Challenges faced by traditional businesses initiating online Sales Services: Bangladesh

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Abstract

E-commerce changed the global business scenario. It provides significant growth opportunities for firms. However, traditional businesses in Bangladesh face unique challenges to integrate online sales into their activities. This research investigates the difficulties confronted by traditional firms in Bangladesh in adopting online sales services. This study examines infrastructural, cultural, technological, and regulatory factors. This paper also provides a comprehensive analysis of the barriers and it proposes actionable solutions.

DEDICATION

I dedicate this thesis to my family, friends and colleagues for their endless support and trust on me.

I am also grateful to my lecturers and mentors, especially Professor Dr. Md. Moktar Ali, for your essential advice, inspiration and encouragement. This thesis is dedicated to all the knowledge searchers – who is in search of knowledge or information.

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I acknowledge the financial help from the ICT division of Bangladesh, which was essential for my research.

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PROCLAMATION

I, Tasmia Jaigirder, daughter of Mr. Omer Sharif Jaigirder, a student of M.Phil. in Marketing at the Faculty of Business Studies, University of Dhaka, hereby declare that this thesis is my original research and has not been submitted elsewhere in Bangladesh.

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CERTIFICATE OF RESEARCH COMPLETION

This document certifies that the thesis entitled "Challenges faced by traditional businesses initiating online Sales Services: Bangladesh" submitted by Tasmia Jaigirder for the M.Phil. degree in the Department of Marketing at the University of Dhaka, constitutes original research and contains adequate material for evaluation by the examiner(s) for the aforementioned degree.

Supervisor Name: Md. Moktar Ali

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Signature:

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Chapter 1. INTRODUCTION

The world is heading towards the journey of digital transformation. Bangladesh is also a member of that journey. The global market already adopted ecommerce as a form of transaction. In Bangladesh the shift has already started to take place. But this shift is facing a number of hindrances. This shift is not as simple as opening an online shop or Facebook page. Rather it involves different business models, strategies, and infrastructures. In our country, these challenges are dependent on unique social and economic factors, technological limitations, and regulatory environments.

Technological infrastructure is one of the most challenging obstacles to online shift. Although we have advanced a lot, the country's internet infrastructure remains inconsistent and underdeveloped, particularly in rural areas. There exists a digital divide between the cities and villages. This digital divide poses a serious challenge for businesses trying to launch online sales services. Inadequate internet services and limited access to broadband services are still keeping away our potential customers from online shops. This reduces the potential online market size. Moreover, concerns like cybersecurity and data privacy also exists. These factors deter traditional firms from fully embracing e-commerce platforms. (Ahmed S. & Ahmed, S. Digital Transformation in Bangladesh: Challenges and Opportunities, 2021).

Economic factors are also responsible for hindering the path to online shift. Digital transformation needs a high initial investment. This high cost is needed especially for small and medium enterprises (SMEs) that dominate the Bangladeshi market. These businesses often produce low profits and are operated with low capital. So it is very difficult for them to invest in high technology initially. (Chowdhury, Economic Impacts of E-commerce on SMEs in Bangladesh, 2020; wipo.int, n.d.; Hafinaz).

We are proud of our culture. That is our identity. But in some cases, our culture poses a big challenge to embracing something new. When we operate our businesses organizationally, or if there is a family-owned business, then we may face these types of barriers. Because not all members of an organization are not equally digitally learned or each member of a family may not be equally conservative. This mindset should be changed. In order to change the viewpoint, training and education are a must. (Rahman A., 2019; Taherdoost, 2024).

Moreover, the governments' regulatory body also poses a challenge. Regulatory frameworks are also struggling to cope with the digital transformation of businesses. It is upgrading to establish control over the changing online environment. There is still uncertainty and ambiguity about issues like taxation on online shops, customer protection, trust issues, validity of electronic contracts, and so on. Until these issues are solved its still very hard for both the seller and the customer to continue. (Khan, 2018; Taherdoost, 2024).

The study drew data from various sources, including government reports, case studies of local businesses, and scholarly articles on digital transformation in developing economies. The thesis aims to throw some light on the specific difficulties faced by traditional firms in Bangladesh. This study will contribute to the understanding of these challenges and help traditional firms in Bangladesh to better navigate the digital transformation journey in a competitive global market.

Besides the above ones, there are some more factors that cause challenges faced by traditional firms in Bangladesh when starting online sales services. The factors are logistical issues, customer behavior, and competitive pressures.

Logistics are a big issue for online sales. There are inefficiencies in our infrastructure .it affects e-commerce operations badly. Poor road networks, congestion in urban areas, and unreliable delivery services are the examples. These increase operational costs and result in negative customer experiences. Negative customer experience spread negative reputation of a company. ((Hossain, International Journal of Logistics Research, , (2020).), (how to start a business in egypt, 2023), (El-Bassiouny, 2016).

There are two more barriers called, behavior and trust of customers. In our country, traditional shopping is very common. E-commerce is a new idea here. Here, customers generally prefer to see and touch products before purchasing. But this is not possible with online shopping. This gap can make consumers hesitant to buy online. They fear that, products may not meet their expectations in terms of quality and authenticity. In addition to that, there is a general lack of trust in digital transactions about payment security and potential fraud. This keeps many away from using online payment systems ((Islam, Customer Trust in E-commerce: A Bangladeshi Perspective., (2019).)

Competition in the industry also poses a challenge. As more firms enter the online market, traditional businesses face more competition. For example, when Daraz entered the local market, the SMEs felt pressure. Because companies like Daraz benefit from economies of scale, extensive logistics networks, and significant marketing budgets. But the small businesses don’t have that opportunity. This pressure makes business difficult for traditional firms.((Chowdhury N. , Competitive Dynamics in Bangladesh's E-commerce Sector., 2021), (fastercapital, 2023)

The skills gap is another problem. Traditional firms typically lack the expertise to develop online sales platforms. They need skills like Digital marketing, e-commerce website development, and data analytics for online business success. But many businesses struggle to find or afford skilled professionals in these areas. This can result in poorly designed websites, ineffective marketing strategies, and other problems. Each of them can hinder the growth of online sales operations ((Rahman A. &., (2018).)

Financial barriers also play a crucial role. The cost of digital transformation is generally high. They include technological investments; training, marketing, and maintenance expenses. For SMEs, this initial investment becomes a very serious burden. Moreover, the risks associated with online sales, such as the uncertainty of returns on investment and the potential for operational disruptions, can divert firms from to digital transformation ((Karim, (2019).)). (Taherdoost, 2024).

Government and policy framework is also an important factor. policies are required to be addressed specifically too. Incentives for digital adoption, clearer regulations, and support programs for skills development and infrastructure improvement can make digital transformation smoother. government, private sector, and international partners together can help create a more supportive environment for e-commerce growth in Bangladesh ((Ahmed S. , 2020), (Nurtey, 2024), (asaaseradio.com, 2024-26), (raijmr.com, 2023), (Ijisrt.com, 2023), (3news, 2023)

1.1. Problem Statement

When the conventional firms adopt digital platform, they have to face lots of challenges. In digital platform, these firms have to face both advantages and disadvantages. (Shofiro, 2023)

These firms usually face technological challenges. People from rural areas, like villages remote from big towns don't have access to fast internet service. So it becomes hard for them to do business online. According to (Ahmed S. &., Ahmed, S.Digital Transformation in Bangladesh: Challenges and Opportunities. , (2021))), these become serious challenges for traditional businesses. In addition to that, many employees and owners are still inefficient in using technology. This increases the suffering more. Technological barrier varies depending on the size of a firm. If the firm is big, it faces less hurdles. (Ahmed S. &., Ahmed, S.Digital Transformation in Bangladesh: Challenges and Opportunities. , (2021)). But smaller ones struggle the most. For example, a remote place with unskilled labor will make a small business struggle. But a large firm can solve this problem immediately by introducing training programs. (Chowdhury M. A., 2020).

Logistical issue is another big problem. Effective logistics and supply chain management are important for the success of e-commerce operations. According to (Hossain, International Journal of Logistics Research, , (2020).) poor road networks, congestion in urban areas, and unreliable delivery services are the factors that affect traditional firms' activities. These do not only increase operational costs but also result in negative customer experiences.

Another major factor is economic restrictions. The initial investment to adopt e-commerce technologies can be prohibitively high, especially for SMEs. According to (Chowdhury N. , Economic Impacts of E-commerce on SMEs in Bangladesh. _, 2020)), limited access to affordable digital payment systems restricts the ability of these firms to facilitate seamless online transactions. There is a cost involved with digital transformation. After shifting to digital service, the new business faces uncertainty of ROI (returns on investment). Both can stop traditional businesses' successful transition.

There is another challenge called trust issue. Sometimes customers' behavior also poses a new issue. E-commerce is a new idea in Bangladesh. Most consumers in our country are used to traditional shopping. These customers are afraid of online shopping. Because in online, they can't touch the product before ordering. In some case they have to pay first. But they can't believe the seller before getting the product in hand. Even if they can trust the seller, they cannot trust them with their credit card details. (Islam, Customer Trust in E-commerce: A Bangladeshi Perspective. , (2019).)That's why secure payment gateways are very important for online business. Transparent business practice is also necessary.

Traditional firms face another problem called competitive pressure. When new farms join the business, it becomes harder for the older farms to make higher profit. This is called competitive pressure. For example, in our country, there were traditional farms operating all over. But as a part of globalization, the world-known online platform Daraz entered to the market. The local traditional farms started feeling competitive pressure from Daraz. These larger companies have different benefits. They have the benefits from big production, large logistics networks, and big marketing budgets. These companies act as threats to traditional firms. ((Chowdhury N. , Competitive Dynamics in Bangladesh's E-commerce Sector. , (2021).), (fastercapital, 2023)

The challenges make the traditional firms' activities difficult in Bangladesh. These can cause less customer satisfaction, financial losses, less competitiveness, and business closure. It can affect the whole economy and job market in Bangladesh.

Moreover, these challenges also affect our socio-economy. It becomes hard for the local and small businesses to adapt digital sales. This results in creating the digital divide. Rural and underserved communities, which already face limited access to technology and digital literacy, may be further marginalized. It is important to Ensure an inclusive digital transformation that benefits all segments of society for sustainable economic development.

In previous studies, we have found the general challenges of e-commerce adoption. But there is limited research specifically on the difficulties faced by traditional firms in Bangladesh. Existing studies overlooked the socio-economic and cultural factors. In addition, there is a lack of comprehensive analysis of technological, logistical, economic, and regulatory challenges. In order to develop targeted strategies, we need to address the research gaps. It will help traditional firms in transitioning to online sales services. (raijmr.com, 2023), (Ida Skubis, 2024), (Min Ma, 2024,).

Research Objectives

This research aims to analyze the specific challenges faced by traditional firms in Bangladesh when starting online sales services. This study's main objective is to

a. **Examine the challenges that offline businesses face while starting online services.**
b. **Determine the most difficult obstacle offline businesses face while starting online services.**

1.2. Research Question

To meet our research goals effectively, we've broken down the objectives into research questions. By answering these questions, we can navigate our research path.

Research Objective: a: Examine the challenges that offline businesses encounter while launching online services.

Research Questions: What are the challenges that offline businesses encounter while launching online services?

Research Objective b: Determining the most difficult obstacle offline businesses encounter while starting online services.

Research Questions: What is the most difficult obstacle for offline businesses to address?

These research questions will help investigate the various challenges faced by offline businesses when launching online services and identify which of these challenges is the most significant.

1.3. Gaps in the Literature

1.3.1. Identifying Gaps: We have reviewed a number of valuable studies. There are still some gaps in the literature. One gap is the lack of comprehensive research that considers all the identified challenges. Most studies focus on specific issues separately. They did not examine their interrelationships. (syncsci, 2023)

1.3.2. Unanswered Questions: During the review the researcher found several unanswered questions. The questions are like what specific policy reforms are needed to support digital transformation, and how traditional firms can build consumer trust in a relatively nascent e-commerce market.

Chapter 2. Literature Review

In order to become competitive and sustainable, traditional businesses should adopt the online sales services. But this shift has to face a number of challenges. This ranges from technological barriers to logistical issues, economic constraints, and regulatory hurdles. This literature review aims to explore the existing studies to find out difficulties, identify gaps in the literature, and provide a foundation for further research. (Alex Khang, 2024), (Shofiro, 2023).

2.1. Theoretical Background

2.1.1. **Key Concepts and Definitions** Buying and selling of goods and services over the Internet is called E-commerce. Integrating digital technologies into all areas of business operations is known as Digital transformation. It includes changing how businesses operate and deliver value to customers. These concepts are important to understand the challenges traditional firms face when adopting online sales. (coursehero, n.d.), (Rakhimova N., 2024).

2.1.2. **Relevant Theories** There are a few theories available on digital transformation. There is a theory called Acceptance Model (TAM). This theory explains how users come to accept and use technology. It focuses on perceived user friendliness and perceived usefulness as important factors ((Davis, 1989)). Another theory is called Diffusion of Innovations theory by Rogers (2003). This theory explores how new ideas and technologies spread within a society and emphasizes the roles of innovation, communication channels, time, and social systems. (Rogers, 2003), (Ida Skubis, 2024), (Mojtaba Ghorbani Asiabar, 2023), (Dillette, 2020).

2.2. Review of Previous Research (Summary of Key Studies)

2.2.1. **Technological Challenges** There are so many technological barriers to e-commerce adoption in Bangladesh. Some of them are discussed in Ahmed and Hossain (2021). Ahmed and Hossain identified inadequate internet infrastructure and cybersecurity concerns as important issues. The study also emphasizes the lack of digital literacy among business owners and employees. (Ahmed S. &., Ahmed, S.Digital Transformation in Bangladesh: Challenges and Opportunities. , (2021))

2.2.2. **Logistical Issues** Hossain and Rahman's (2020) study focused logistical challenges. According to them, Poor road networks, urban congestion, and unreliable delivery services are some of the most serious issues. (Hossain, International Journal of Logistics Research,, (2020).)

2.2.3. **Economic Constraints: T**here are a lot of economic barriers to digital transformation for SMEs in Bangladesh. Chowdhury (2020) finds out a few of them. Chowdhury focused on 'High initial investment costs' and 'limited access to funding'. According to him these two are two most significant constraints. The study also discusses the uncertainty of returns on investment. ROI uncertainty stops businesses from fully shifting to online sales services. (Chowdhury N. , Economic Impacts of E-commerce on SMEs in Bangladesh. , (2020).)

2.2.4. **Customer Trust and Behavior** Islam and Sultana (2019) focus on consumer trust and behavior. According to them, product authenticity, payment security, and the inability to physically inspect products before purchase are key factors influencing consumer reluctance. (Islam, Customer Trust in E-commerce: A Bangladeshi Perspective., (2019).)

2.2.5. **Competitive Pressures** Chowdhury (2021) studies the competitive dynamics in Bangladesh's e-commerce sector. The study shows the challenges traditional firms face in competing with local and international e-commerce companies. The international companies benefit from economies of scale and extensive logistics networks. (Chowdhury N. , Competitive Dynamics in Bangladesh's E-commerce Sector. , (2021).)

2.2.6. **Regulatory and Policy Issues** Ahmed (2020) studies the role of government initiatives. He also focused on the need for a supportive policy framework to accelerate e-commerce growth. The study discusses the complexities of regulatory requirements and the importance of clear guidelines and incentives for digital transformation. (Ahmed S. , 2020)

Information and Communication Technology (ICT) Act 2006 was the main act to monitor electronic activities. (Saha, 2026). **Digital Security Act (DSA) of 2018** was developed to support that act. Its main aim was to fight cybercrime. But it faced severe criticism for its vague provisions. Its **Section 25** (criminalizing "offensive" information) and **Section 31** (addressing national security) were criticized as they encouraged self-censorship. Still there is not a single act to save the interests of online sellers in Bangladesh. (Balancing State Security and Freedom of Expression: A Case Study of Bangladesh's Media Landscape. , (2026).)

2.3. Critical Analysis

2.3.1. **Evaluation of Studies** The studies that we reviewed, provide valuable insights into the various challenges. However, the studies also have limitations. For example, Ahmed and Hossain (2021) primarily focus on technological barriers. But don’t explore the interrelationship between technology and other challenges, such as logistics and economic constraints. Hossain and Rahman (2020) highlight logistical issues, but don’t provide comprehensive solutions. (Ahmed S. &., Ahmed, S.Digital Transformation in Bangladesh: Challenges and Opportunities. , (2021)), (Hossain, International Journal of Logistics Research,, (2020).)

2.3.2. **Comparative Analysis** We compared findings from different studies. The outcome reveals some confusing results. For example, Chowdhury (2020) focuses economic constraints as the primary barrier. But Islam and Sultana (2019) found out that consumer trust issues are more serious. This could be caused by the different methodologies and sample populations used in these studies. In order to avoid such contradictions, we should consider multiple factors. (Chowdhury N. , Economic Impacts of E-commerce on SMEs in Bangladesh. _, 2020), (Islam, Customer Trust in E-commerce: A Bangladeshi Perspective. , (2019).)

2.3.3. **Analysis of Information:** When we Analyzed the information from various sources, we learned that, the challenges are interconnected. Technological barriers, logistical issues, economic constraints, and regulatory issues affect the success of traditional firms in the e-commerce sector together. In order to solve these problems, we need a parallel strategy. This strategy should cover technological, logistical, financial, and policy related issues.

2.4. Implications for Future Research

2.4.1. Directions for Future Research: I have studied lots of theses on this topic. Still There are need for more studies on this topic. Future studies should focus on specialized strategies. Future researchers should focus on such strategies that will be able to handle all the challenges together. They should also have recommendations for policymakers.

2.4.2. **Filling the research gap (New insights):** (Ahmed S. &., Ahmed, S.Digital Transformation in Bangladesh: Challenges and Opportunities. , (2021)) **and** (Hossain, International Journal of Logistics Research,, (2020).) discussed the challenges separately. This study overcomes that gap and suggests some new insights. The study shows interrelationship among the factors and presents new insights. Based on these insights we will try to answer some questions previously discussed in 1.3.2 section.

- Trust issue: (Islam, Customer Trust in E-commerce: A Bangladeshi Perspective. , (2019).) discussed the gap that is caused by lack of trust in a new market. According to our study, most respondents are satisfied with the online customer trust building. And most respondents are also happy with the outcome of good return policy. This fills the gap by the insight that, good after sales service can build trust.
- Policy protection gap: According to (Ahmed S. , 2020) more acts are needed. According to our survey data most sellers are not happy with the available policy. There are acts for online safety which is not adequate for online sellers. So it can be said that, regulatory support to preserve the interests of online sellers is highly required.

- Logistics vs literacy: According to (Ahmed S. &., Ahmed, S.Digital Transformation in Bangladesh: Challenges and Opportunities. , (2021)) lack of digital literacy is the primary barrier. But our calculation says that, the sellers are mostly happy with customer's digital literacy. They are unhappy with the road congestion and delivery expenses.

We tried to focus on the numerous challenges traditional firms in Bangladesh face when starting online sales services. This review provides a base for further research too. (Ahmed S. &., Ahmed, S.Digital Transformation in Bangladesh: Challenges and Opportunities. , (2021)), (Hossain, International Journal of Logistics Research,, (2020).), (Chowdhury N. , Economic Impacts of E-commerce on SMEs in Bangladesh. , (2020).), (Islam, Customer Trust in E-commerce: A Bangladeshi Perspective. , (2019).). (raijmr.com, 2023).

Chapter 3. Methodology

In this research, we adopted descriptive method. This method is used to gain a comprehensive understanding of the challenges faced by traditional firms in Bangladesh when starting online sales services.

3.1. Research Design

The research design incorporates quantitative research. The ingredients of this research are, survey with rating scales, Numerical data, descriptive statistics, Generalizable findings etc.

3.2. Data Collection Methods

Data collection is divided into primary and secondary methods.

(myassignmenthelp, 2024).

3.2.1. Primary Data Collection

- **Surveys**: surveys are good tools for collecting data directly from the participants. These surveys are a set of preset questions to receive consistent responses. They target representatives of traditional firms in Bangladesh. It aims to gather detailed quantitative data on their experiences and perceptions. The data is about the initiation of online sales services. Generally, the surveys are of structured nature. They are used to collect comprehensive data. This data can be properly analyzed.

- **Sample Size**: The study includes a sample size of 100 firms. This sample size is chosen to keep the responses representative.

- **Sampling Technique**: We employed snowball technique. In this technique, initial survey respondents help identify additional participants.

3.2.2. Secondary Data Collection

- **Literature Review**: We studied existing studies thoroughly to develop the literature review. It includes academic journals, industry reports, and government publications. We got context and background for the primary data through the secondary sources. It helps to identify existing gaps in the research. The literature review helps to validate the primary data and offers a comparison point for the study's results. (Gebeyehu, October, 2023).

3.3. Data Analysis Methods

We used descriptive statistical techniques to conduct Data analysis. It is used to ensure the accuracy and reliability of the findings (He, 2021)

3.3.1. Descriptive statistics

Quantitative data was collected for the research. Then it was summarized using descriptive metrics.

- **Range and Limits:** We found out the Maximum values to define the upper limit of dataset. It helps to understand the peak responses of the traditional firms. It also helps to identify the potential influencers of the trend. (Hastie, (2009).)

- **Dispersion Analysis:** The dispersion of data points relative to the mean is measured by standard deviation. Responses were closely clustered around the average were indicated by a low standard deviation. A wider spread and greater diversity in respondent perspectives is shown by a high standard deviation. (Newbold, (2012).)

3.4. Reliability and Validity

In order to develop the quality of the findings, the study tried to ensure the **validity** and **reliability** of the survey.

3.5. Ethical Considerations

3.5.1. Informed Consent*:* Participants will be informed about the purpose of the study. Informed consent will be obtained from all participants. (guman, 2023), (Isnaini, (2024).).

3.5.2. Confidentiality: Participants' anonymity and confidentiality is maintained properly. Personal identifiers were removed from the data before analysis. (journalcra, 2024),

3.6. Limitations and Delimitations

3.6.1. Limitations: Potential limitations of the study may include response bias, limited generalizability (the specific focus on Bangladesh), and accessibility and reliability of secondary data. (iiespace, 2025).

3.6.2. Delimitations: The study focuses on traditional firms in Bangladesh. It excludes purely online businesses or multinational corporations. The study is limited to the initial phase of transitioning to online sales services. (africadailynews.net, 2024).

Chapter 4. Findings and Discussions

There are two main objectives for this study. The objectives are to:

a. Analyze the difficulties offline companies face while launching internet service

b. Ascertain the most difficult obstacle for the offline companies while launching internet service.

The study has two research questions derived from the above research objectives.

1. What are the challenges that offline businesses encounter while launching online services?

2. What is the most difficult obstacle for offline businesses while launching online sales?

This study will try to answer the research questions in light of the data collected and processed.

The initial purpose of the survey was to gather unprocessed data on the subject. An understanding of the current situation was provided by the sorted data. It helped to analyze the current challenges deeply.

(repository, 2023)

In order to conduct the research, some primary data was collected. To gather the primary data the researcher used survey method. Data collected through survey method are sorted and hence presented in the following table.

Table 1. Value of factors

Factors	**Not Satisfactory**	**Somewhat satisfactory**	**Satisfactory**	**Highly Satisfactory**	**Excellent**
adequacy of infrastructure	10	71	19	0	0
digital literacy of customer	15	18	35	32	0
technological support available	15	15	49	17	4
delivery expense	59	33	7	1	0
urban congestion	54	38	8	0	0
Cost of digital transformation initiatives	44	51	5	0	0
Availability of fin. Support	20	32	35	13	0
Customer concern on online payment	56	44	0	0	0
Availability of Customer feedback online	56	29	15	0	0
customer trust building	**23**	**30**	**32**	**15**	**0**
effectiveness of return policy in building customer trust	0	15	40	45	0
Level of competition	24	44	12	20	0
government’s role to protect online sellers	67	23	10	0	0

The Table1. Values of factors evaluates various factors related to customer satisfaction and digital transformation initiatives. Each factor is rated on a scale from "Not Satisfactory" to "Excellent," with numerical values reflecting the responses collected from participants. Below is a detailed analysis of each factor, its implications, and the overall significance of the data.

Table 1 highlights various factors affecting the launch and operation of new online shops. The responses are categorized into five levels of satisfaction (not satisfactory at all, somewhat satisfactory, satisfactory, highly satisfactory, excellent), allowing us to assess the challenges faced by these online businesses.

Graphical Presentation:

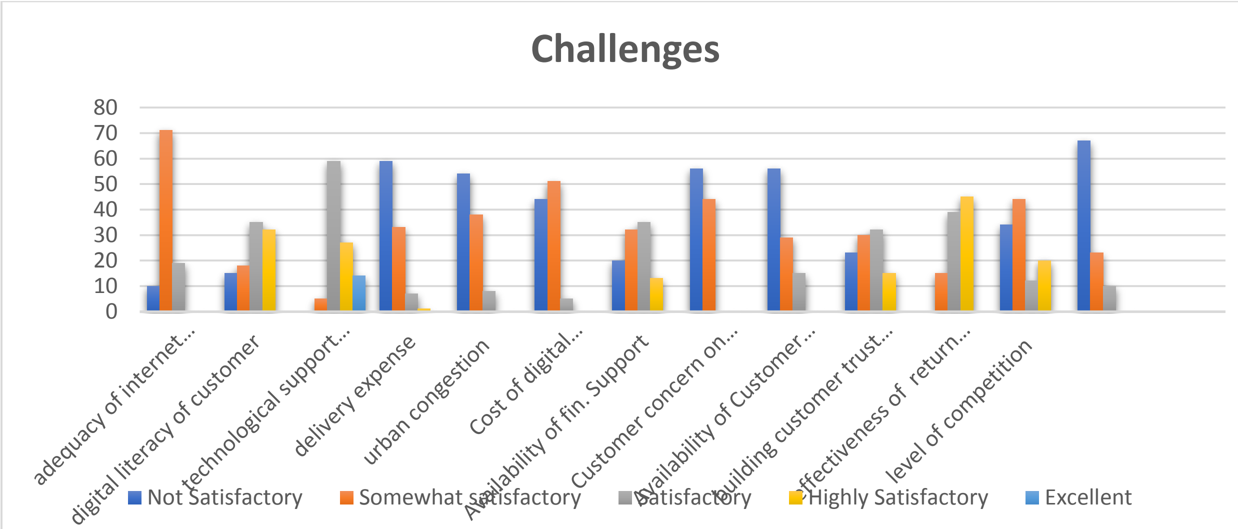


Figure 1. Value of factors

Above graph is the pictorial presentation of table 1.

4.1. Maximum Analysis

Maximus Analysis is conducted for each factors to find out the satisfaction level of the respondents' about that specific factor.

For each factor, we used the following scale for ratings: Not Satisfactory: 1, Somewhat Satisfactory: 2, Satisfactory: 3, Highly Satisfactory: 4, Excellent: 5.

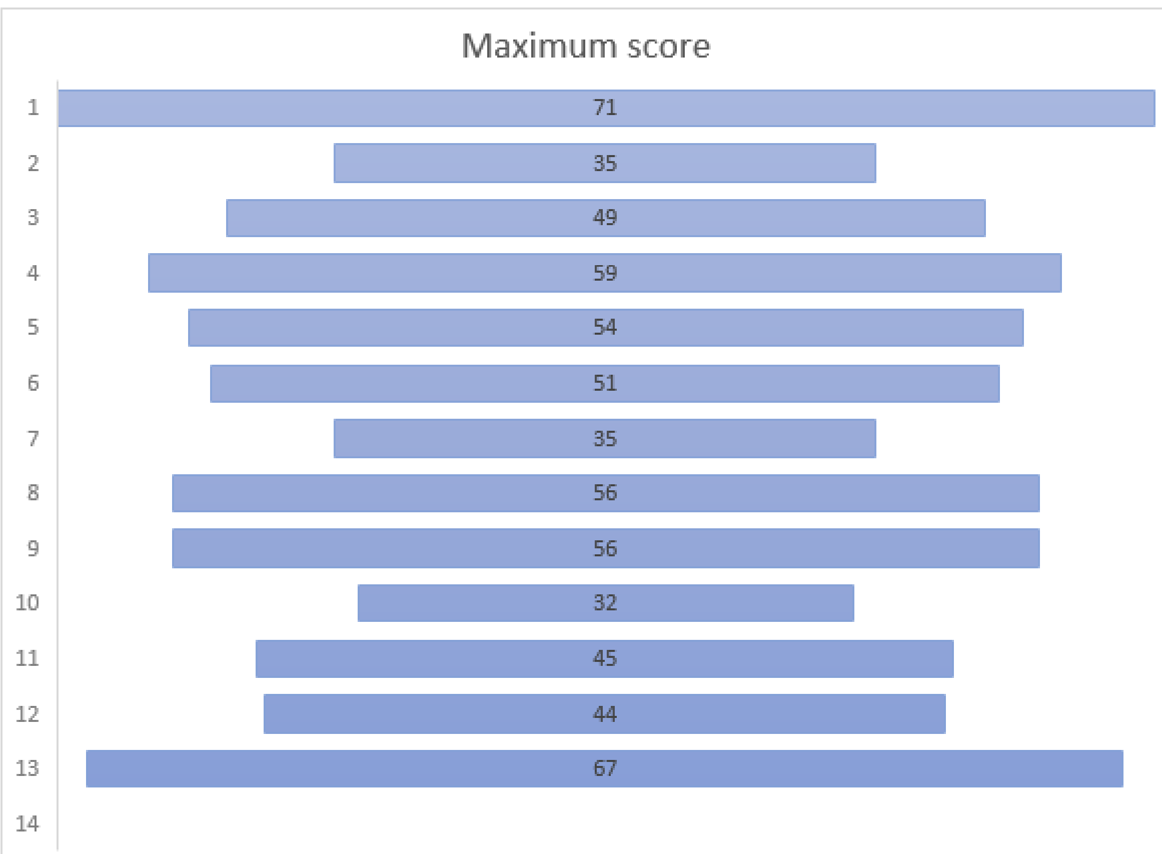
Table 2.Summary of Maximum Score

Factor	**Maximum**
Adequacy of Infrastructure	Somewhat Satisfactory
Digital Literacy of Customers	Satisfactory
Technological Support Available	Satisfactory
Delivery Expense	Not Satisfactory
Urban Congestion	Not Satisfactory
Cost of Digital Transformation Initiatives	Somewhat Satisfactory
Availability of Financial Support	Satisfactory

Factor	Maximum
Customer Concern on Online Payment	Not Satisfactory
Availability of Customer Feedback Online	Not Satisfactory
Building Customer Trust Online	Satisfactory
Effectiveness of Return Policy in Building Customer Trust	Highly Satisfactory
Level of Competition	Somewhat Satisfactory
Government's Role to Protect Online Sellers	Not Satisfactory

Above table summarizes the Maximum analysis results for each factor based on the provided data.

Figure 2. Maximum score



Above is the graph that shows the outcome of maximum analysis for each factor visually.

This analysis examined each factor in light of the Maximum score to get deeper insight. The outcome is discussed below:

1. **Adequacy of Infrastructure**:
   - Maximum score: A high count in "Somewhat Satisfactory" (71 responses).
   - Analysis: Many respondents feel the internet infrastructure is somewhat adequate. Still there is a significant level of dissatisfaction. This could indicate a need for improvement in internet services, which is crucial for online business operations.
2. **Digital Literacy of Customers**:
   - Maximum score: A balanced distribution with "Satisfactory" (35 responses) as the highest rated.
   - Analysis: This indicates that while a portion of customers are digitally literate, there remains a considerable number who may struggle with digital tools. Enhancing digital literacy programs could better equip customers to engage with online platforms.
3. **Technological Support Available**:
   - Maximum score: The responses are mostly in the "Satisfactory" (59) .
   - Analysis: This is a positive sign, indicating that the technological support available is meeting customer needs adequately, fostering a better online shopping experience.
4. **Delivery Expense**:
   - Maximum score: Here, "Not Satisfactory" (59 responses) dominates, showing a clear concern over delivery costs.

- Analysis: High delivery expenses could deter customers from completing purchases. Companies may need to reassess their shipping strategies or explore partnerships to lower costs.

5. **Urban Congestion**:
    - Maximum score: Similar to delivery expenses, "Not Satisfactory" (54 responses) reflects a significant concern regarding urban congestion affecting delivery times.
    - Analysis: This suggests that logistics challenges in urban areas affect customer satisfaction. Better planning or alternative delivery methods can be solutions to this problem.
6. **Cost of Digital Transformation Initiatives**:
    - Maximum score: The majority of responses fall under "Somewhat Satisfactory" (51).
    - Analysis: This indicates a perception that the costs associated with digital transformation are high, which might be a barrier for businesses. Effective budgeting and investment strategies are essential.
7. **Availability of Financial Support**:
    - Maximum score: Mixed responses found. "Satisfactory" (35) was the highest.
    - Analysis: The response suggests that available financial support is sufficient. More financial assistance programs could encourage digital transformation.
8. **Customer Concern on Online Payment**:
    - Maximum score: A clear majority rated this as "Not Satisfactory" (56).

- Analysis: This highlights the importance of ensuring secure payment systems. Businesses could focus on enhancing payment security features to build customer trust.

9. **Availability of Customer Feedback Online**:
   - Maximum score: Similar to the previous factor, "Not Satisfactory" (56 responses) shows a major concern.
   - Analysis: This suggests that businesses may not be effectively gathering or responding to customer feedback, which is vital for continuous improvement.

10. **Building Customer Trust Online**:
    - Maximum score: Mixed responses with "Satisfactory" (32).
    - Analysis: Trust is essential in e-commerce; improving transparency and communication could enhance customer relations.

11. **Effectiveness of Return Policy in Building Customer Trust**:
    - Maximum score: Positive responses in the " "Highly Satisfactory" (45) category shows that a good return policy is valued.
    - Analysis: A customer-friendly return policy can significantly enhance trust and encourage purchases.

12. **Level of Competition**:
    - Maximum score: Responses are varied, with notable dissatisfaction.
    - Analysis: This reflects a competitive market landscape, indicating that businesses need to differentiate themselves effectively.

13. **Government’s Role to Protect Online Sellers**:

- Maximum score: "Not Satisfactory" (67 responses). It means, a strong perception that government role to protect online sellers is not enough.
- Analysis: The government should increase its support to protect sellers' interests.

Table 3. Summary of the key points

Factor	Key Points
Adequacy of Infrastructure	Maximum people find it "Somewhat Satisfactory,". But it needs to be improved.
Digital Literacy of Customers	Mixed ratings. High in "Satisfactory,". needs more digital literacy initiatives.
Technological Support Available	most responses in "Satisfactory" and "Highly Satisfactory" categories.
Delivery Expense	many rate it as "Not Satisfactory. indicates a concern over shipping costs.
Urban Congestion	dissatisfaction is high. indicates logistical challenges.
Cost of Digital Transformation Initiatives	Majority find the costs "Not Satisfactory". Indicates hard adoption of digital solutions.
Availability of Financial Support	Mixed responses.
Customer Concern on Online Payment	Maximum responded as "Not Satisfactory,". highlights the importance of secure payment systems.
Availability of Customer Feedback Online	Majority find it "Not Satisfactory," . shows a gap in effectively gathering and responding to feedback.
Building Customer Trust Online	Mixed feedback with some positive responses. transparency and communication is needed.
Effectiveness of Return Policy in Building Customer Trust	Positive ratings indicate that a good return policy is valued and helps build trust.
Level of Competition	Varied responses . It suggests a competitive landscape.
Government's Role to Protect Online Sellers	Strong dissatisfaction. Reflects a perception that government protections for online sellers are lacking.

Analyzing **Table 2** Summary of Maximum score, we get the following outcome.

- **Not Satisfactory**: Factors like **Delivery Expense**, **Urban Congestion**, **Cost of Digital Transformation Initiatives**, **Customer Concern on Online Payment**, **Availability of Customer Feedback Online**, and **Government's Role to Protect Online Sellers** are perceived as falling short in meeting expectations.

- **Somewhat Satisfactory**: Factors such as **Adequacy of Infrastructure** and **Level of Competition** are not satisfactory.

- **Satisfactory and Highly Satisfactory**: **Digital Literacy of Customers**, **Technological Support Available**, **Availability of Financial Support**, **Building Customer Trust Online**, and the **Effectiveness of Return Policy in Building Customer Trust** have positive response. In particular, **Technological Support Available** suggests high satisfaction.

Here we can see the **Effectiveness of the Return Policy** got the highest score.

- **Risk Neutralization:** In a digital market, there is lack of trust. But sellers can earn it through effective return policy. This trust helps the customer to reduce his/her perceived risk. This maximum result proves that online sellers in Bangladesh have minimized this risk and made shopping easier for the skeptical customers. This also is acting as an instrument of trust building.
- **Competitive Positioning:** We can see Urban Congestion and Government support are external factors. They are out of the firm's control. But the return policy is an internal factor. Businesses' are trying to give better return policy and getting competitive advantage out of that.

According to the study, **Urban Congestion** and **Government's Role** are the factors that needs most attention.

- **Urban Congestion the logistical risk:** Most respondents rated Urban congestion as "Not Satisfactory". This means that, delivery efficiency is not satisfactory because of poor external infrastructure. For the business, this is a serious risk. In order to minimize this, the business may develop local pick up points for the customers.

- **The Trust Gap (Customer Concern on Online Payment):** The outcome suggests a high dissatisfaction over the online payment security. Because customers do not yet trust the *financial gateway*. Sometimes they do not even believe in prepaid system. They want to get the product first and then make the payment. The business should prioritize more secure, transparent, or even third-party verified payment systems to overcome this gap.

- **Policy and Advocacy (Government's Role):** The respondents are dissatisfied with government protection. There is no adequate Acts or regulations to preserve the interests of online sellers. This poses a risk for the businesses too. So it must fund its own security and fraud-prevention measures.

If we contrast between the **Maximum (Return Policy)** and **Minimum (Payment Concerns)** values we find that customers trust in the physical resolution of a sale, but hesitates at the point of digital transaction. So our focus should be now on **financial security infrastructure** and **last-mile delivery innovation** to overcome environmental congestion.

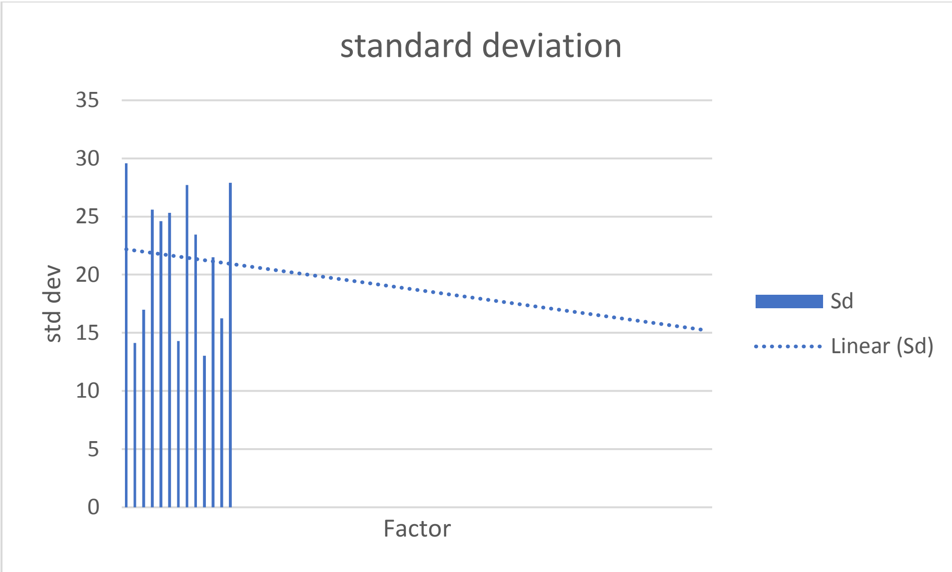
4.2. Standard Deviation Analysis

The standard deviation indicates how much the responses deviate from the mean value for each factor. The following Table shows the outcome of the Standard Deviation calculation for each factor.

Table 4. Standard Deviation

Factor	**Std dev**	**Factor**	**Std dev**	**Factor**	**Std dev**
Adequacy of Infrastructure	29.58884925	Cost of Digital Transformation Initiatives	25.30810147	Availability of Customer Feedback Online	23.46273641
Digital Literacy of Customer	14.12444689	Availability of Financial Support	14.30034965	Building Customer Trust Online	13.01921657
Technological Support Available	17	Customer Concern on Online Payment	27.71281292	Effectiveness of Return Policy in Building Customer Trust	21.50581317
Delivery Expense	25.59296778	Urban Congestion	24.61706725	Pressure of Competition	16.24807681
Government's Role to Protect Online Sellers	27.91952722				

Figure 3. Std Deviation



The figure shows the outcome of the standard deviation for each factor.

Here's an explanation:

1. **Adequacy of Infrastructure (**29.58884925**)**

    - High standard deviation suggests a wide range of opinions about internet infrastructure adequacy. Some respondents are very dissatisfied about it, while others are satisfied.

2. **Digital Literacy of Customer (**14.12444689**)**

    Lower standard deviation indicates that responses are closer to the mean. In our study, Most respondents agree on the level of digital literacy. It indicates that, there is a general perception of customer competence in using digital platforms.

3. **Technological Support Available (17)**

- The moderate standard deviation indicates some variability of responses about technological support. Here many respondents may feel adequately supported. The rest may feel less supported. It leads to differing opinions.

4. **Delivery Expense (**25.592**)**

- Higher standard deviation means significant disagreement among respondents about delivery expenses. Some may find the costs acceptable, while others think them too high.

5. **Urban Congestion (**24.617)

- Urban congestion had high standard deviation. It suggests diverse opinions of respondents on urban congestion. Some respondents think that congestion is a major problem. But others may not see it as a problem.

6. **Cost of Digital Transformation Initiatives (**25.30810147**)**

- This factor also showed high standard deviation. It indicates diverse experiences with the costs of digital transformation. Respondents had different views on this factor.

7. **Financial Support (**14.30034965)

The lower standard deviation shows uniform perception about the availability of financial support. Most respondents have same response about financial supports available.

8. **Customer Concern on Online Payment (**27.7128)

- It has A high standard deviation. It indicates different types of responses from the respondents about online payments. Some feel insecure. But others feel secure.

9. **Availability of Customer Feedback Online (**23.4627)
    - This shows high Standard Deviation. This standard deviation shows difference in perceptions of online feedback availability. Many respondents may feel that feedback is accessible. Some others may have differing views.

10. **Building Customer Trust Online (**13.019)
    - It shows lower standard deviation. Which suggests a consensus among respondents about the effectiveness of strategies. Its aim is building customer trust online. Most seem to agree on the effectiveness of these strategies.

11. **Effectiveness of Return Policy in Building Customer Trust (**21.50581)
    - Here the standard deviation is moderate. The moderate standard deviation shows that, many respondents are positive about the return policy's role in trust-building. But others are not positive.

12. **Pressure of Competition (**16.248076)
    - This standard deviation suggests differences in perception. Most respondents may feel severe competition. But others don't perceive so.

13. **Government's Role to Protect Online Sellers (**27.91952)
    - A high standard deviation indicates diverse opinions. Some respondents feel supported. But others feel neglected.

A high standard deviation for a factor shows varying opinions and experiences among respondents. It indicates a lack of consensus. In contrast, a low standard deviation indicates uniformity in perceptions. These insights can help stakeholders identify areas those are needed to be improved. We have to understand these variations. Then we can guide strategies for addressing customer concerns and enhancing the overall experience in the digital landscape.

The factor with the highest standard deviation indicates the greatest variability in responses. It suggests that it is the most challenging area. In this case, **Adequacy of Infrastructure** has the highest standard deviation. It indicates it to be the most challenging to address.

4.3. Summary of the Output:

The summarized data provides significant insights into the current state of online selling. We found several areas of concern. Urban Congestion, Government's Role to Protect Online Sellers, Customer Concern on Online Payment, Availability of customer feedback online and Delivery Expense are situated in the "Not Satisfactory" category. These could hinder progress and adversely affect customer satisfaction.

Most of the remaining factors are positioned within the "Somewhat Satisfactory" to "Satisfactory" range. 'Somewhat Satisfactory' indicates that, there is enough room for improvement. We have to focus on these areas. In order to, elevate the overall experience for both sellers and customers in the online marketplace.

We examined the standard deviation outcomes. **Adequacy of Infrastructure** emerges as the most challenging obstacle. This shows great variability and inconsistency. Unreliable services, slower delivery times, and increased operational costs can be caused by Inadequate infrastructure. All of them can hamper the growth and success of online enterprises.

In order to overcome these obstacles, we need strategic planning, investment in technology and infrastructure, and government regulatory support to accelerate the online business ecosystem.

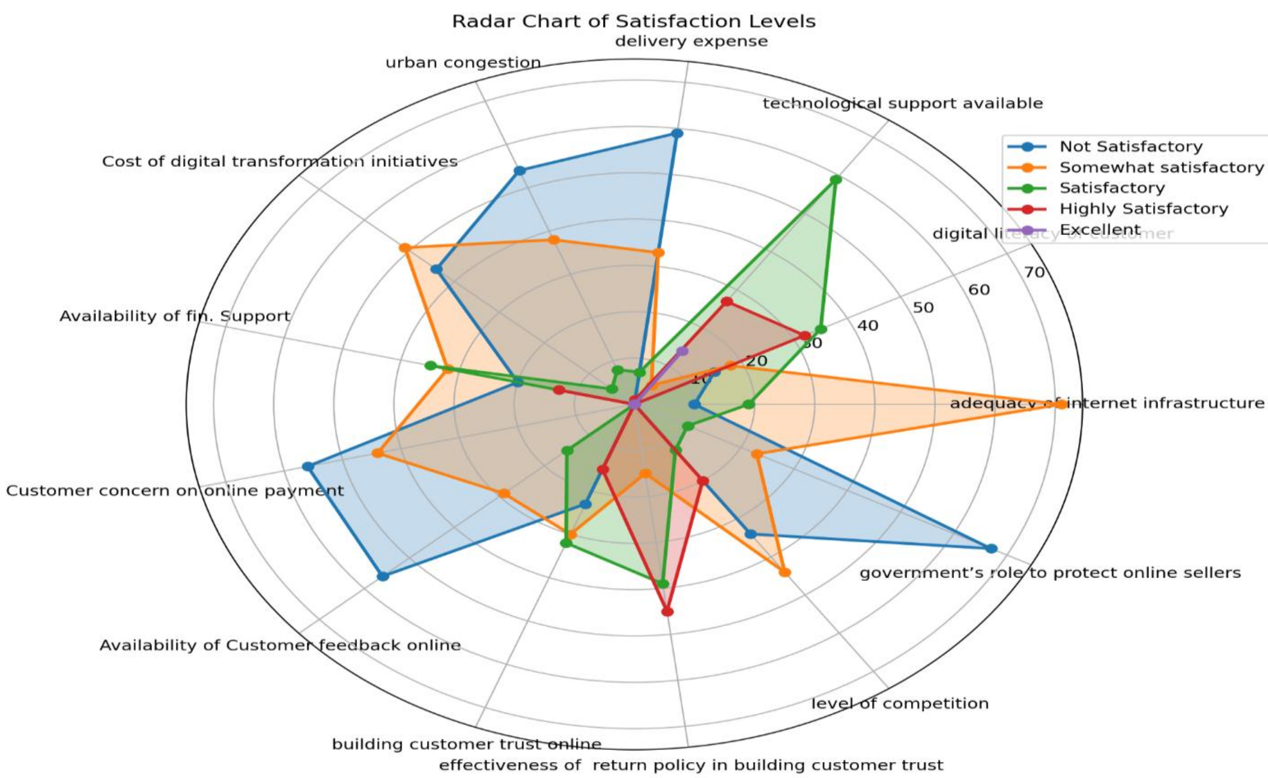


Figure 4.Radar chart of satisfaction level

- Radar chart indicates the relative strength of each satisfaction level across factors.It shows technological support has better satisfaction distribution.

Chapter 5. Recommendations

We analyzed the challenges faced by traditional firms in Bangladesh when initiating online sales services.

Based on our analysis, we present a set of recommendations. These may address these issues effectively. The transition from traditional to online sales is a complex process. It requires strategic planning, investment in technology, and a customer-centric approach. The following recommendations are designed to help traditional firms' transition successful. (Khoury, 2024).

5.1. Develop a Comprehensive Digital Strategy

Traditional firms in Bangladesh need to develop a comprehensive digital strategy. It should be tailored to their specific business needs and market conditions. (Taherdoost, 2024), (Khoury, 2024).This strategy should include the following components:

- **Market Analysis**: Traditional firms should analyze the market properly. Proper analysis will help them to handle consumer behavior, interests, and online buying trends. This will make it easier for the firms to identify target customer and customize their online offerings for them.

- **Competitive Analysis**: They should also Analyze the competitive environment first. They should identify key competitors, their strengths, weaknesses, and market positioning. This will help the firms to develop strategies. These strategies will differentiate them from competitors and attract customers.

- **Digital Marketing Plan**: The firms should develop a successful digital marketing plan. That should include search engine optimization (SEO), social media marketing, email marketing, and content marketing. It will help firms increase their online visibility and attract customers. (Alex Khang, 2024), (Chan, 2023).

5.2. Invest in Technology and Infrastructure

Traditional firms must invest in the necessary technology and infrastructure to transit to online sales successfully. This includes:

- **E-commerce Platform**: They should choose a reliable e-commerce platform. that can support various activities such as product listing, inventory management, payment processing, and order fulfillment. Platforms like Shopify, WooCommerce, and Magento are popular examples.

- **Website Development**: They should create a user-friendly website for the customers. It should be smoothly browsable and attractive for users. The website should be optimized for mobile devices. Because major portion of online shopping is done through smartphones. (fastercapital, 2023), (speedy paper, 2023)

- **Cybersecurity**: They have to take measures for cybersecurity. These will protect customer data and ensure secure transactions. Examples of cybersecurity measures are using secure payment gateways, encryption, and regular security audits. (Sheykin, 2024), (Digital Transformation in Nigerian Industries, 2024).

5.3. Enhance Digital Literacy and Skills

Most traditional farms' staffs are not good enough in technology. So during service delivery, they face serious problems. Farms can take some steps to face this problem-

- **Training Programs**: There should be regular training programs to develop employees' digital literacy. The employees should be trained on using e-commerce platforms, digital marketing tools, and data analytics. (Sheykin, 2024), (Meyer, October, 2023).

- **Workshops**: Farms should arrange workshops to develop the efficiency of staffs. Workshops may keep them updated about digital world. (Sheykin, 2024)

- **Partnerships with Educational Institutions**: There are many educational institutions. They develop customized training programs and courses to develop digital skills and e-commerce. Farms can develop training programs with the help of those institutions.

5.4. Develop a Customer-based Approach

The success of online sales depends on customer-based approach. (Sheykin, 2024), (en.asl., 2024). Traditional firms should focus on the following:

- **Customer Feedback**: In order to develop customer-based approach, one has to collect customer feedback. Farms employ different tools like surveys, review social media, on spot feedback box to collect feedback directly from the customers. These feedbacks are Used to improve products, services, and the overall customer experience. (fastercapital, 2023)

- **Personalization**: developing personalized product is a good option for farms to do customer based marketing. Deploying staffs to understand customer preferences and behavior is important. (fastercapital, 2023), (K, Jan-Feb 2024).

- **Customer Support**: The farms have to deliver excellent customer service. They can use channels like: live chat, email, and social media. They should solve the queries and problems of customers. (Sharma, 2023)

5.5. Optimize Supply Chain and Logistics

Traditional supply chain optimization generally assumes high capital availability for automation and proprietary software. But this thesis proposes a **Capital-Light Supply Chain (CLSC)** model. This model focuses on **Information Velocity** and **shared resources** instead of physical assets.

I. Using Data to Sync Inventory

Standard models need expensive and complicated systems. But this model proposes simpler and open system.

The Mechanism: Instead of a heavy software investment, firms utilize cloud-based storage system.

The Model: The firms collect real time data from the sales department and sends it to the factory. That helps the factory to produce according to the customer's choice.

Capital Impact: This optimizes stock levels and reduces excess inventory using existing digital tools rather than expensive infrastructure.

II. Logistics Partnerships

This model avoids hiring a provider. Instead of that, this model emphasizes Logistics Partnership.

The Mechanism: Traditional firms often do not have enough volume to negotiate the rates with shipping companies. This model proposes a collaborative transportation strategy where multiple companies combines shipments to make a better deal.

The Model: As this is a shared asset approach, the firms do not need to have their own delivery trucks. They can use the vehicles from their partners and make express or standard delivery.

III. Returns handling

Instead of treating return as a loss, this model integrates them as an advice to improve future experience.

The Mechanism: Returned products are sent to the research and development department.

The Model: the sales team provides the feedback and the return data directly back to the production and quality control stages. This is how the firm reduces future return rates.

Outcome: This is how the firm can find out the root cause of return and can take steps to mitigate that.

5.6. Foster Innovation and Adaptability

In order to be innovative and stay competitive Traditional firms should take a few necessary steps.

- **Innovation Culture**: They should develop a culture of innovation within the organization. They should encourage employees to innovate. This can be done through regular sessions.
- **Adapt to Market Changes**: They should be able to adopt market changes quickly. They should be also aware about emerging trends, customer preferences, and technological advancements. (Taherdoost, 2024)
- **Pilot Projects**: They should take pilot projects. They should test new ideas through pilot projects. This will help firms identify potential issues and make necessary changes.

5.7. Focus on Customer Trust and Loyalty

Traditional firms should be careful about the following issues.

- **Transparency**: They should be transparent in all business operations, pricing, product descriptions, and terms of service. This will help them to develop trust with their customers.
- **Loyalty Programs**: They should develop loyalty programs. Through loyalty programs, they should reward their loyal customers. This can include discounts, exclusive offers, and points-based systems. (Parker, 2022)
- **Community Engagement**: They should engage in customer communities. For example, social media, forums, and events. This will help build a loyal customer base and foster a sense of community. (fastercapital, 2023), (Taherdoost, 2024)

5.8. Monitor and Evaluate Performance

They should keep up regular monitoring and evaluation process. This will ensure the success of online sales initiatives. (Taherdoost, 2024). Firms should:

- **Key Performance Indicators (KPIs)**: They should introduce KPI to evaluate employee performance. This will help firms to find out the effectiveness of their online sales strategies. (Sheykin, 2024), (open-okolearnok, 2023).
- **Monitoring System**: They should develop strong monitoring system.
- **Continuous Improvement**: Company should go through regular improvements, checking, performance evaluation etc. (mktcc.blogspot, 2024)

These recommendations should be followed by the traditional farms. It will help them to overcome the challenges. In order to be successful, the farms should adopt an effective digital strategy, investment in technology and infrastructure, enhancement of digital literacy, customer-based approach, efficient supply chain, innovation, customer trust, and continuous monitoring. (Laylo, 2024).

Chapter 6. Conclusion

The traditional firms in Bangladesh are trying to adopt online sales services. This is both a challenging process. This thesis has studied the numerous obstacles these firms face. This study also analyzed the strategies and solutions that can support their transition to the digital marketplace. This study suggested some recommendations. These recommendations are designed to address the specific needs and challenges of traditional firms. That will ensure their successful adaptation to the online sales environment.

Transforming to digital transaction is now a days seen as necessity. Because consumers are increasingly shifting towards online shopping. If firms that fail to establish an online shop, they have risk to lose market. The online sales services offer various advantages. That include, expanded market reach, increased customer engagement, and enhanced operational efficiency. (Taherdoost, 2024)

There are several challenges that traditional firms in Bangladesh face. These challenges include low digital skills, inadequate technological infrastructure, logistical and supply chain issues, and lack of digital marketing strategy. In addition to that, there are some other barriers. We have our own traditional culture. Our culture is not always ready to accept something new. This Cultural resistance is a serious problem to adopt new technology. If we want to solve these challenges, we have to make planning, investment, and learning and adaptation. (mktcc.blogspot, 2024)

This thesis provides analyses the challenges and solutions for traditional firms in Bangladesh transitioning to online sales. This study left several areas for future research. Future studies could find out the impacts of digital transformation on different types of traditional firms. For example, impact on small and medium-sized enterprises (SMEs) versus larger corporations. In addition to that, research could examine the long-term effects of digital adoption on business performance, customer satisfaction, and market competitiveness. (fastercapital, 2023), (Tian, 2023), (VUniversity, 2023).

Another area for future research is 'the role of government policies and regulations in facilitating digital transformation'. policymakers and business leaders should understand the regulatory factors and its importance on online sales initiatives. Further research in this area can help them better understand.

While adopting online sales, the traditional firms are facing a number of challenges. But they also have a lot of opportunities. They have to adopt proper strategy including digital planning, investment in technology, enhancement of digital skills, and a customer-centric focus. If they follow the recommendations, they can avail the opportunities ahead.

The success depends on the ability of firms to adapt to the changing business environment, new innovation, and remain strong in the face of new challenges. By doing so, traditional firms can survive. (fastercapital, 2023)

If the firms follow these recommendations, traditional firms in Bangladesh can enhance their operational efficiency, expand their market reach, and build stronger relationships with their customers. This is a continuous process that, involves constant work, funding, and adjustment.

However, with the right strategies and commitment traditional firms can achieve remarkable success in online sales. (jurnalunmer, 2023), (Abu Nasser, (2024).)

Bibliography

(Ahmed S. &., Ahmed, S.Digital Transformation in Bangladesh: Challenges and Opportunities. , (2021))Chowdhury, N. (2020). Economic Impacts of E-commerce on SMEs in Bangladesh. *Bangladesh Economic Review*, 42(3), 87-101.

Khan, T. (2018). Navigating Regulatory Challenges for E-

"Online Business Idea in Bangladesh: Top 10 Profitable Opportunities". . (2024). *Online Business*.

3news. (2023). Retrieved from 3news: 3news.com

5 Traditional Retail Challenges To Go Ecommerce and How To Solve Them. (2024). *portcities*.

9 challenges for ecommerce businesses and ways to overcome them. (2023). *Zoho*.

Abu Nasser, B. S.-N. ((2024).). Artificial Intelligence in Digital Media: Opportunities, Challenges, and Future Directions. . *International Journal of Academic and Applied Research (IJAAR)* , 8 (6):1-10.

africadailynews. (2024). Retrieved from africadailynews: http://www.africadailynews.net

africadailynews.net. (2024). Retrieved from Africa digital news: www.africadailynews.net

Ahmed, S. &. ((2021)). Ahmed, S.Digital Transformation in Bangladesh: Challenges and Opportunities. . *Journal of Information Technology*, 15(2), 125-137.

Ahmed, S. &. ((2021).). Digital Transformation in Bangladesh: Challenges and Opportunities. . *Journal of Information Technology,*, 15(2), 125-137.

Ahmed, S. (2020). Government Initiatives and E-commerce Growth in Bangladesh. *Bangladesh Business Review,*, 155-162.

Alex Khang, R. G. (2024). *Data-Driven Modelling and Predictive Analytics in Business and Finance.* Newyork: Auerbach Publication.

apari-west. (2022). Retrieved from apari-west: apari-west.org

asaaseradio.com. (2024-26). Retrieved from asaaseradio.com.

Balancing State Security and Freedom of Expression: A Case Study of Bangladesh's Media Landscape. . ((2026).). *International Journal of Social, Political and Economic Research,* , 13(1), 29-47.

Bangladesh Telecommunication Regulatory Commission: Internet Users. (2021). Retrieved from BTRC: http://www.btrc.gov.bd

Chan, L. (2023, December 1). *How To Sell Banking Products.* Retrieved from robots.net: https://robots.net/fintech/how-to-sell-banking-products/

Child, D. ((2006).). *The Essentials of Factor Analysis.* Continuum International Publishing Group.

Chowdhury, M. A. (2020). Economic impacts of e-commerce on SMEs in Bangladesh. University Press.

Chowdhury, N. ((2020).). Economic Impacts of E-commerce on SMEs in Bangladesh. . *Bangladesh Economic Review,*, 42(3), 87-101.

Chowdhury, N. ((2021).). Competitive Dynamics in Bangladesh's E-commerce Sector. . *Journal of Business Studies, .*, 30(3), 112-124.

Chowdhury, N. (2020). Economic Impacts of E-commerce on SMEs in Bangladesh. _. *Bangladesh Economic Review_,*, 42(3), 87-101.

Chowdhury, N. (2021). Competitive Dynamics in Bangladesh's E-commerce Sector. *Journal of Business Studies*, 30(3), 112-124.

Davis. (1989).

Digital Bangladesh Vision 2021. (2020). Retrieved from Bangladesh Ministry of Planning: http://www.plancomm.gov.bd

Digital Transformation in Nigerian Industries. (2024). Retrieved from Disciplines In Nigeria: https://disciplines.ng/digital-transformation-in-industries

Dillette, A. &. (2020). Diffusing innovation in times of disasters: considerations for event management professionals. . *Journal of Convention & Event Tourism,* , 22(3), 197–220.

El-Bassiouny, D. M. (2016). Perceptions and Drivers of CSR in Developing Countries:.

en.asl. (2024, feb 1). Retrieved from https://en.asl.com.cn/: https://en.asl.com.cn/

Facts About shop mother's day jewelry Revealed. (2024). Retrieved from websitedesign: https://websitedesign66433.blogolize.com/

fastercapital. (2023). Retrieved from fastercapital: fastercapital.com

Freund, J. E. ((2006).). *Modern Elementary Statistics. .* Pearson Education.

Gareth James, D. W. (2013). *An Introduction to Statistical Learning.*

Gebeyehu, G. (October, 2023). Service Quality Improvement of Healthcare Through Complex.

guman. (2023). Retrieved from guman: http://www.guman.com.pk

Hafinaz, H. R. (2025). *Recent Research in Management, Accounting and Economics (RRMAE).* London: Routledge.

Hastie, T. T. ((2009).). The Elements of Statistical Learning: Data Mining, Inference, and Prediction (2nd ed.). Retrieved from Springer-Verlag. : https://doi.org/10.1007/978-0-387-84858-7

hdl. (2022). Retrieved from hdl: hdl.handle.net

He, P. L. (2021). Translanguaging, Trans-semiotizing, and Trans-registering in a Culturally and Linguistically Diverse Science Classroom. . *Translanguaging in Science Education. Sociocult*.

Hossain, M. &. ((2020).). International Journal of Logistics Research, . *Logistical Challenges in E-commerce for Bangladesh.* , 5(1), 85-97.

Hossain, M. &. ((2020).). International Journal of Logistics Research,. *Logistical Challenges in E-commerce for Bangladesh.*, 5(1), 85-97.

how to start a business in egypt. (2023). Retrieved from businessendo: businessendo.com/how-to-start-a-business-in-egypt/

How to Start an Online Business in Bangladesh. ((2024)). Retrieved from pagescan: www.pagescan.com

How To Start Online E-commerce Business In Banglades. (2024). Retrieved from www.efirm.com

https://vietnamnews.vn/economy/1662455/efforts-underway-in-bac-giang-to-create-more-favourable-business-environment.html. (2024). Retrieved from https://vietnamnews.vn/economy/1662455/efforts-underway-in-bac-giang-to-create-more-favourable-business-environment.html: https://vietnamnews.vn/economy/1662455/efforts-underway-in-bac-giang-to-create-more-favourable-business-environment.html

Ida Skubis, R. W. (2024). AI and Human-Centric Approach in Smart Cities Management: Case Studies from Silesian and Lesser Poland Voivodships. *sustainibility*.

iiespace. (2025). Retrieved from iiespace: iiespace.iie.ac.za

Ijisrt.com. (2023).

investopedia. (2024). Retrieved from investopedia: https://www.investopedia.com/terms/s/standarddeviation.asp

Islam, M. &. ((2019).). Customer Trust in E-commerce: A Bangladeshi Perspective. *Journal of Consumer Studies, .*, 20(2), 89-101.

Islam, M. &. ((2019).). Customer Trust in E-commerce: A Bangladeshi Perspective. . *Journal of Consumer Studies,* , 20(2), 89-101.

Isnaini, S. &. ((2024).). The Role of AI in Enhancing Marketing Communication: Implications for Policy and Development in Indonesian Higher Education. . *Studies in Media and Communication,* , 12(4), 10-16.

journal2. (2024). Retrieved from journal2: journal2.unfari.ac.id

journalcra. (2024). Retrieved from journalcra: journalcra.com

jurnalunmer. (2023). Retrieved from jurnalunmer: jurnalunmer.ac.id

K, D. (Jan-Feb 2024). A Reseach on Consumer Loyalty. *International Journal of Scientific Research and Engineering Development*, Volume 7 Issue 1.

Karim, A. ((2019).). Financial Barriers to Digital Transformation in SMEs. *Journal of Financial Management.*, 8(4), 223-237.

Khan Academy - Statistics and Probability. (2026). Retrieved from Khan Academy - Statistics and Probability: https://www.khanacademy.org/math/statistics-probability

Khan Academy. (2024). Retrieved from Khan Academy: khanacademy.com

Khan academy. (2026). Retrieved from Khan Academ.

Khan, T. ((2018).). Navigating Regulatory Challenges for E-commerce in Bangladesh. *Journal of Business Law, 8(1)*, 45-59.

Khoury, R. E. (2024). *Anticipating Future Business Trends: Navigating Artificial Intelligence Innovations.* springer.

Laylo, T. I. (2024). Strategic Analysis of Business Positioning Through Web Intelligence Technologies: A Study on Adaptive Models and Approaches. *Internet of Things, Smart Spaces, and Next Generation Networks and Systems* (pp. 309-317). Springer.

McClave, J. T. ((2006).). *Statistics. .* Pearson Education.

Meyer, P. (October, 2023). Entrepreneurship in the Global Arena: Case Studies. *Journal of Research in International Business and Management (ISSN: 2251-0028)*, Vol 10 (5).

Milliken, E. J. (2009). *Factor Analysis in Practice.*

Min Ma. (2024,). Smart urban progress as a tool to assess urban and environmental sustainability: a case study of Zhenjiang, China,. *International Journal of Low-Carbon Technologies,* , Volume 19, Pages 1850–1863.

mktcc.blogspot. (2024). Retrieved from mktcc: https://mktcc.blogspot.com/

Mojtaba Ghorbani Asiabar, M. G. (2023). Exploring the role of human brands in developing the sharing economy: A futures research study. *Research Square*.

Muhammad Hakiki, R. F. (2023). Exploring the impact of using Chat-GPT on student learning outcomes in technology. *Advances in Mobile Learn Educ Res*, 859-872. Retrieved from syncsci: http://www.syncsci.com

myassignmenthelp. (2024). Retrieved from myassignmenthelp: myassignmenthelp.com

Nargis Hakimi, M. H. (2024). Challenges and Opportunities of E-Learning for Women's Education in Developing Countries: Insights from Women Online University. *Journal of Emerging Issues and Trends in Education,* , 1,(1)57-59.

Newbold, P. C. ((2012).). *Statistics for Business and Economics (8th ed.). .* Pearson Education.

Nguyen, S. (2024). 5 Steps to Achieve 7 Figures eCommerce: Case study and Common mistakes. *Mageplaza*.

Nurtey, L. (2024). *Recent achievements in macroeconomic stability demonstrate our resilience and determination – Finance Minister.* 3news.com. Retrieved from 3news.com.

open-okolearnok. (2023). Retrieved from open-okolearnok: open-okolearnok.org

Pallant, J. ((2020).). *SPSS Survival Manual: A Step by Step Guide to Data Analysis Using IBM SPSS (7th Edition).* McGraw-Hill Education.

Parker, M. (2022). *The Power of Customer Loyalty in Business: A Comprehensive Guide to Long-Term Success.* Stream Loyalty. Retrieved from streamloyalty: http://www.streamloyalty.com

patentimages. (2023). Retrieved from patentimages: patentimages.storage.googleapis.com/

Paul Newbold, W. L. (2012). *Statistics for Business and Economics.*

Paul Newbold, W. L. (2023). *Statistics for Business and Economics.*

Rahman, A. &. ((2018).). Skills Gap in the E-commerce Sector in Bangladesh. . *Journal of Human Resource Development, .*, 16(2), 176-190.

Rahman, A. &. (2019). Overcoming Cultural Resistance to Digital Transformation in Bangladeshi SMEs. . *International Journal of Business and Management, 14(4)*, 225-239.

raijmr.com. (2023). Retrieved from www.raijmr.com

Rakhimova N., M. K. (2024). SOME SPECIES AND FORMS OF THE TASHKENT BOTANICAL GARDEN (UZBEKISTAN),. *POLISH JOURNAL OF SCIENCE*, 77. Retrieved from poljs: http://www.poljs.com

repository. (2023). Retrieved from repository: http://repository.unj.ac.id/27875/5/CHAPTER%204.pdf

Rogers. (2003). *Diffusion of Innovations theory .*

S, D. &. ((2024).). EXPLORING DIGITAL FINANCIAL LITERACY AND SERVICES KNOWLEDGE: A COMPREHENSIVE STUDY AMONGST COLLEGE STUDENT. *ShodhKosh: Journal of Visual and Performing Arts, 5(1),*, 839–850.

Saha, P. S. (2026). *When Data Protection Fails to Protect: Law, Power, and Postcolonial Governance in Bangladesh. .* Retrieved from https://doi.org/10.1145/3491102.43

Samani, N. (2023). *deskera*. Retrieved from deskera: https://www.deskera.com/blog/customer-satisfaction-order-management/

Selam HA, U. P. (2023). Fasting during Ramadan and Diabetes Management: A Community Based Survey. . *Clin Diabetes Research*, 6(1):68-76.

Sharma, S. (2023). *How to Provide More Value to Your Customers And Scale Your Company?* The office pass. Retrieved from theofficepass: theofficepass.com

Sheykin, H. (2024). *How to Launch a Wine and Spirits Marketplace: The Ultimate Guide.* Finmodelslab. Retrieved from finmodelslab: http://www.finmodelslab.com

Shofiro, N. (2023). E-commerce Ecosystems and Their Role in Education and Digital Business Growth: A Literature Review. *Preprints*.

Sio, J. D. (2014). Influence of Pozzolanic Material in the Conversion and Corrosion cement.

sleeknote. (2023). Retrieved from sleeknote: http://www.sleeknote.com

speedy paper. (2023). Retrieved from speedy paper: http://www. speedy paper.x10.mx

statrek. (2023). Retrieved from statrek: https://stattrek.com/statistics/dictionary?definition=maximum

syncsci. (2023). Retrieved from syncsci: http://www.syncsci.com

Taherdoost, H. (2024). *Roadmap, Digital Transformation.* CRC press.

Taylor, S. ((2020).). *Introduction to Statistical Methods.*

Technologies, M. (2023, August 7). *chaindrive*. Retrieved from chaindrive: chaindrive.com

Them"., •. (2024). 5 Traditional Retail Challenges To Go Ecommerce and How To Solve. *Retrieved from Portcities*.

Tian, Z. Y. (2023). Analysis of Surface and Building Deformation by Shield Tunneling through Geology. . *Applied Sciences*, 13(20), 11155.

Trevor Hastie, R. T. (2023). *The Elements of Statistical Learning.*

VUniversity. (2023). Retrieved from VUniversity: https://vuniversity.in/target-markets/#google_vignette

Walker, J. (2018). *The Book of Statistical Techniques .*

Weiss., N. A. (2016). *Introductory Statistics.*

Wichern, R. A. (2018). *Applied Multivariate Statistical Analysis.*

wipo.int. (2023). Retrieved from wipo.int.

Xuetao Li, Z. W. (2024). An advanced framework for net electricity consumption prediction: Incorporating novel machine learning models and optimization algorithms. *Energy*, volume 296.

Zhixuan Wang, M. L. (2023). A Study on the Talent Development Model for Low-Carbon Logistics in Response to Cross-border E-commerce Supply Chains. . *Journal of Human Resource Development* , Vol. 5: 26-34.

commerce in Bangladesh. *Journal of Business Law*, 8(1), 45-59.

Rahman, A., & Rahman, M. (2019). Overcoming Cultural Resistance to Digital Transformation in Banglad eshi SMEs. *International Journal of Business and Management*, 14(4), 225-239.