

Digital Rise: The Evolution and Impact of e-business Systems in Bangladesh

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Abstract

The rise of e-business systems in Bangladesh marks a significant milestone in the nation's digital transformation journey. As internet penetration and mobile usage soar, businesses are increasingly embracing electronic platforms to streamline operations, expand market reach, and enhance customer experiences. This paper explores the current landscape of e-business in Bangladesh, analyzing its growth, sectors of influence, and the socioeconomic advantages it offers. This study emphasizes the need for stronger policy support, infrastructural development, and digital literacy programs to ensure inclusive and sustainable growth of the e-business sector. By highlighting both the progress and the hurdles, this paper aims to provide a comprehensive understanding of how e-business systems are reshaping the economic and social landscape of Bangladesh. The findings suggest that with strategic investments and inclusive policies, e-business can play a pivotal role in realizing the vision of a Digital Bangladesh.

Keywords: Digital Transformation, e-business Systems, Bangladesh Economy, Online Marketplaces, Mobile Financial Services, SMEs Empowerment, Digital Entrepreneurship, E-commerce Infrastructure, ICT Development, Financial Inclusion.

Introduction:

One of the most significant developments in this regard is the advent and expansion of e-business systems. This includes not only online buying and selling (e-commerce) but also supply chain management, customer relationship management (CRM), digital marketing, inventory control, and business intelligence systems. As the digital economy continues to expand, e-business has become an essential driver of innovation, efficiency, and competitiveness in both developed and developing countries. In the context of Bangladesh, the evolution of e-business systems reflects the country's growing commitment to digitization and technology-driven economic

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development. Over the past two decades, Bangladesh has made significant strides in improving digital infrastructure, expanding internet access, and fostering ICT literacy. The government's "Digital Bangladesh" initiative, launched in 2009, has been a cornerstone in promoting digital transformation across sectors. As a result, the country has witnessed an exponential rise in the use of digital platforms for commerce, education, finance, and public services. With over 130 million mobile subscribers and approximately 66% internet penetration as of 2025, a substantial portion of the population now has access to digital platforms. This has led to the rapid growth of e-commerce platforms such as Daraz, Chaldal, AjkerDeal, and Bikroy, which offer a wide range of products and services online. In parallel, mobile financial services providers like bKash, Rocket, and Nagad have enabled seamless digital transactions, especially in areas where traditional banking services are limited (Ali, 2010). To address these challenges and ensure the sustainable growth of e-business, coordinated efforts are needed from multiple stakeholders, including the government, private sector, civil society, and international partners. Policy reforms aimed at strengthening ICT infrastructure, improving digital literacy, enhancing cyber regulations, and promoting innovation-friendly ecosystems are essential. Investment in public-private partnerships and digital entrepreneurship programs can further accelerate the adoption of e-business practices, particularly among marginalized groups.

Literature Review:

Bangladesh's journey in e-business is a reflection of its broader socio-economic transformation. It represents not just a shift in how goods and services are bought and sold, but also a fundamental change in the way businesses interact with customers, manage resources, and envision growth. In a rapidly changing global economy, the ability to adapt to digital trends is no longer optional—it is imperative. For Bangladesh, embracing e-business is a step toward achieving greater economic inclusion, resilience, and competitiveness on the global stage. This paper aims to explore the current conditions, advantages, and potential of e-business systems in Bangladesh. It will examine the growth trends across different sectors, identify key drivers and barriers, and highlight how e-business is contributing to national development goals. By providing a comprehensive analysis, the study seeks to inform policy decisions and inspire further innovation in the digital business landscape of Bangladesh. In the era of globalization and rapid technological advancement, e-business has emerged as a transformative force across the globe. The integration of e-business systems has not only reshaped traditional commerce but also created new opportunities for entrepreneurs, businesses, and consumers alike.

The development of e-business systems has garnered significant scholarly attention over the past two decades as digital technologies continue to revolutionize global commerce. The body of literature surrounding e-business is broad, encompassing technological, economic, social, and policy dimensions. In the context of developing countries like Bangladesh, e-business represents a unique blend of opportunity and challenge, warranting a closer examination of existing research to better understand the landscape. Globally, e-business is often studied as a subset of the digital economy, which includes all forms of online commercial activities and ICT-enabled services. Laudon & Traver (2021) define e-business as not just online retailing, but also customer relationship management, supply chain operations, and digital transactions. Their research emphasizes how digital platforms have become essential tools for businesses to maintain competitiveness and efficiency in the 21st century.

In developing countries, e-business is considered a catalyst for inclusive economic growth. According to the World Bank (World Bank Group, 2016), e-business enables small businesses to access global markets, reduces barriers to entry, and contributes to financial inclusion. However, the adoption of such systems often depends on factors like internet accessibility, digital literacy, policy support, and infrastructure development.

Several studies highlight the rapid growth of e-business across South Asia, particularly in India and Sri Lanka, where favourable government policies, improved ICT infrastructure, and entrepreneurial ecosystems have enabled digital commerce to flourish. In India, platforms like Flipkart and Paytm have become household names, serving as case studies for digital innovation. These experiences provide a relevant framework for analyzing Bangladesh's trajectory, as both countries share similar socio-economic characteristics and face comparable challenges in rural internet penetration and regulatory capacity. In Bangladesh, research on e-business has gained momentum, particularly following the "Digital Bangladesh" initiative. The digital transformation of business practices in Bangladesh is primarily driven by increasing mobile phone usage, youth-led entrepreneurship, and policy interventions aimed at digital inclusion. Their study found that e-commerce adoption among small and medium enterprises (SMEs) is rising, but most still face limitations in technological skills and financial resources (Ali et al., 2018).

Khan et al. (2019) focused on the barriers to e-business development in Bangladesh and identified several key issues, including low trust in digital transactions, lack of regulatory frameworks, insufficient logistics support, and limited online payment options. Despite these barriers, they argue that growing consumer demand and expanding ICT coverage indicate a strong potential for digital business growth. The Bangladesh Telecommunication Regulatory Commission (BTRC) and Bangladesh Bank have also published numerous reports underscoring the expansion of digital platforms and the rapid rise of mobile financial services (MFS). The success of companies like bKash has been widely studied as a model for financial inclusion and digital innovation in a developing economy. The impact of MFS on rural economic participation shows that e-business models supported by mobile payments can significantly empower underserved populations (Ahmed et al., 2020).

This literature provides well-rounded themes of the e-business landscape in Bangladesh. While there is clear evidence of growth and innovation, several structural and systemic challenges continue to impede progress. However, with sustained investment in ICT infrastructure, inclusive policy frameworks, and capacity-building initiatives, e-business can become a powerful engine for sustainable development in Bangladesh. The literature review also reveals a need for more interdisciplinary and locally grounded research that captures the diverse experiences of e-business actors across sectors and regions. Future studies should also examine the long-term social impacts of digital commerce, including shifts in employment patterns, consumer behaviour, and urban-rural economic integration.

Methodology:

This study follows a qualitative-descriptive approach using secondary data from academic articles, government reports, and industry sources. Data were thematically analyzed to identify the current state, benefits, and challenges of e-business in Bangladesh.

The rationale of the Research:

In the age of digital transformation, e-business systems have revolutionized how businesses operate, engage with customers, and access markets. These systems encompass a range of online activities, including e-commerce, digital marketing, supply chain management, mobile financial services, and online customer support. For developing countries like Bangladesh, e-business presents not only an opportunity to improve economic growth and competitiveness but also a pathway to address social and structural challenges. The government's "Digital Bangladesh" vision has been a driving force behind the expansion of ICT infrastructure, internet penetration, and the promotion of digital literacy across the country. According to the Bangladesh Telecommunication Regulatory Commission (BTRC), as of 2024, more than 66% of the population is connected to the internet, with mobile and smartphone use rapidly increasing. This has laid a strong foundation for the growth of e-business systems in both urban and rural areas.

Despite the positive outlook, the e-business sector in Bangladesh still faces several critical challenges. Many small and medium enterprises (SMEs), which constitute the backbone of the country's economy, struggle to adopt digital platforms due to a lack of technical knowledge, inadequate funding, and limited access to training. Additionally, poor logistics networks, weak cybersecurity frameworks, and low consumer trust in online payments are major barriers to the widespread adoption of e-business. The urban-rural divide in digital literacy and internet access also contributes to inequality in participation in the digital economy. Furthermore, while platforms like Daraz, Chaldal, AjkerDeal, and bKash have pioneered e-commerce and digital finance in Bangladesh, there is limited academic research that critically analyzes their impact on socio-economic inclusion, employment generation, and market accessibility. Most existing studies focus on general ICT development or the broader digital economy, leaving a gap in context-specific research on how e-business systems affect different segments of the Bangladeshi population, especially women, youth, and rural entrepreneurs. Another important aspect is the policy and regulatory environment. While some policy initiatives exist, such as the National ICT Policy and the Startup Bangladesh initiative, the regulatory ecosystem is still underdeveloped. There is a lack of clear guidelines on digital consumer rights, data privacy, cybersecurity, and digital taxation. Without strong governance and institutional support, the growth of e-business may not be sustainable or equitable.

This research is crucial because it explores the current landscape of e-business systems in Bangladesh through a holistic lens, considering technological, economic, social, and policy-related dimensions. It aims to highlight both the strengths and weaknesses of the existing ecosystem and offer actionable recommendations to make e-business more inclusive, efficient, and sustainable. The study will contribute to academic discourse, inform policymakers, and provide insights for entrepreneurs and development practitioners working to enhance digital participation in the country. Many small businesses turned to online platforms as a survival strategy, while consumers increasingly relied on digital services for daily needs. However, whether this shift is temporary or transformative remains a question worth exploring through structured research. In this context, the present study seeks to examine the evolution, current state, advantages, and limitations of e-business systems in Bangladesh. It also aims to understand the role of digital platforms in economic empowerment and assess how the government, private sector, and civil society can collaborate to strengthen the digital business ecosystem.

Research Questions:

- i. What is the current state of e-business systems in Bangladesh, and which sectors have experienced the most significant growth?
- ii. What are the key benefits of e-business adoption for businesses, consumers, and society in the context of Bangladesh?
- iii. What challenges and barriers are preventing the widespread and inclusive adoption of e-business across the country?
- iv. How can government policies, digital infrastructure, and capacity-building initiatives be improved to support the sustainable growth of e-business in Bangladesh?

Research Objectives:

- i. To explore the present state of e-business systems in Bangladesh.
- ii. To identify the socio-economic advantages of adopting e-business.
- iii. To examine the key challenges limiting its growth and accessibility.
- iv. To suggest strategies for strengthening the digital business landscape.

Analytical Findings and Discussions

Understanding e-business Systems: E-business, or electronic business, refers to the use of Internet technologies to conduct business processes. This includes buying and selling products or services online, customer relationship management, supply chain management, and more. E-business systems encompass both front-end operations, like e-commerce platforms and back-end processes such as inventory and order management systems.

Current State of e-business in Bangladesh: Over the past decade, Bangladesh has witnessed a significant surge in digital connectivity and internet penetration. As of 2025, more than 130 million people have access to mobile phones, with around 66% internet penetration.

Potential Outcomes:

- i. **Sectoral Growth and Adoption Trends:** The retail and financial sectors have seen the most significant adoption of e-business in Bangladesh. Companies like Daraz, Chaldal, and Pickaboo have established large customer bases, while mobile financial services (MFS) such as bKash and Nagad have revolutionized personal and business transactions. Online marketplaces and food delivery platforms have gained traction, especially in urban areas. COVID-19 acted as a catalyst for a digital shift, pushing even small local businesses to use Facebook pages and delivery services.
- ii. **Socio-Economic Benefits:** The rise of e-business has increased market access for SMEs, reduced operational costs, and opened up flexible job opportunities (e.g., digital marketing, delivery, and online support services). Women entrepreneurs have also benefited by using social media and digital platforms to run businesses from home, especially in conservative regions where mobility is restricted. Digital

platforms have improved transparency and convenience in buying and selling, thus gradually shifting consumer habits toward online services.

- iii. **Challenges and Barriers:** Rural areas often lack stable internet, and many small entrepreneurs lack the digital literacy to manage online platforms. Logistic inefficiencies, high delivery costs, poor inventory systems, and a lack of trust in online transactions continue to affect customer experience. Additionally, the regulatory environment is still catching up. There is no comprehensive national e-business or e-commerce law that addresses consumer protection, cybersecurity, taxation, or dispute resolution. This weak policy foundation limits growth and exposes users to risks like fraud or data theft.
- iv. **Policy Gaps and Capacity Issues:** Government initiatives under the “Digital Bangladesh” umbrella have improved ICT infrastructure and encouraged tech-based entrepreneurship, Skill development for digital business management, Providing logistics solutions and last-mile assistance support for the needs of remote sellers and buyers, Cyber security training for small businesses and platform users, Legal frameworks for cross-border e-commerce development and growth, Public-private partnerships, enhanced digital education in schools and universities, and better digital literacy campaigns are crucial for sustaining this momentum (Rahman, A, 2023).
- v. **Inclusivity and Innovation:** A major insight from this analysis is that e-business has the potential to promote inclusive development, especially when combined with mobile banking and digital ID systems. However, innovation remains concentrated in urban centres. For broader national impact, local innovators, rural youth, and marginalized communities must be included in digital initiatives. There is also room for localized innovation, such as agro e-commerce, rural logistics platforms, and vernacular language-based platforms to improve access.

These outcomes aim to empower stakeholders—from policymakers and digital entrepreneurs to educators and development agencies—with the knowledge to build a more inclusive and effective digital economy:

- i. **Comprehensive Overview:** A clear understanding of the current state of e-business in Bangladesh, including sectoral growth, platform success, and technology adoption.
- ii. **Identification of Opportunities:** Insights into how e-business enhances entrepreneurship, job creation, digital literacy, and financial inclusion, especially among youth and women.
- iii. **Highlighting Challenges:** Documentation of structural barriers such as poor logistics, limited ICT infrastructure in rural areas, weak cybersecurity, and lack of consumer trust.
- iv. **Policy Implications:** Actionable recommendations for improving digital governance, public-private collaboration, and education/training initiatives to support sustainable digital business growth.
- v. **Roadmap for Future Research:** Identification of gaps in data, sectors, or communities where more focused or empirical research is needed.

Rural Digital Entrepreneurship and Inclusion: One of the most transformative and often underexplored outcomes of the e-business revolution in Bangladesh is the emergence of rural digital entrepreneurship. While urban areas like Dhaka and Chattogram dominate mainstream e-commerce headlines, a silent digital shift is occurring in rural and semi-urban communities. With increasing access to smartphones, mobile financial services, and social media, rural entrepreneurs—especially women—are now leveraging digital platforms to run businesses from their homes.

This trend signifies more than just commercial growth; it marks a new chapter of rural empowerment, enabling communities that were previously disconnected from formal economic systems to participate in the national and global economy. Digital business tools are removing physical and financial barriers, allowing entrepreneurs to engage in trade without needing traditional infrastructure such as storefronts, large inventories, or formal training.

Present Example with Data and Analysis: A powerful example supporting the hypothesis is the exponential rise of F-commerce (Facebook Commerce) in Bangladesh.

- i. Over 300,000 entrepreneurs are engaged in F-commerce nationwide.
- ii. Approximately 65% of F-commerce businesses are owned and operated by women, many from rural and semi-urban areas.
- iii. The F-commerce sector is experiencing an annual growth rate of 20%, with much of this expansion occurring outside traditional urban commercial zones (Mohiuddin, 2014).

For instance, consider Shahnaz, a rural woman from Rajshahi, who started selling handmade Nakshi Kantha and organic skincare items through a simple Facebook page. With consistent marketing and the use of bKash for transactions, she now earns over BDT 30,000 per month. She no longer depends on local fairs or middlemen to sell her products. Digital access has brought her directly in touch with customers from Dhaka, Sylhet, and even abroad. This example reflects a broader trend where low-cost digital tools provide powerful leverage for individuals, particularly women, to become self-reliant and entrepreneurial. It also reflects a socio-economic shift—from subsistence living to sustainable livelihood, driven by technology.

Supporting Trends and Factors:

- i. **Widespread Mobile Penetration:** According to BTRC (2024), mobile internet penetration has surpassed 66%, with significant growth in rural subscriptions due to cheaper smartphones and 4G expansion.
- ii. **Digital Payment Ecosystems:** Services like bKash, Rocket, and Nagad have become deeply integrated into rural life. More than 70% of e-commerce payments in Bangladesh are now done through mobile wallets (Ahmed et al., 2020).
- iii. **Social Media Usage:** Facebook is the most used social media platform in Bangladesh and acts as an informal e-commerce platform, especially in places with low technical literacy.
- iv. **Government Initiatives:** Under the “Digital Bangladesh” initiative, Union Digital Centres (UDCs) are providing rural citizens with basic training and access to ICT tools.

Challenges:

Although promising, this growth is not without challenges:

- i. **Lack of formal recognition:** Many F-commerce and rural businesses operate informally, making them ineligible for loans or legal protection.
- ii. **Weak logistics support:** Rural delivery systems are often unreliable, increasing cost and time for order fulfilment.
- iii. **Digital literacy gaps:** While usage is growing, many entrepreneurs still lack basic digital skills, making them vulnerable to fraud or inefficient business practices.
- iv. **Gendered barriers:** Despite high participation, rural women still face cultural restrictions and safety concerns that limit full engagement in the digital space.

The data and examples strongly support the hypothesis that e-business is fostering market access and income generation for small and rural entrepreneurs in Bangladesh. What was once a privilege of urban elites is now becoming a practical reality for individuals in remote corners of the country. With proper policy support, infrastructure development, and inclusive digital education, rural digital entrepreneurship can become a major pillar of Bangladesh's economic resilience and social progress.

Advantages of e-business in Bangladesh:

- i. **Wider Market Access:** E-business enables local entrepreneurs, especially SMEs and rural sellers, to reach national and even international markets without the need for physical stores.
- ii. **Cost Efficiency:** Online platforms help minimize operational expenses such as rent, staff salaries, and utilities. These businesses smoothly operate from home with just a smartphone and an internet connection.
- iii. **Flexibility & Convenience:** Consumers have the convenience of shopping for products at any time, day or night, while businesses benefit from operating outside of standard working hours, providing more flexible service options.
- iv. **Job Creation & Entrepreneurship:** E-business creates opportunities in tech, digital marketing, logistics, and customer service. It encourages generally youth and women to start their businesses, contributing to inclusive growth and development.
- v. **Digital Financial Inclusion:** Mobile financial services like bKash and Nagad have made online transactions accessible even to people without traditional bank accounts.
- vi. **Real-Time Data & Analytics:** Businesses can track customer behaviour, sales performance, and inventory in real-time, helping in better decision-making.
- vii. **Resilience during Crisis:** E-business played a vital role during the COVID-19 pandemic, allowing businesses and consumers to continue operations despite lockdowns.

Disadvantages of e-business in Bangladesh:

- i. **Digital Divide:** Many rural and marginalized communities still lack access to stable internet, digital literacy, and necessary devices, limiting their participation in the digital economy.
- ii. **Trust & Security Issues:** Online fraud, fake sellers, lack of product authenticity, and weak consumer protection laws reduce consumer trust in online platforms.
- iii. **Logistics Challenges:** Delivery services, especially in remote areas, face delays, high costs, and infrastructure issues, which hamper customer satisfaction and business efficiency.
- iv. **Lack of Regulatory Framework:** The absence of strong e-commerce laws and clear policies on data protection, online taxation, and consumer rights weakens the formalization of the sector.
- v. **Payment System Barriers:** Although mobile payments are growing, not all consumers are comfortable with cashless transactions, especially the older population and those unfamiliar with MFS apps.
- vi. **Market Saturation & Competition:** The ease of entering online business markets has led to overcrowding in certain sectors (e.g., fashion, beauty), making it hard for small businesses to survive or scale.
- vii. **Limited Local Language Content:** A majority of e-business platforms and interfaces are in English, which restricts accessibility for non-English-speaking users, especially in rural areas.

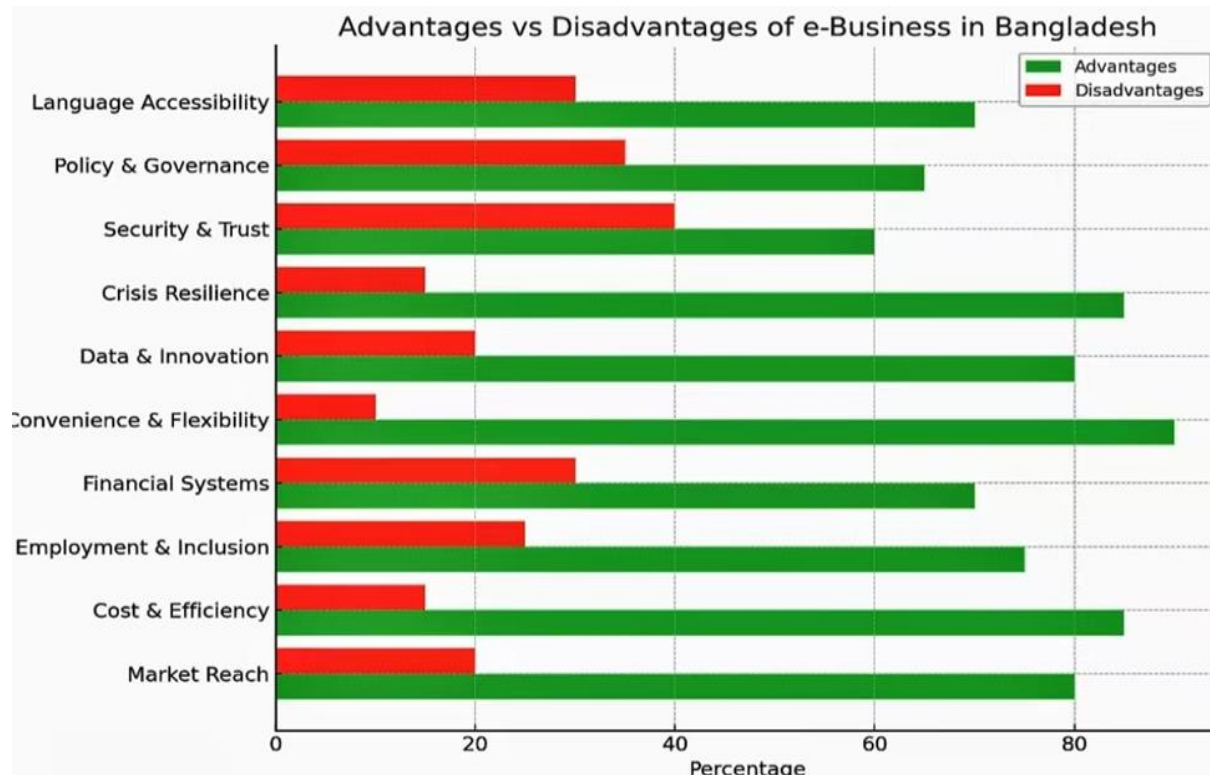


Figure 1: Advantages and Disadvantages of e-business in Bangladesh

While the advantages of e-business in Bangladesh reflect its power to democratize commerce and foster innovation, the disadvantages highlight structural and policy-related gaps that need attention. With the right investments in digital infrastructure, education, policy reforms, and support systems, the benefits of e-business can be made more inclusive and sustainable for all segments of society.

Here’s a conceptual table that visually represents the Overall Development and Growth of e-business in Bangladesh, based on this paper:

Table 1: Overall Development and Growth of e-business in Bangladesh

Year	Internet Users (Million)	e-Business Users (Millions)	Total e-business Transactions (BTD Crore)
2018	80	5	500
2019	92	8	750
2020	105	12	1,200
2021	115	20	2,000
2022	125	30	3,200
2023	135	40	4,500
2024	150 (est.)	50 (est.)	6,000

The figure below shows the bar chart of the data represented in Table 1:

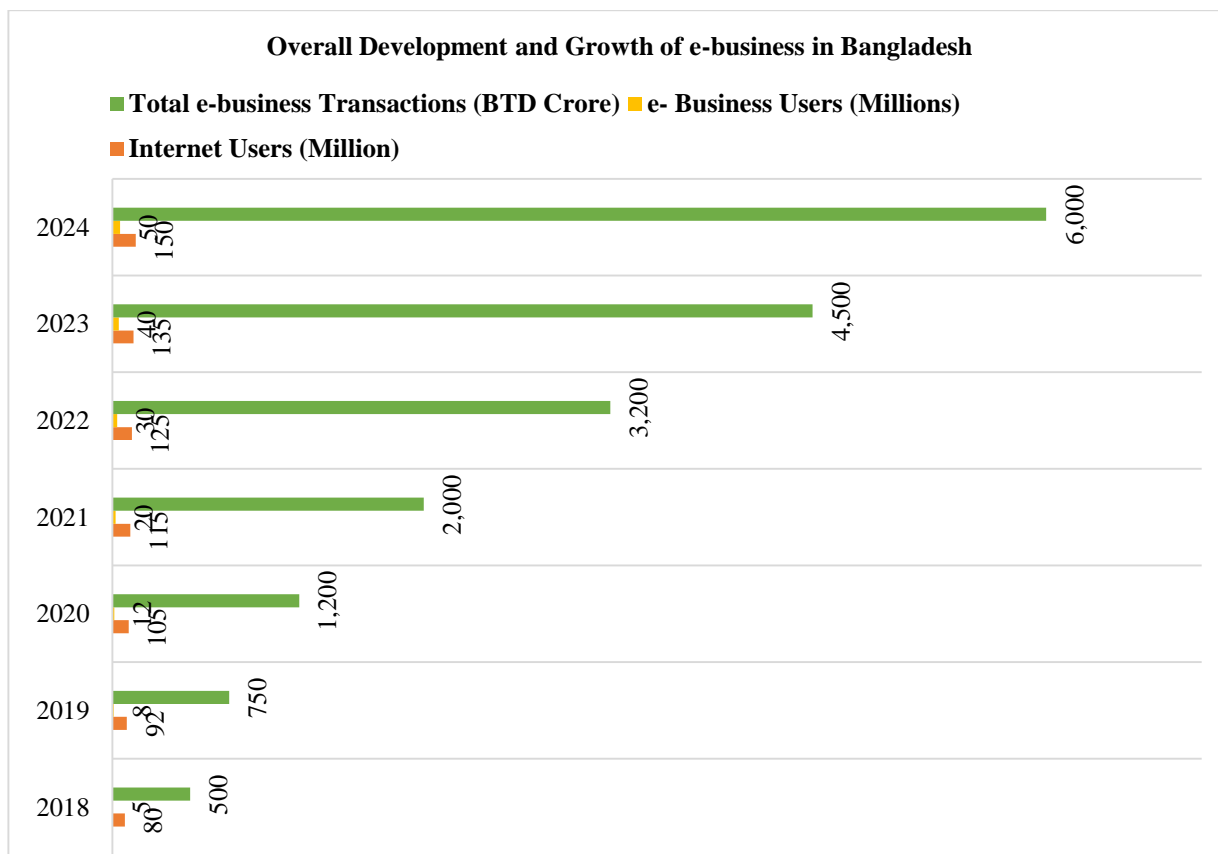


Figure 2: Bar Chart representation of Table 1

Table 2 explains the sector-wise growth in e-business:

Table 2: Sector-wise Growth in e-business

Sector	2018 (BTD Cr)	2024 (BTD Cr)	Growth %
Fashion & Lifestyle	100	1,200	1,100
Electronics	80	850	962
Food & Grocery	20	400	1,233
Health & Beauty	30	320	1,500
Education (Ed & Tech)	10	150	1,400

Table 2 data is represented in the following Figure as a bar chart:

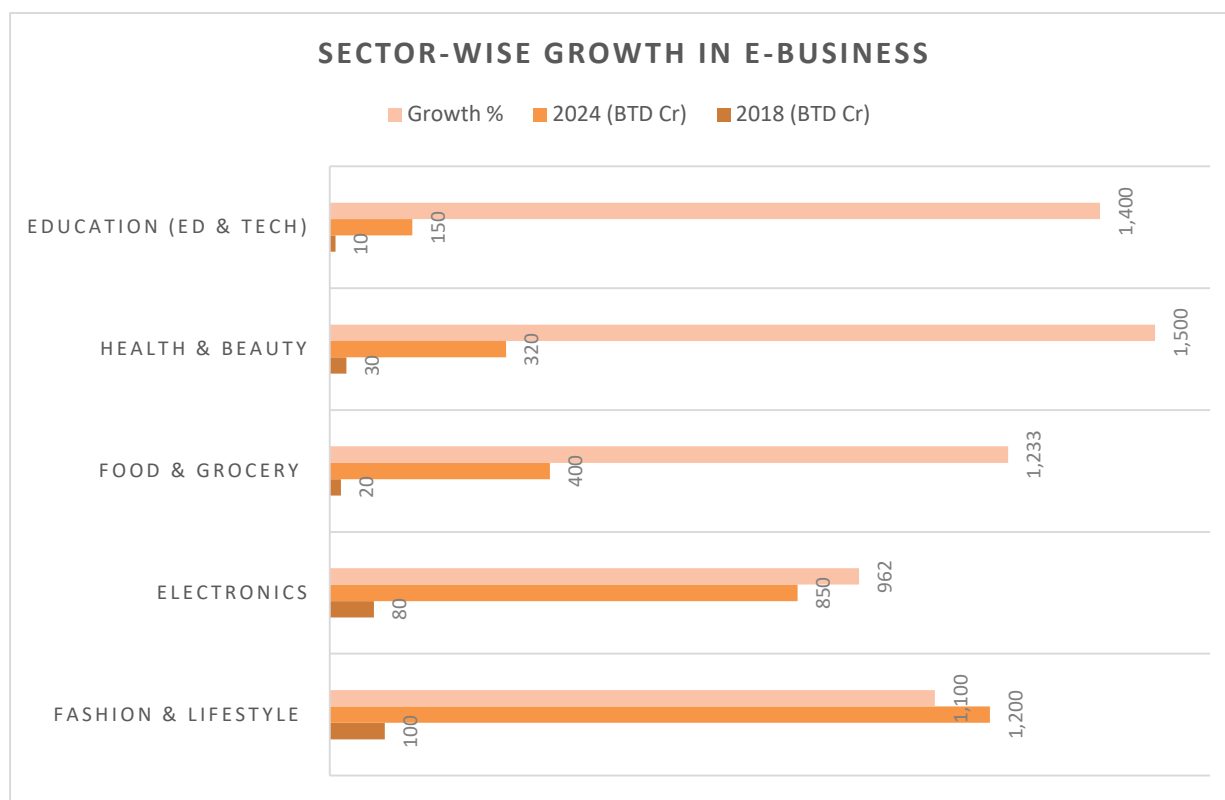


Figure 3: Sector-wise Growth in e-business

Table 3 explains the contribution of key platforms to e-business:

Table 3: Contribution of Key Platforms

Platform	Market Share %
Draz	30
Facebook Pages	25
Evaly	10
Chaldal	8
Others	27

Table 3 data is represented in the following Figure as a pie chart:

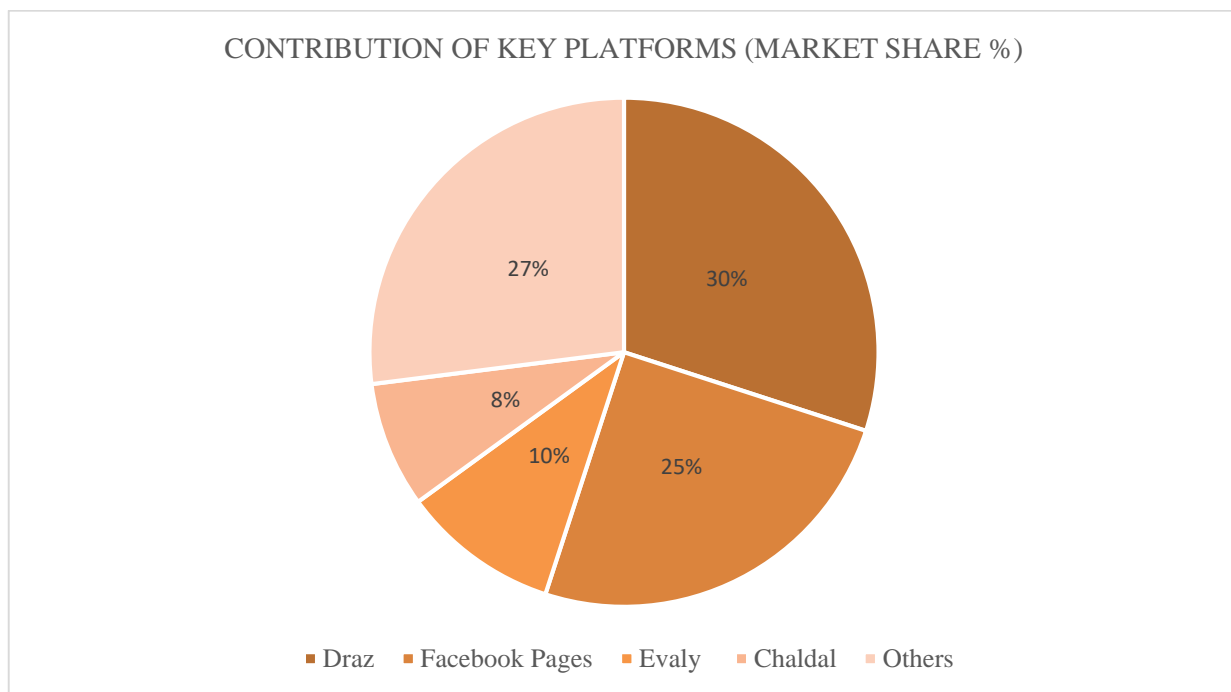


Figure 4: Contribution of Key Platforms

Stages of Growth:

- i. **Early Adoption (2010–2015):** Limited internet, Facebook-based sales.
- ii. **Acceleration Phase (2016–2019):** Entry of platforms like Daraz, bKash integration.
- iii. **Pandemic and Cashless Shift (2020–2021):** A Surge in digital transactions.
- iv. **Structured Expansion (2022–Present):** Mobile apps, logistics startups, policy reforms.

The representation of various stages of growth is as follows:

Table 4: Stages of Growth

Stage No	Stage Name	Time slot	Developments
1.	Early adoption	2010-2015	Limited internet, Facebook-based sales.
2.	Acceleration Phase	2016-2019	Entry of platforms like Daraz, bKash integration.
3.	Pandemic and Cashless Shift	2020-2021	A Surge in digital transactions.
4.	Structured Expansion	2022-Present	Mobile apps, logistics startups, and policy reforms.

While e-business in Bangladesh is progressing rapidly, it still lacks the infrastructure, regulatory backing, and inclusivity needed for sustainable transformation. By addressing digital literacy, improving trust and logistics, and creating a robust digital policy ecosystem, Bangladesh

can unlock the full potential of e-business to drive economic development, reduce inequality, and enhance global competitiveness.

Sectorial Insights: Retail, Finance, and Services: The retail sector has seen the most visible growth in e-business, with platforms like Daraz, Pickaboo, and Chaldal changing consumer behaviour and expectations. Consumer perceptions of online shopping in Bangladesh and found that convenience, competitive pricing, and wider product availability were major factors driving e-commerce adoption.

In the financial sector, digital banking and MFS have become integral to e-business development. Mobile financial platforms have increased the velocity of financial transactions and reduced the dependency on cash-based systems. This has enabled more seamless business operations, especially for informal and micro-enterprises. The education and healthcare sectors are also witnessing increased digitalization. E-learning platforms and telemedicine services are incorporating e-business models to deliver content and consultations online (Kabir et al., 2020). The COVID-19 pandemic acted as a major accelerator for these services, highlighting both their relevance and the urgent need for regulatory development and quality control (Uddin, 2021).

Digital Literacy and Inclusivity: While access to mobile devices has increased, a significant portion of the population, particularly in rural and marginalized communities, still lacks the skills necessary to effectively engage with e-business platforms. Digital literacy is not just about operating devices but also about understanding online security, financial management, and customer service (Rahman et al., 2018). Gender inclusivity is another dimension highlighted by scholars. Women's participation in digital commerce found that while many women entrepreneurs use Facebook and other social media platforms to promote their businesses, they often face additional challenges such as mobility restrictions, societal norms, and a lack of technical support (Nasrin, 2024).

Sectors Embracing E-Business Models:

- i. **Retail and E-commerce:** Platforms such as Daraz, Chaldal, and Ajker-Deal have transformed the landscape of online shopping.
- ii. **Financial Services:** Mobile financial services (MFS) like bKash, Nagad, and Rocket are enabling seamless digital transactions.
- iii. **Education and Health:** Education Tech platforms and online health consultation services are gaining momentum.
- iv. **Government and Public Services:** Digital Bangladesh initiatives have encouraged e-governance and digital service delivery.

E-business as a Catalyst for Sustainable Development in Bangladesh: The emergence and evolution of e-business in Bangladesh reflect a powerful intersection between digital innovation and sustainable development. As the country progresses toward achieving the Sustainable Development Goals (SDGs) by 2030, the growth of e-business plays a vital role in promoting economic inclusivity, reducing inequality, empowering women, and fostering environmental responsibility (Uddin & Nasrin, 2023).

E-business in Bangladesh has created a new digital marketplace that transcends traditional geographical and social boundaries. It provides opportunities for micro, small, and medium enterprises (MSMEs), rural entrepreneurs, and women-led businesses to participate in the national and global economy with minimal capital investment.

This contributes directly to SDG 8: Decent Work and Economic Growth by generating employment opportunities, especially in the informal sector, and creating new income streams.

The rise of mobile financial services like bKash, Nagad, and Rocket, along with the increasing use of mobile and internet technologies, also contributes to SDG 9: Industry, Innovation, and Infrastructure. These platforms not only enable financial inclusion but also enhance business transparency and efficiency. The digital transformation of commerce has streamlined supply chains, reduced overhead costs, and improved access to products and services, particularly in underserved rural areas, supporting SDG 10: Reduced Inequality and SDG 1: No Poverty.

Furthermore, e-business promotes SDG 5: Gender Equality by empowering women entrepreneurs to start and manage businesses from home. Through platforms like Facebook shops and women-centred marketplaces, many Bangladeshi women now contribute to household incomes, gain financial independence, and participate in decision-making processes, which were once limited due to cultural constraints.

Environmental sustainability also finds support in the e-business model. Online business operations reduce the need for physical stores, lowering energy consumption, urban traffic congestion, and carbon footprints associated with commuting and retail infrastructure. Innovations in eco-friendly packaging, digital receipts, and supply chain optimization align with SDG 12: Responsible Consumption and Production and SDG 13: Climate Action.

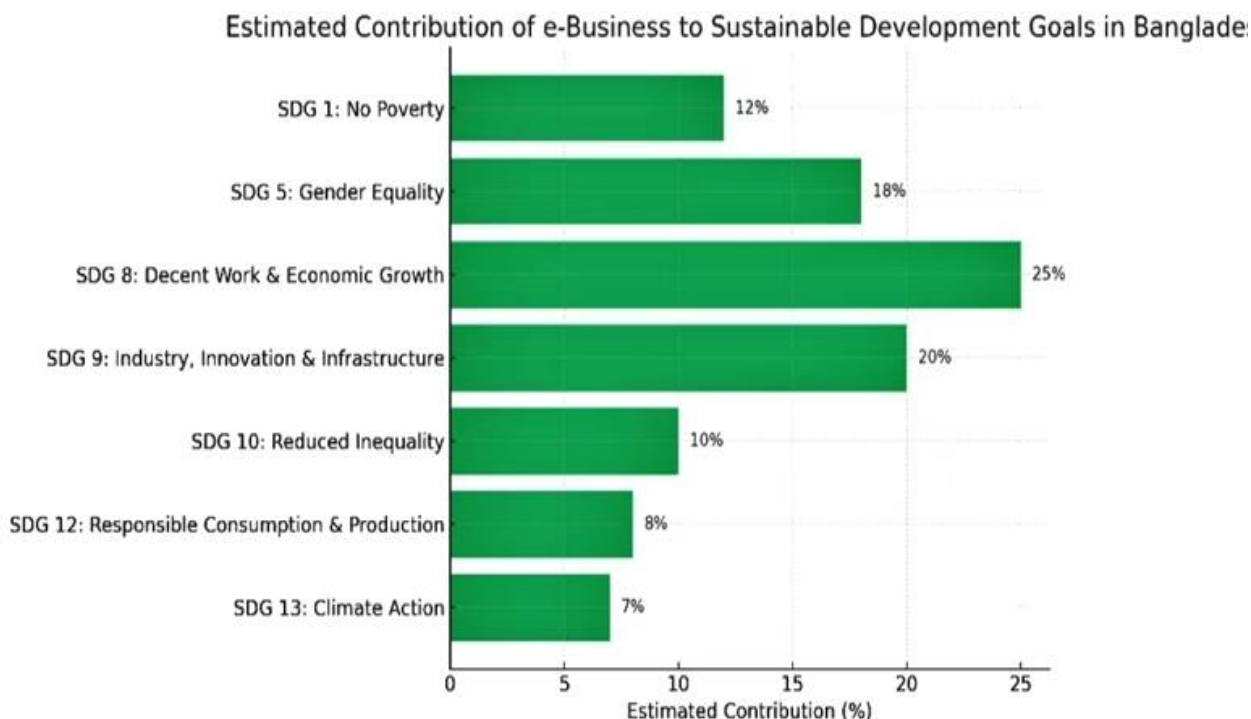


Figure 5: Estimated Contribution of e-business to SDG in Bangladesh

To align e-business more directly with sustainable development, Bangladesh must adopt a multi-dimensional strategy:

- i. Ensure data protection laws and e-commerce regulations that build consumer trust.
- ii. Promote green logistics and environmentally friendly practices in online retail.
- iii. Collaborate across public and private sectors to scale innovations sustainably.

In conclusion, e-business is more than a technological advancement in Bangladesh—it is a driver of inclusive and sustainable growth. It strengthens economic resilience, supports social equity, and fosters environmental stewardship. As Bangladesh aims to become a smart and developed nation by 2041, integrating e-business into its sustainable development agenda will be key to building a digital economy that leaves no one behind.

Challenges and Considerations of e-business in Bangladesh: Despite notable progress in digital commerce, several challenges and strategic considerations still hinder the full potential of e-business in Bangladesh (Hossain, 2021). These issues are deeply rooted in technological, infrastructural, socio-economic, and regulatory dimensions:

- i. **Inadequate Digital Infrastructure:** Many rural and semi-urban areas still suffer from weak internet connectivity and inconsistent power supply. Mobile network coverage is improving but remains unstable in remote regions, limiting online access for potential entrepreneurs and consumers.
- ii. **Low Digital Literacy:** A significant portion of the population lacks awareness or technical knowledge about digital tools, especially among the elderly and marginalized groups. Customers often face difficulties in placing orders, making online payments, or navigating e-commerce platforms.
- iii. **Cybersecurity Threats:** Weak cybersecurity laws and limited enforcement expose users to risks such as phishing, fraud, identity theft, and scams. Many e-business platforms do not employ secure payment gateways, increasing mistrust among potential users.
- iv. **Payment System Limitations:** Although services like bKash, Nagad, and Rocket are popular, their reach is still not universal. Trust in digital payments remains low among a segment of users who still prefer cash-on-delivery (COD) (Fardous et al., 2023).
- v. **Regulatory Gaps:** The absence of comprehensive and up-to-date e-commerce policies hampers the growth and standardization of the sector. Key issues such as return policies, data privacy, and consumer protection often remain ambiguous or poorly enforced.
- vi. **Logistics and Delivery Issues:** High delivery costs and delays, especially in remote regions, discourage both sellers and buyers. Many e-commerce businesses rely heavily on third-party logistics providers, which are not always reliable.
- vii. **Trust and Authenticity Concerns:** Counterfeit products, false advertising, and a lack of product reviews are major concerns for online shoppers. Lack of customer support and dispute resolution mechanisms reduces consumer confidence.
- viii. **Market Saturation in Urban Areas:** Urban consumers are already heavily targeted, leading to intense competition among platforms. Businesses must

differentiate themselves through innovation, customer experience, and niche targeting.

Strategic Considerations for Sustainable Growth: To overcome these challenges, the following strategic actions are essential. By addressing these challenges thoughtfully, Bangladesh can unlock the full transformative power of e-business, fostering innovation, inclusion, and economic resilience:

- i. **Digital Education Initiatives:** Nationwide campaigns to promote digital literacy, especially in rural areas.
- ii. **Improved Cyber Laws:** Stronger legislation and enforcement mechanisms to protect users and build trust.
- iii. **Policy Reforms:** Development of a robust national e-commerce policy focusing on data protection, fair trade, and customer rights.
- iv. **Infrastructural Investments:** Public-private partnerships to boost internet access and logistical efficiency.
- v. **Inclusive Platforms:** Development of Bangla language interfaces, rural-friendly apps, and offline-to-online support systems.

While the growth of e-business is promising, there are still barriers to overcome:

- i. Limited digital literacy in rural areas is 56%
- ii. Concerns over data privacy and cybersecurity are 79%
- iii. Inadequate logistics and infrastructure in some regions is 44%
- iv. Payment system challenges, especially for international transactions, are 60%

Recommendations:

To ensure the sustainable and inclusive growth of e-business in Bangladesh, several policy-level, technical, and community-based recommendations are essential. Below are key recommendations aligned with identified practical solutions. By implementing these recommendations with targeted solutions, Bangladesh can address the current gaps in e-business development, ensuring a more inclusive, resilient, and digitally empowered economy:

- i. **Improve Digital Infrastructure:** Expand high-speed broadband access through public-private partnerships, invest in fibre optic networks beyond major cities and introduce solar-powered internet hubs in remote areas.
- ii. **Enhance Digital Literacy:** Launch community-based ICT training programs via union digital centres (UDCs), and encourage mobile app-based learning modules in Bangla.
- iii. **Strengthen Cyber Security and Trust:** Implement stronger e-commerce regulations under a national digital security act, establish certification for verified e-commerce platforms to promote trust, and launch public awareness campaigns on digital safety and fraud prevention.
- iv. **Reform Payment Systems:** Encourage interoperability between banks and mobile financial services (e.g., bKash-Nagad integration), incentivize digital payments

- through discounts or cash-back offers, and provide agent-based digital payment education in rural markets.
- v. **Develop Robust Policies and Regulations:** Formulate a comprehensive e-commerce policy, including guidelines for dispute resolution, return policies, data privacy, and taxation, and set up a Digital Commerce Regulatory Authority (DCRA) to monitor compliance and protect consumers.
 - vi. **Solve Logistics and Delivery Challenges:** Introduce government-supported last-mile delivery services in rural areas, support startups working on rural logistics with funding and mentorship, promote warehouse hubs in regional areas to cut delivery time and costs.
 - vii. **Encourage Local Language and Inclusion:** Develop Bangla-compatible e-commerce apps and tools, introduce voice command support for low-literacy users, and promote inclusive design thinking in tech development for diverse user bases.
 - viii. **Support for MSMEs and Rural Entrepreneurs:** Provide government grants, tax breaks, or low-interest loans for digital transformation, offer mentorship programs for small businesses transitioning to online platforms, and organize e-business Fairs and Digital Markets to connect rural sellers with national platforms.

Conclusion:

This study explored the evolution, current status, challenges, advantages, and potential of e-business systems in the Bangladeshi context. One of the most notable trends identified is the acceleration of e-commerce adoption since 2020, particularly during and after the COVID-19 pandemic, which highlighted the need for contactless transactions and remote business operations. Urban populations, especially young consumers, have quickly adapted to online platforms like Daraz, Chaldal, Pathao, and Facebook-based businesses. Moreover, mobile financial services like bKash, Rocket, and Nagad have made significant contributions by simplifying digital transactions. It provides new economic opportunities, reduces dependency on physical retail, enables access to broader markets, supports women-led entrepreneurship, and facilitates rural inclusion through social media-based commerce. Startups and SMEs have benefited from low-cost entry into the digital space, allowing them to bypass traditional retail barriers.

However, this transformation is not without its challenges. The lack of digital literacy, especially in rural areas, remains a substantial hurdle. Many small businesses still rely on traditional methods due to a lack of trust, understanding, or access to digital tools. Infrastructure problems, such as unreliable internet connectivity, delivery inefficiencies, and inadequate cybersecurity measures, continue to hinder the seamless operation of e-business platforms. Additionally, a lack of effective policy frameworks and consumer protection laws puts both sellers and buyers at risk. Despite these constraints, the outlook for e-business in Bangladesh is highly promising. The government has taken positive steps through the “Digital Bangladesh” initiative, aiming to integrate ICT into all aspects of public service and economic activity. If current trends continue, the country’s digital economy is likely to contribute significantly to GDP growth and job creation shortly. To capitalize on this momentum, multi-stakeholder collaboration is crucial. The government, private sector, civil society, and academic institutions must work together to develop smart policies, invest in infrastructure, and promote digital education. Encouraging local innovation, supporting digital payment systems, and ensuring robust legal protections for

consumers and sellers are critical steps for fostering long-term trust and engagement in the digital space.

In conclusion, e-business is more than just a commercial opportunity in Bangladesh—it is a pathway to digital inclusion, economic resilience, and sustainable development. With the right strategic interventions, the e-business ecosystem can unlock immense value, bridging urban-rural divides, empowering women entrepreneurs, and aligning the country with global digital trends. By addressing the existing challenges and maximizing its digital potential, Bangladesh is well-positioned to emerge as a dynamic player in the South Asian digital economy.

References

- Ahmed, T., Karmaker, C., & Rahman, S. (2020). Model of interrelation among E-service quality factors: A case study in the online business of Bangladesh. *International Journal for Quality Research*, 14(3), 765.
- Ali, M. A., Hoque, M. R., & Alam, K. (2018). An empirical investigation of the relationship between e-government development and the digital economy: the case of Asian countries. *Journal of Knowledge Management*, 22(5), 1176-1200.
- Ali, M. M. (2010). E-business and online banking in Bangladesh: an Analysis. *Banks & Bank Systems*, 5(2), 156-172.
- Fardous, J., Mannan, A., Hasan, M. Z., & Haque, M. E. (2023). Customers and agents' satisfaction on the adoption of Mobile Financial Services (MFS): A Study with particular reference to bKash, Rocket, and Nagad. *IOSR Journal of Business and Management*, 25(4), 28-44.
- Kabir, A. I., Jakowan, M., Bosu, J., Mohsin, M. S., & Hamim, R. (2020). The emergence of e-commerce sites and their contribution towards the economic growth of Bangladesh: A quantitative study. *Informatica Economica*, 24(3).
- Khan, M. A., Zubair, S. S., & Malik, M. (2019). An assessment of e-service quality, e-satisfaction and e-loyalty: Case of online shopping in Pakistan. *South Asian Journal of Business Studies*, 8(3), 283-302.
- Laudon, K. C., & Traver, C. G. (2021). *E-commerce 2020-2021: Business, technology, society*. Pearson.
- Mohiuddin, M. (2014). Overview the e-commerce in Bangladesh. *IOSR Journal of Business and Management*, 16(7), 1-06.
- Nasrin, S. (2024). Impact of corporate reputation on customers' sustainable usage intention: The mediating role of satisfaction. *Open Journal of Business and Management*, 12(1), 191-209.
- Rahman, A. (2023). E-governance in Bangladesh. In *Global Encyclopedia of Public Administration, Public Policy, and Governance* (pp. 3675-3683). Cham: Springer International Publishing.

- Rahman, M. A., Islam, M. A., Esha, B. H., Sultana, N., & Chakravorty, S. (2018). Consumer buying behaviour towards online shopping: An empirical study on Dhaka city, Bangladesh. *Cogent Business & Management*, 5(1), 1514940.
- Uddin, M. A. (2021). Adoption of e-commerce in Bangladesh: Probit regression and principal component analysis approach. *Can. J. Bus. Inf. Stud*, 3(1), 1-13.
- Uddin, M. K., & Nasrin, S. (2023). The mediating effect of customer satisfaction on Fintech literacy and sustainable intention of using mobile financial services. *Open Journal of Business and Management*, 11(5), 2488-2504.
- World Bank Group. (2016). *World Development Report 2016: Digital dividends*. World Bank Publications.