awareness among mobile banking service providers, coupled with high repeat purchase rates and customer loyalty. The brand has successfully crafted a robust, distinctive, and favorable image ((CBBE), 2001).

g) Criminals target bKash dealers: Threat to Equity

In recent years, there have been numerous incidents where bKash dealers or agents fell victim to muggings, with some cases resulting in the tragic loss of life. This alarming trend poses a significant threat to the business, creating fear among the general population and escalating concerns among consumers. Relying solely on law enforcement may not suffice urging bKash to devise innovative strategies to confront this unwarranted challenge ((CBBE), 2001).

6. Conclusion

Mobile Financial Service is a relatively new concept for Bangladeshi consumers, and its development is still in its early stages. bKash's rapid expansion on a global scale has been noteworthy, yet it acknowledges that there is much work ahead to build a robust business. Key areas for improvement include stabilizing the technology platform, transitioning users from agent-based transactions to using personal accounts, and diversifying beyond payments into additional financial services. This research contributes to understanding consumer attitudes towards mobile

banking in Bangladesh and sheds light on the factors driving bKash's rapid market growth. The insights gained can benefit government policy-makers, mobile banking service providers, and practitioners in the Mobile Financial Service field

Reference

- Aziz, M. T., R. S., Pecho, R. D., Khan, N. U., Era, A. U., & Chowdhury, M. A. (2023). Calories Burnt Prediction Using Machine Learning Approach. *Current Integrative Engineering, 29-36.*
<https://doi.org/10.59762/cie570390541120231031130323>
- Bangladesh Bank. (2012). *Retrieved from <https://www.bb.org.bd/pub/annual/anreport/ar1112/index1112.php>*
- Bangladesh Bureau of Statistics [<https://bbs.gov.bd/>]
- Das, S., Mahmud, T., Islam, D., Begum, M., Barua, A., Aziz, M. T., et al. (2023). Deep Transfer Learning-Based Foot No-Ball Detection in Live Cricket Match. *Computational Intelligence and Neuroscience, 12.*
<https://doi.org/10.1155/2023/2398121>
- Dreher, A., Lang, V. F., & Richert, K. (2019). The political economy of International Finance Corporation lending. *Journal of Development Economics, 242-254.*
<https://doi.org/10.1016/j.jdeveco.2019.05.003>
- Hosen, M. S. (2022). The ict on the education system and it's future prospects in bangladesh. *AGPE The Royal Gondwana Research Journal of History, Science, Economic, Political and Social Science, 48-60.*
- Hosen, M. S., & Dhar, S. C. (2018). Impact of Construction Materials on Environ-

ment: A Case Study in Tangail District of Bangladesh. *State University of Bangladesh.*

Kabir, M. R. (2013). Factors Influencing the Usage of Mobile Banking: Incident from a Developing Country. *World Review of Business Research, 96-114.*

Keller, K. L. (2001). Building Customer-based Brand Equity: A Blueprint for Creating Strong Brands. Marketing Science Institute.

Laukkanen, T., Sinkkonen, S., Laukkanen, P., & Kivijarvi, M. (2008). Segmenting bank customers by resistance to mobile banking. *International Journal of Mobile Communications.*
<https://doi.org/10.1504/IJMC.2008.017513>

MobiThinking. (2015). Mobile hardware statistics 2014. *mobiForge.*

Pranta, A. R. (2021). Bkash Bangladesh: an innovative start for mobile financial services and its impact on long term poverty. *Institutional Repository.*

Rafi, K. S. (2020). Analysis of customer perception regarding the effectiveness of fraud and dispute management of bKash Limited. *Institutional Repository.*

Rios, R. E., & Riquelme, H. E. (2010). Sources of brand equity for online companies. *Journal of Research in Interactive Marketing.*
<https://doi.org/10.1108/17505931011070587>

Riquelme, H. E., & Rios, R. E. (2010). The moderating effect of gender in the adoption of mobile banking. *International Journal of Bank Marketing.*
<https://doi.org/10.1108/02652321011064872>

Saiz, F., & Barandiaran, I. (2020). COVID-19 Detection in Chest X-ray Images using a Deep Learning Approach. *International Journal of Interactive Multimedia and Artificial Intelligence (IJ-MAI).*

<https://doi.org/10.9781/ijimai.2020.04.003>

Tarannum, I., & Rasul, U. S. (2015). Factors Influencing 3G Internet Usage Satisfaction of Youth in Dhaka Metropolitan area. *Journal of Research in Marketing (ISSN: 2292-9355).*

<https://doi.org/10.17722/jorm.v4i3.119>

Yesmin, S., Paul, T. A., & Uddin, M. M. (2018). bKash: Revolutionizing Mobile Financial Services in Bangladesh? *Business and Management Practices in South Asia, 125-148.*
https://doi.org/10.1007/978-981-13-1399-8_6

World Bank, Global Findex database [<https://datacatalog.worldbank.org/dataset/global-financial-inclusion-global-findex-database>]

