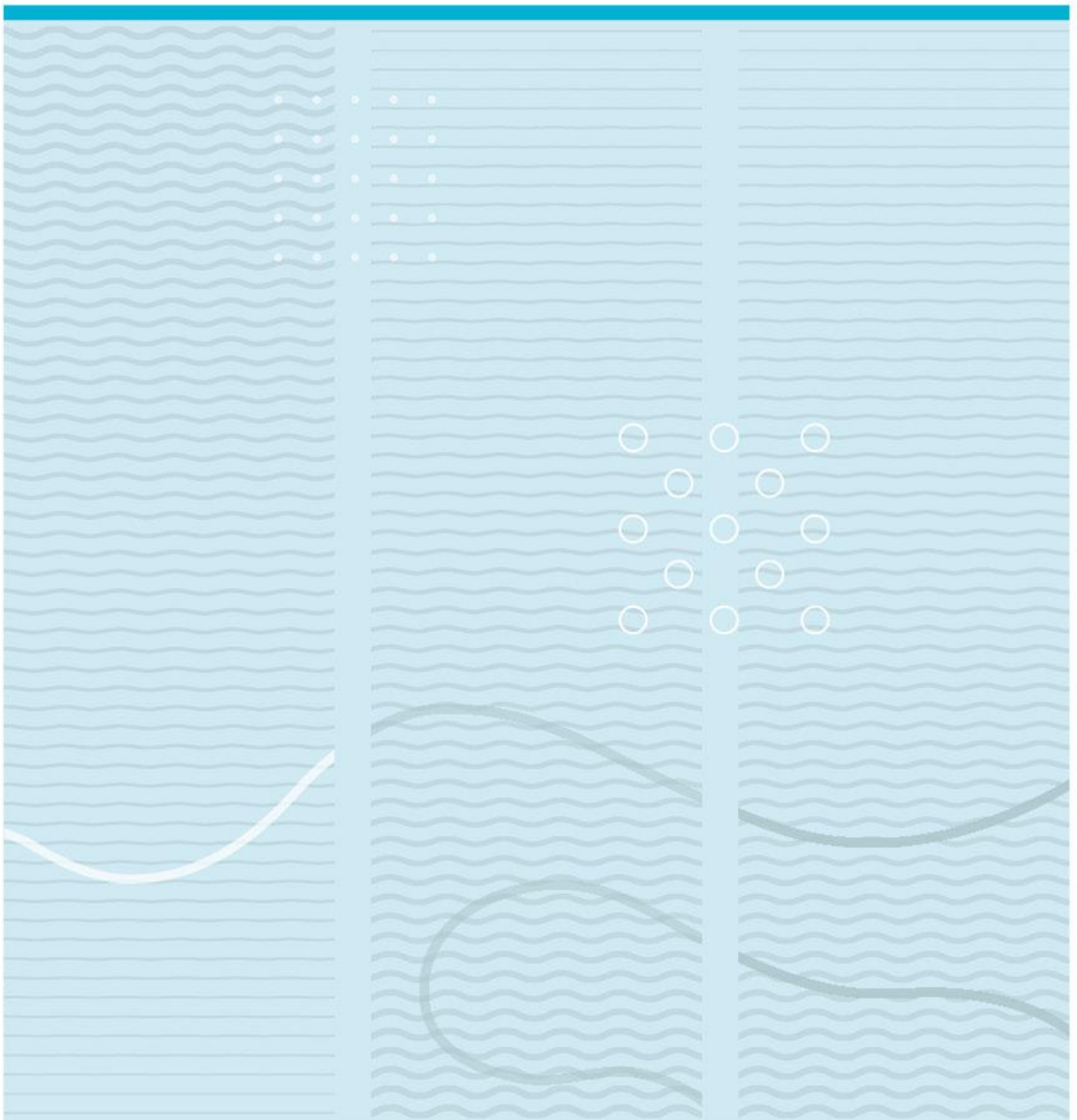


Shams Sharafi

Enhancing Innovation and Technological Efficiency in Bangladesh SMEs: Investigating the Impact of E-commerce Adoption



University of South-Eastern Norway
USN School of Business
Department of Economics, Marketing and Law
PO Box 235
NO-3603 Kongsberg, Norway

<http://www.usn.no>

© 2023 Shams Sharafi

This thesis is worth 30 study points

Acknowledgements

First and foremost, I am immensely grateful to almighty Allah for the help and blessings. Also all the individuals who have contributed to the completion of this thesis.

I would like to thank Professor Anh Nguyen Duc for supervising my thesis. Additionally, I would like to thank Professor Karen Stendal for her support during my academic journey. I would also like to express my thanks to the faculty members of USN School of Business, who have enriched my academic experience with their knowledge and wisdom.

I am also thankful to the research participants and all those who provided assistance in data collection, whether in a big or small way.

Last but not least, I am deeply indebted to my family and friends for their unwavering belief in me. I want to thank the universe and all the unknown forces that guided me and brought various opportunities into my life.

Ringerike, 19 November, 2023

Shams Sharafi

Abstract

In today's fast business world, e-commerce has become a game-changer for small and medium-sized enterprises (SMEs) in Bangladesh. Small businesses can use digital platforms to explore new markets, overcome limitations and reach more customers. Embracing e-commerce not only enhances their visibility but also it creates opportunities for innovation and heightened technological efficiency. The purpose of this study are: (1) Key factors affecting e-commerce adoption in SMEs' innovation and technological operations; (2) Challenges and barriers encountered by SMEs in Bangladesh during the adoption of e-commerce for their innovation and technological processes; and (3) The impact of e-commerce adoption on innovation and technological efficiency within Bangladeshi SMEs. This qualitative research looks at how small businesses in Bangladesh are using e-commerce to become more innovative and use technology better. The study aims to pinpoint the key factors influencing SMEs' decisions to adopt e-commerce in their operations, exploring what makes technology and innovation efficiency get better. Ultimately, the study's findings aim to help Bangladeshi SMEs with the knowledge, ideas and inspiration to use technology, innovation, and e-commerce more effectively.

Keywords: *E-commerce, innovation, technological efficiency, small and medium-sized enterprises (SMEs).*

Table of Contents

1	Introduction.....	7
1.1	Motivation of the Research	8
1.2	Problem Statement	9
1.3	Research Aims and Objectives	9
1.4	Research Questions	10
1.5	Significance of Study.....	10
1.6	Thesis Structure	11
2	Background.....	12
2.1	Fundamental of E-commerce	12
2.1.1	E-commerce.....	12
2.1.2	E-commerce Applications	13
2.2	Innovation in E-commerce.....	14
2.3	Technological Efficiency in E-commerce	16
3	Methodology	18
3.1	Research Design.....	18
3.2	Sampling.....	19
3.2.1	Company Profiles.....	20
3.2.2	Participant Profiles	22
3.3	Data Collection Methods.....	23
3.3.1	Data Sources.....	23
3.4	Data Analysis.....	24
3.5	Ethical Considerations	28
3.6	Threats to Validity.....	29
4	Results	30
4.1	RQ1.....	31
4.1.1	Business Advancements.....	31
4.1.2	Customer-Centric Benefits.....	32
4.2	RQ2.....	33
4.2.1	Operational Challenges	33
4.2.2	Strategic Considerations	34
4.3	RQ3.....	35

4.3.1	Technological Advancements	35
4.3.2	Business Process Enhancements	35
4.3.3	Digital Presence and Engagement	36
4.3.4	Business Growth and Innovation	37
5	Discussion	38
5.1	Summary of Findings	38
5.1.1	Factors Affecting E-commerce Adoption	38
5.1.2	Challenges and Barriers.....	39
5.1.3	Impact of E-commerce on Technological Efficiency.....	40
5.1.4	Economic Growth and Social Impact.....	40
5.1.5	Contributions and Implications.....	41
5.2	Limitations.....	42
5.3	Future Directions	42
6	Conclusion	44
	References	45
	Appendix A: Interview Guide.....	50
	Appendix B: Transcripts of Interviews.....	50
	Appendix C: Initial Coding Framework	70

List of Figures

Figure 1: Types of E-commerce	14
Figure 2: Technological Efficiency and Innovation Core Concept.....	17
Figure 3: Main Steps of Research Plan	19
Figure 4: Example of Data Analysis Steps	26
Figure 5: Conceptual E-commerce Adoption Dynamics Model	30

List of Tables

Table 1: Selected SMEs Profiles	21
Table 2: Selected Participants Profiles	23
Table 3: Axial Coding Framework	26

1 Introduction

Over time, e-commerce has evolved, extending its reach beyond traditional buying and selling to include online logistics operations and various organizational management tasks (Jahanshahi et al., 2013). Small and Medium Enterprises (SMEs) play a crucial and multi-faceted role in the economic development of Bangladesh. They are the backbone of the country's industrial sector, employing a significant portion of the workforce and contributing substantially to the overall GDP (Hossain, 2016). According to data from the Bangladesh Bank, SMEs are responsible for employing the majority of industrial workers, showcasing their pivotal role in job creation and livelihood opportunities (Begum et al., 2022).

These SMEs operate across diverse industries, including manufacturing, services, and agriculture, making them integral to the growth and expansion of the national economy. In the manufacturing sector, SMEs contribute to the production of various goods, ranging from textiles and garments to electronics and handicrafts (Thong & Yap, 1995). In the services sector, they provide a wide range of services such as retail, hospitality, transportation, and information technology, catering to the needs of both domestic and international markets. Additionally, SMEs in the agriculture sector play a vital role in food production, processing, and distribution, ensuring food security and supporting rural livelihoods (Thong & Yap, 1995).

SMEs also play a vital role in driving employment, technological advancements, and competitive advantages in both developed and developing countries (Jahanshahi et al., 2013). In today's business world, small and medium-sized enterprises (SMEs) are increasingly turning to e-commerce to enhance performance, gain sustainable competitive advantages, and secure long-term success (Ghobakhloo et al., 2011). Recognizing the significance of SMEs, many governments have implemented supportive policies and incentives to encourage the adoption of e-commerce among SMEs (Thong & Yap, 1995). The research shows that small and medium businesses are really important for Bangladesh's economy. It also points out how ecommerce business are becoming more and more important for new ideas and technology in the country. However, even though the e-commerce industry is growing fast in the country, the adoption of e-commerce within SMEs' innovation and technological operations is still in its early stages (Meng et al., 2021). This study seeks to fill this gap by investigating the factors affect e-commerce adoption among SMEs in Bangladesh. By understanding the challenges and barriers faced by SMEs in adopting e-commerce and analyzing the

impact of e-commerce adoption on innovation and technological efficiency, these valuable insights can be gained to promote the effective integration of e-commerce in SMEs' innovation and technological operations. This study adds to the existing literature on the adoption of e-commerce in innovation and technological operations, with a particular focus on developing nations like Bangladesh. It offers valuable insights that benefit SMEs, policymakers, and researchers alike. The research also emphasizes the importance of conducting a thorough evaluation of the innovative technology associated with e-commerce adoption. By enhancing innovation and technological efficiency through the integration of e-commerce, SMEs in Bangladesh can gain a competitive edge, achieve cost reduction, and experience increased profitability. The findings of this study can contribute to a deeper understanding of the potential advantages and considerations related to e-commerce adoption in the context of innovation and technological operations within the SMEs sector.

1.1 Motivation of the Research

E-commerce has experienced significant global growth and is now an essential part of modern business operations. The Bangladesh government aims to create a digitalized country and achieve the vision of a 'Digital Bangladesh'. While there has been considerable progress over the years, the full potential of the e-commerce industry in the country remains undeveloped (Hossain, 2016). With a large and youthful population, the nation has entered the era of population dividend, and their potential should not be underestimated, as seen through their active involvement in various movements in recent times. However, the adoption and implementation of e-commerce practices vary across different countries and regions due to diverse cultural, economic, and infrastructural factors. Bangladesh, being a developing country with a burgeoning economy, is no exception to this trend (Hossain, 2016). The motivation behind this research is to explore how e-commerce is being adopted in Bangladesh, especially among Small and Medium Enterprises (SMEs), which play a significant role in the country's business scene.

These papers cover various aspects of e-commerce in Bangladesh and also create motivation for this research, including the effects of buying culture and e-infrastructure on the implementation of Business-to-Consumer (B2C) e-commerce (Azam, 2007), the influence of organizational characteristics on e-commerce adoption by SMEs (Azam & Quaddus, 2009), as well as the opportunities and challenges faced by e-commerce businesses in Bangladesh (Bappy & Azim, 2018).

Additionally, the role of innovation (Hryshkevich, 2022) and technology (Bhagat, 2021) in fostering e-commerce growth has been highlighted in the context of global trends. Specific frameworks for implementing e-commerce in developing countries and SMEs, including Bangladesh, have also been proposed (Karim et al., 2018). Furthermore, the studies discuss the importance of ICT adoption in the context of SMEs in the service sector (Mirza et al., 2016) and analyze the overall development of SMEs in Bangladesh, addressing the problems and prospects (Zaman & Islam, 2011). In Bangladesh, the implementation of e-commerce is confronted with significant challenges and barriers that cannot be ignored. One of the major hurdles is the need to bolster technological capabilities and encourage innovation to facilitate seamless e-commerce adoption. The challenges and potential obstacles are the primary motivation for researching this topic. By studying the role of technology and innovation in this context, I aim to contribute to the success of e-commerce in the country.

1.2 Problem Statement

The implementation of e-commerce in Bangladesh faces significant challenges and barriers, including technological limitations and the need for innovation. These obstacles hinder the seamless adoption of e-commerce practices in the country. Understanding and addressing these challenges are crucial for fostering the growth and success of e-commerce in Bangladesh. The main problem statement is to explore the dynamics of e-commerce adoption in the context of Bangladesh and identify strategies to overcome the identified barriers, with a particular focus on enhancing technology and innovation to facilitate the integration of e-commerce into the local business landscape.

1.3 Research Aims and Objectives

Aim:

The aim of this research is to investigate the impact of innovation and technology on e-commerce adoption in Bangladesh and to identify strategies to leverage these aspects for successful implementation.

Objectives:

- To assess the current state of e-commerce adoption in Bangladesh, focusing on the level of technological readiness and innovation in the business landscape.
- To identify the technological challenges and limitations that hinder the widespread adoption of e-commerce practices in the country.
- To understand the role of innovation in driving e-commerce growth and its potential to address specific challenges faced by businesses in Bangladesh.

- To investigate consumer behavior and preferences related to technology adoption and e-commerce, and how these factors influence the market demand.
- To provide guidelines and recommendations for businesses, particularly SMEs, on adopting and integrating innovative technologies to improve their e-commerce capabilities.

1.4 Research Questions

RQ1. How the key factors influence the adoption of e-commerce in the innovation and technological operations of SMEs in Bangladesh?

RQ2. How do SMEs in Bangladesh specifically face challenges and barriers when adopting e-commerce for their innovation and technological operations?

RQ3. How does the adoption of e-commerce impact innovation and technological efficiency in SMEs in Bangladesh?

1.5 Significance of Study

By focusing on the role of innovation and technology in e-commerce adoption, the research address key challenges and barriers faced by businesses in the country. First, it can help the economy grow by opening up new business opportunities, reaching more customers, and making business operations more efficient. Second, it enables small businesses to use e-commerce, which increases productivity, creates jobs, and strengthens the overall economy. Third, this study can provide valuable insights for policymakers to develop targeted initiatives and policies that support the growth of e-commerce and technological innovation. Additionally, it contributes to advancing knowledge in the field, also helps researchers and people in business. Furthermore, understanding consumer behavior and technology preferences promotes digital inclusivity, ensuring the benefits of e-commerce reach all segments of society. Lastly, insights from successful best practices can facilitate international collaboration, encouraging global partnerships in e-commerce development. In short, this research carries the potential to create a successful and transformative e-commerce environment in Bangladesh.

1.6 Thesis Structure

In this thesis, the content is structured into six distinct sections, with each section dedicated to exploring a different aspect of the study.

Section 1: Introduction - This section encompasses the research's motivation, the problem statement, the study's aims, and objectives, along with the research questions introduced in this chapter. It further highlights the significance of the study and outlines the organization of this thesis.

Section 2: Background - This section provides background context for the research topic and conducts a comprehensive review of related literature by other researchers. The aim is to identify the research gap that this study seeks to address. This analysis is vital for establishing the research's significance and guiding the subsequent investigation.

Section 3: Methodology - This section outlines the research design employed in the study, detailing the research strategy and methodology used for data collection and explains the data analysis techniques employed.

Section 4: Results - In this section, the main findings and outcomes of the study will be presented.

Section 5: Discussion - This part goes into more detail about the findings and their relation to the theoretical background. Additionally, the limitations of the study are discussed to provide a comprehensive understanding of the research outcomes and future research.

Section 6: Conclusion - In this section, the main supporting ideas discussed throughout the work are summarized.

2 Background

This section will describe the related theoretical background of e-commerce has evolved considerably, with a focus on applications, innovation, and technological efficiency.

2.1 Fundamental of E-commerce

Because of advancing technology and changing customer preferences, e-commerce is currently the fastest-growing business sector. Since the advent of the Internet, easy to use websites, reliable online payment methods, high-speed broadband, smartphones, and tablets, there has been an increase in e-commerce and digital presence globally (Ayyagari, 2007). From a retailer's perspective, the fundamental market principles of supply and demand also extend to e-commerce. While "e-business" is a broader term, in this context, we'll use "e-commerce" since every business engages in the buying or selling of products and services (Jahanshahi, 2013).

2.1.1 E-commerce

Chaffey, D. (2009) defines "e-Commerce was the exchange of information across electronic networks, at any stage in the supply chain, whether within an organization, between businesses, between businesses and consumers, or between the public and private sector, whether paid or unpaid". E-commerce and transaction cost is relate to each other. Transaction cost is a theoretical framework that e-commerce organizations can use to examine costs and make decisions (Schneider, 2015). It can be applied to assess make-or-buy decisions, platform choices, supply chain relationships, and contract design, enhancing the efficiency and effectiveness of e-commerce operations (Schneider, 2015). Initially, there was a conceptual debate about whether the traditional way of doing business could be transformed into a new approach through the internet (Hossain et al., 2013). Consequently, e-commerce became popular as a business tool for information sharing and search. It is related to e-commerce. Over the time, this eventually led to a change in viewpoint, and e-commerce being defined as the process of purchasing and selling goods and services online (Hossain et al., 2013).

Since the beginning in the 1970s, e-commerce has come to be broadly defined. It has made a late entry in Bangladesh compare to the rest of the world. It has start in the late 90s with an initial emphasis on sending and receiving gifts from overseas (Hossain et al., 2013). Hossain et al., (2019) describe it as any business based on the internet, leveraging communication and information technology to share information among stakeholders. It is characterized by being technology-driven,

involving business model innovation, and facilitating quick scale expansion. E-commerce has brought significant shifts in business paradigms worldwide, impacting marketers and customers alike through data analytics and transactions. With the help of new technology and social commerce, companies can now engage with various stakeholders through different online channels (Ayyagari et al., 2007). Different organizations may view e-commerce from various angles. Some focus on consumers from a marketing perspective, serving various utilities through a static online presence (Batra and Arora, 2020). However, this definition might be debatable.

E-commerce brings significant advantages to companies across different dimensions. Firstly, it elevates the customer experience by providing exceptional services, a diverse product range, and the flexibility of round-the-clock purchasing. Secondly, it streamlines company operations by reducing market entry barriers, cutting distribution costs, and improving marketing and distribution efficiency (Kapurubandara & Lawson, 2008). Furthermore, e-commerce enhances communication efficiency among various stakeholders, both internal and external to the company. These positive transformations in business practices benefit all parties involved, making e-commerce a game-changer in the business world. In this study, e-commerce will be considered as digitalization of business and its process which means a comprehensive usages of technology and innovation not only within organization but also with the all involved business partners in the context of Bangladesh.

2.1.2 E-commerce Applications

E-commerce applications, as a practical implementation, closely relate to e-commerce business theories. They manifest core concepts like market entry strategies, transaction cost analysis, platform governance, and customer behavior theories (Ngai and Gunasekaran, 2007; Schneider, 2015). The theories guide the development and optimization of e-commerce applications, ensuring alignment with business goals, efficiency, and profitability (Ngai and Gunasekaran, 2007). The internet has profoundly transformed numerous facets of society, spanning domains such as commerce, leisure, culture, communication, technology, shopping, and travel. The classical application of e-commerce involves transforming key business processes through the use of the internet (Schneider, 2015). This emergent mode of communication has ushered in innovative avenues for conducting business, harnessing the power of technological progress (Hossain, 2016). E-commerce applications serve as instrumental gateways to the online realm, facilitating the acquisition of goods and services. These applications perpetually evolve in response to the rapid pace of technological advancement (Ngai and Gunasekaran, 2007; Schneider, 2015). This encompasses various types of e-commerce, such as

business to business (B2B) and business to customers (B2C), spanning different functional areas of business. Previous research on e-commerce applications in SMEs has reviewed areas like electronic advertising, electronic marketing, customer support service, order and delivery, and online payment (Ghobakhloo et al., 2015).

In B2B simply defined as e-commerce between companies (Ghobakhloo et al., 2015) and B2C is normally selling partner is a business organization but not a must (Azam, 2007). However, despite the potential benefits, many SMEs have not fully embraced e-commerce applications. Studies show that e-commerce adoption by SMEs in developing countries is low and primarily limited to basic applications like email or web presence (Hasan et al., 2020). Even in South East Asian countries, only a small percentage of SMEs have reached an advanced level of e-commerce adoption (ERIA cited in OECD, 2019). Bangladesh's SMEs also face similar challenges. Studies highlight that many SMEs in Bangladesh have not implemented advanced e-commerce applications like integration or enterprise solutions, with most websites serving primarily as advertising and marketing tools (Billal et al., 2019). The limited adoption of advanced e-commerce is attributed to financial constraints, as these applications often require substantial investments. In this study, we will discuss the B2B and B2C organization as it part of the companies that we interviewed. It will support this study purpose in the context of Bangladesh.

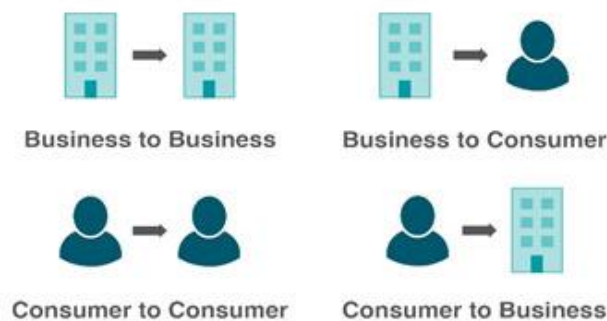


Figure 1: Types of E-commerce (Ghobakhloo et al., 2015; Azam, 2007)

2.2 Innovation in E-commerce

The term "Innovation" in e-commerce describes the development and execution of creative ideas, tools, procedures, or business frameworks with the goal of improving online sales and customer satisfaction, enhancing productivity, and creating a competitive edge in the digital marketplace (Pease et al. 2007). In e-commerce, innovation adoption theory encompasses awareness, interest, and assessment. (Pease et al. 2007). Technological adaptation and innovative endeavors play a pivotal role in driving the growth of small and medium enterprises (SMEs) through enabling diversification in production and

processes. Additionally, open innovation practices, particularly among SMEs, are influenced by distinct attributes of various firms, leading to diverse impacts accordingly (Meng et al., 2021). A major factor in success and expansion in the dynamic world of e-commerce is innovation. Adopting new techniques and embracing technological improvements can have a big impact on the customer experience and overall performance of the business. (Meng et al., 2021). Implementing e-commerce in the context of Bangladesh SMEs can foster innovation in several ways. For example, the use of e-commerce requires SMEs to embrace technology, such as digital marketing tools, online payment systems, and other management software. Using these technological developments enhance and encourages innovation within the company and the search for new ways to improve customer satisfaction and operational efficiency. SME's can broaden their market presence, enhance productivity, and maintain their competitiveness in the quickly changing business environment by utilizing these digital technologies (Meng et al., 2021).

The integration of technology enables SMEs to cater to changing customer demands, optimize processes, and establish a strong online presence, leading to sustainable growth and success in the e-commerce realm (Hossain, 2016; Arumugam et al., 2020). E-commerce platforms play a vital role in fostering collaboration among businesses, encouraging SMEs in Bangladesh to form strategic partnerships with complementary industries. These collaborations lead to innovative solutions through shared resources and ideas, enabling SMEs to leverage strengths, expand offerings, and access new markets for mutual growth and competitive advantage (Islam, 2018). The collaborative ecosystem nurtured by e-commerce platforms empowers SMEs to collectively innovate, adapt, and thrive in the dynamic business landscape, bolstering their position in the evolving e-commerce market (Islam, 2018). E-commerce platforms generate important customer data by providing insights into purchase trends, preferences, and behavior (St-Aubin, 2022).

For SMEs, this data is a treasure trove of opportunities. Through the use of consumer insights, SMEs can innovate product development, marketing strategies, and customer service. Personalization becomes feasible, tailoring offerings to individual preferences landscape (Karim et al., 2018). Data-driven decision-making empowers SMEs to optimize operations, enhance customer experiences, and stay ahead of the competition. This data-driven strategy is essential for success in the dynamic world of e-commerce (Karim et al., 2018). E-commerce enables SMEs in Bangladesh to access niche markets that may not be easily reachable through traditional setups. SMEs can develop creative product differentiations and increase consumer loyalty by serving untapped niches. The global reach of e-

commerce enables small and medium enterprises (SMEs) to connect with niche audiences worldwide, fostering business growth and establishing a strong brand presence. (Hossain et al., 2013). This study will cover the e-commerce innovation in products and processes, trust building in the businesses and organizations; how innovation can motivate the e-commerce adoption process in the context of Bangladesh.

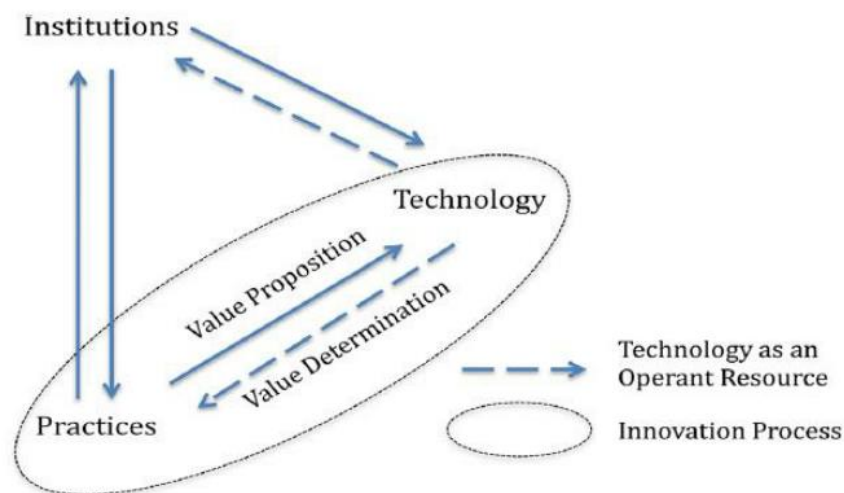
2.3 Technological Efficiency in E-commerce

The ability of a technology, system, or process to produce the best possible results with the least amount of input or resources is referred to as technological efficiency (Dimelis et al., 2011). The theory of technological efficiency is based on the concept that innovations and technological advancements can result in more efficient production, use of resources, and overall economic performance. This includes innovation with ongoing development, cost reduction, productivity improvement, and resource optimization (Dimelis et al., 2011; Ray, 2011). Technological efficiency plays a crucial role in the successful implementation of e-commerce for SMEs in Bangladesh. Efficient e-commerce technology allows SMEs to establish a strong digital presence. SMEs can stay competitive in the dynamic e-commerce world by leveraging data-driven insights and streamlined processes to facilitate innovation and informed decision making. Smooth transactions further increase client satisfaction, which drives expansion and success (Bhagat, 2021).

Technology-driven innovation is associated with technological efficiency in e-commerce. This includes innovations and creative thinking that take place in line with the creation of innovative technological capacities (Islam, 2018). Numerous corporate operations, including order processing, customer service, and inventory management, can be made more efficient by technology. SMEs can save operating expenses and more effectively use resources by automating certain operations, freeing up funds for expansion and innovation (Islam, 2018). Technologies related to e-commerce provide insightful data about consumer behavior, preferences, and market trends. SMEs in Bangladesh can use this data to find areas for innovation and improvement, create focused marketing campaigns, and make data-driven decisions. By utilizing such information, SMEs may improve client experiences, streamline their e-commerce operations, and maintain their competitive edge in the market (Mirza et al., 2016).

Additionally e-commerce technology allows easier payment solutions to the customers. By implementing secure and efficient payment gateways, Bangladeshi SMEs can provide customers with a wide range

of payment options, enhancing transaction convenience and bolstering customer trust (Azam & Quaddus, 2009). This assures easy and trouble-free online shopping, which makes clients happy and promotes recurring business. Trust in safe payment options increases SMEs credibility in the e-commerce sector, resulting in more devoted clients and long-term success (Hryshkevich, 2022). E-commerce technology enables SMEs to explore and implement innovative marketing strategies. To effectively reach and engage their target audience, they can make use of digital techniques such as influencer marketing, content marketing, and social media (Azam, 2007). Embracing technological efficiency, SMEs in Bangladesh can stay competitive in the dynamic e-commerce landscape, driving growth and establishing a strong presence in the evolving market (Mirza et al., 2016). Theoretical background of this thesis is rely on fundamental of e-commerce, innovation and technological efficiency in e-commerce. Following figure will give a clear idea about these terms and core concept that will build up with the interviews of this study and support the research topic.



*Figure 2: Technological Efficiency and Innovation Core Concept
(Orlikowski, 1992, Akaka & Vargo, 2014)*

This study will contribute to know how tech interaction can improve e-commerce businesses as technological efficiency is a major factor in e-commerce that we are considering it here. Also how innovation with technology is necessary for e-commerce business in the context of Bangladesh.

3 Methodology

In this chapter, the research design, data collection process, and participant selection for the qualitative study focused on exploring the impact of e-commerce adoption on small and medium-sized enterprises (SMEs) are outlined. The study involved conducting interviews with representatives from selected companies in chosen industries.

3.1 Research Design

Generally, research methods can be categorized into two primary types: qualitative and quantitative (Cropley, 2023). When qualitative and quantitative research combines together it called mixed method. Qualitative research aims to learn about how people view and understand the real-world experiences and social trends (Cropley, 2023). According to Daniel (2014), qualitative research is a way of studying social phenomena by understanding different methods and approaches. This type of research collects information, provide results that are not pre-decided, and has broader implications beyond the scope of the study (Hancock et al., 2001). This research study utilized a qualitative research design to investigate the adoption of e-commerce in innovation and technological operations among SMEs. This research objectives indicate a comprehensive exploration of the factors influencing e-commerce adoption in SMEs in Bangladesh and its impact on innovation and technological efficiency. Therefore, it aligns with the exploratory nature of research, where the goal is to seek new insights and generate ideas for future investigation (Cropley, 2023).

The research employed semi-structured interviews as the primary data collection method, engaging SME owners/managers/staff who have already adopted e-commerce for their innovation and technological operations. These interviews allowed for in-depth exploration of their experiences, challenges, and strategies related to e-commerce adoption. Additionally, to provide a comprehensive context and background information, the study incorporated secondary data sources. These secondary sources included government reports and academic literature from many websites, including Science Direct, IEEE Explore, Google Scholar, and others. These sources were chosen because they were relevant to e-commerce adoption in the SME sector and its impact on innovation and technological operations. These sources provided valuable insights into the broader landscape, enabling a better understanding of the factors influencing e-commerce adoption, the challenges faced by SMEs, and the potential benefits and limitations associated with this technological

integration. The three phases of data gathering, initial coding, and analysis are combined throughout the study.

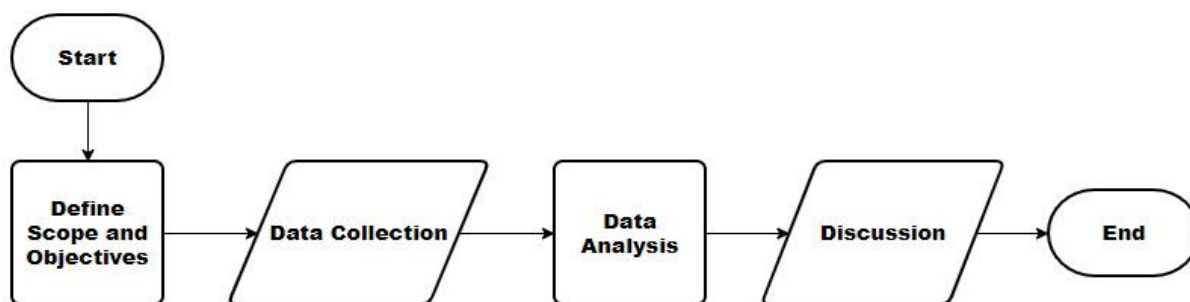


Figure 3: Main Steps of Research Plan

By combining primary qualitative data from the interviews with SME owners/managers/staff and relevant secondary data sources, this research aimed to offer a comprehensive analysis of the adoption of e-commerce in innovation and technological operations among SMEs in Bangladesh.

3.2 Sampling

The study employs purposive sampling techniques to select SMEs that are adopting e-commerce for their innovation and technological operations within the Dhaka division. Purposive sampling allows for the targeted selection of SMEs with relevant experiences and insights related to e-commerce adoption, ensuring that the sample represents SMEs actively involved in this technological integration (Palinkas et al., 2013). Purposive sampling also allows to focus the data collection on individuals or cases that are most likely to provide valuable information related to the research questions. It is particularly useful in qualitative research exploratory nature, where depth of understanding is a priority, as it allows to gather rich and relevant data (Palinkas et al., 2013). In this study, individuals or businesses are chosen based on specific criteria like their experience with e-commerce or the challenges they face. Depending on the research goals, participant has been selected for this research (Palinkas et al., 2013). The determination of the sample size is based on the principle of data saturation, where the sample size is determined by reaching a point where new information or themes are no longer emerging from the collected data (Palys, 2008). This approach ensures that an adequate number of SMEs are included in the study to capture a comprehensive range of perspectives, experiences, and challenges related to e-commerce adoption in the context of innovation and technological operations.

3.2.1 Company Profiles

After employed purposive sampling to select the companies that offered a range of perspectives on e-commerce adoption. Three company was selected after purposive sampling for this research and nine interviews were conducted. Seven interviews were conducted in person, while the remaining two were conducted online. In accordance with the Digital Security Act of 2018 in Bangladesh and GDPR policies, the identities of the participants, including the company names, were kept anonymous. The details about this has discussed in the ethical concern section. However, within this section, the company profiles, encompassing their operational scope and business particulars, have been comprehensively discussed. First company is first online e-commerce SME in Bangladesh that serves as a conduit between learners and an extensive array of high-quality online educational content. By combining technology and education, the organization is changing how people learn and helping them succeed in a changing world. Students use a dedicated learning app to go at their own pace. Enriched by animations, interactive live sessions, and visualized learning, learners gain the ability to self-assess alongside expert educators and performance analytics, anytime and anywhere, all made possible by the company. The company's main operations include providing a modern learning platform with a variety of educational content, like interactive courses and video lectures. Collaborating with experts ensures the content is accurate and up-to-date. They integrate technology into learning, making it accessible for everyone, and encourage collaboration among learners. The company is dedicated to improving and evolving their services based on user feedback and emerging trends.

Second company operates as a developer of a comprehensive B2B e-commerce platform, designed specifically to small and medium-sized businesses. Their platform is strategically designed to address the needs of local neighborhood shops, granting them access to an expansive array of products. This unique approach allows these businesses to expand their product offerings, enhancing their competitiveness within the market. A significant facet of the company's operations is their commitment to supporting these businesses beyond just product accessibility. Alongside providing a diverse range of products, the company offers logistics services, streamlining the distribution process for their clients. This integrated service helps businesses manage their inventory effectively, ensuring products reach customers in a timely manner. Furthermore, the company extends its services to encompass financial credit solutions. Understanding the cyclical nature of business operations, they offer clients access to credit facilities that align with their specific business cycles. This financial

support empowers small and medium-sized businesses to manage their cash flows and sustain their operations smoothly. Through their platform, businesses can conveniently access an online marketplace, expanding their product offerings while also tapping into vital logistics and credit line facilities. This holistic approach provides businesses with the tools necessary to navigate the challenges of commerce effectively.

Third company is another e-commerce SME that operates a dynamic B2B marketplace that's transforming the way retailers connect with suppliers and major brands. The company's app is designed to empower retailers by establishing a direct link between them and suppliers, with a keen focus on addressing the challenges of a fragmented supply chain through technology. In a bid to bridge the gaps and streamline the supply chain, This Company has taken the initiative to bring retailers, suppliers, and prominent brands together. The platform serves as the catalyst that revolutionizes traditional business interactions, injecting efficiency and coherence into the process. This company's main focus is empowerment. Using technology, the company gives retailers the ability to easily connect with suppliers and well-known brands, empowering them in the process. The innovative approach reduces previous communication and collaboration gaps, ensuring a smoother flow of goods and services. The B2B marketplace app serves as a digital bridge, a platform where retailers can discover a network of suppliers and big brands. This simplified connection makes sourcing, buying, and distributing goods easier, getting rid of the usual supply chain challenges. This company uses technology to improve transparency, minimize obstacles, and boost efficiency in the B2B ecosystem. This company's dedication to innovation is reshaping the B2B landscape, encouraging direct connections and meaningful collaborations.

Company	1	2	3
Sector	E-commerce (Education)	E-commerce (Logistics)	E-commerce (Retail)
Primary business focuses	B2C	B2B	B2B
Number of years in business	5	7	4
Number of employees	150 - 180	200 - 220	180 - 200
Computer literate employees	Almost all employees have computer knowledge		

Products	Educational courses	Essential goods	Essential goods
-----------------	---------------------	-----------------	-----------------

Table 1: Selected SMEs Profiles

3.2.2 Participant Profiles

The research aims to gather insights from different individual of nine Bangladeshi (BD) interviewee, each with their own unique work experiences from their companies. One of them, the first participant, is a Chief Information Officer. He's worked for four years at an e-commerce company in Dhaka, Bangladesh. His job involves leading and making big decisions about how technology is used. This experience lets him give us a high-level view of how e-commerce works, especially when it comes to new ideas and technology. Next participant from same company is an IT Manager who has spent three years in the e-commerce industry in Dhaka. He's the person in charge of making sure all the technology works smoothly. His perspective helps us understand the challenges and good things that happen when technology and e-commerce come together.

There's also a Project Manager from same company, who has worked in e-commerce for three years too. This person knows how to manage projects and make sure things get done. Their insights show how e-commerce and new ideas fit together when we try to make them happen. Another one is a General Manager who's been in e-commerce for five years in another e-commerce SME. His job involves looking at everything that happens in the company and making sure it's going well. This participant's insights give us a broad look at how e-commerce works, from the top down including IT. Another participant from same company is an IT Support Officer, who has been involved in e-commerce for four years. This person deals with the technical problems that come up and helps the company run smoothly every day. Their experiences give us a view from the ground level, showing us how technology really fits into daily operations. Another participant from the same company serves as a Business Analyst, bringing three years of expertise in the e-commerce sector. In this capacity, they are responsible for conducting in-depth analyses and supporting the company's daily operations. Their experiences offer valuable insights into how technology is intricately woven into our daily business activities. Last three participant is from another e-commerce company. All three participants' position is Assistant Manager (IT), System Administrator and Data Analyst. While Assistant Manager (IT) brings three years of working knowledge, while a System Administrator, with two years' experience, shares their unique view of how the complex world of IT supports, innovation and

technological views of e-commerce innovation in Dhaka. Last but not least, Data Analyst with three years of expertise in the company gives data-driven insights and analysis which plays a pivotal role in shaping the data strategy. Together, these different perspectives provide a rich understanding of how e-commerce and new ideas come together, from many different angles.

Participants	1	2	3	4	5	6	7	8	9
Education	Master's	Master's	Bachelor's	Master's	Bachelor's	Master's	Master's	Bachelor's	Master's
Employment positions	Chief Info Officer	IT Manager	Project Manager	General Manager	IT Support Officer	Business Analyst	Asst. Manager (IT)	System Admin.	Data Analyst
Years of experience	4	3	3	5	4	3	3	2	3
Employment Type	Full time	Full time	Full time	Full time	Full time	Full time	Full time	Full time	Full time
Nationality	BD	BD	BD	BD	BD	BD	BD	BD	BD

Table 2: Selected Participants Profiles

3.3 Data Collection Methods

The study is conducting 9 semi-structured interviews, each lasting between 50 to 60 minutes, with SME owners/managers/staff to collect data on e-commerce adoption in innovation and technological operations. Both in-person and online interviews has been conducted, taking into consideration the participants' preferences and convenience. The physical and online mode of the interview is providing flexibility and convenience for both the researchers and the participants, allowing for seamless communication and data collection. During the interviews, audio recordings are not being used. Instead, the interviews are being transcribed verbatim for further analysis. Transcribing the interviews ensures accuracy in capturing the participants' responses, perspectives, and experiences. The transcribed data is being treated with confidentiality and stored securely to maintain the privacy and anonymity of the participants. It was carefully considered that doing the research with thoroughness, attention, and honesty would ensure data authenticity and reliability (Robson, 2002).

3.3.1 Data Sources

The study uses primary data sources, including semi-structured interviews with SME owners, managers, and staff, to collect data on factors influencing e-commerce adoption, challenges faced by SMEs, and the impact of e-commerce adoption on innovation and technological efficiency. These

interviews allow for an in-depth exploration of the participants' perspectives, experiences, and insights regarding e-commerce adoption in the context of innovation and technological operations. Alongside the primary data sources, the study also draws on secondary data sources, such as government reports and academic literature, to provide essential context and background information. These secondary sources offer valuable insights into the broader landscape of e-commerce adoption, innovation, and technological operations in the context of SMEs. They provide a foundation of knowledge, support the interpretation of primary data, and contribute to a comprehensive analysis of the research topic.

3.4 Data Analysis

By its organized methodology, the interview guide employed in this study improved internal validity. The Appendix A contains the interview guidance. Instead than imposing preconceived notions or queries, qualitative research often draws from existing literature to guide the study process (Hancock et al., 2001). When little is known about the subject or group being examined, this strategy can be helpful since it enables researchers to learn new information by hearing the opinions of the participants. Qualitative research is often exploratory in nature, driven by a desire to learn from the participants and gain new insights into the issue being studied (Matsui et al., 2020). The study has obtain informed consent from all participants, ensuring that they are fully aware of the study's purpose, procedures, and potential risks or benefits involved. To protect the confidentiality and anonymity of the data, appropriate measures has been taken. All collected data, including interview transcripts, has been treated with strict confidentiality. Identifying information has been removed or anonymized to ensure that participants cannot be identified directly or indirectly. Data has been stored securely and only accessible to authorized researchers involved in the study. Interviews for this study were not recorded but transcribed, and kept to a maximum of 50 to 60 minutes in order to maintain data accuracy (Fernandez et al., 2021; see Appendix B).

For analysis in this study, a manual data handling approach has been employed. Whether the analysis is carried out manually or using computer tools, the procedure of thematic content analysis is fundamentally the same (Humble et al., 2022). In contrast to deductive approaches that utilize pre-existing theories or frameworks, the inductive approach has used to draw the analysis structure directly from the collected data (Humble et al., 2022). The inductive analysis method, specifically the theme content analysis, has been utilized in this study. This method may take time but will ensure a

thorough exploration of the data. Theme content analysis is a frequently used technique in qualitative research, allowing for the identification and interpretation of patterns, themes, and categories within the data (Humble et al., 2022). Inductive analysis is the most generally utilized strategy for interpreting qualitative data as it offers flexibility and facilitates an iterative process of data exploration, interpretation, and theory development (Humble et al., 2022). Although this methodology has its roots in grounded theory, it can also be applied to phenomenology and ethnography, two other qualitative research methodologies. In qualitative research, the analysis process starts at or soon after data collection and is continuously improved throughout the project. The research is described in detail in the interview transcripts, field notes, and observations, but no explanations are offered. (Gill et al., 2008). This study aligns with thematic analysis by employing a qualitative research method that aims to identify, analyze, and report on patterns and themes within the collected data (Cruzes and Dybå, 2011). Through open coding, categorization, and interpretation of data, the study seeks to extract meaningful themes related to the adoption of e-commerce in SMEs in Bangladesh. By addressing research questions and examining key factors, challenges, and impacts, the study uses thematic analysis as a framework to uncover common threads and trends in the data, ultimately contributing to a deeper understanding of the research topic.

This data analysis has been break into three steps. Analysis step one, two and three. In step one, we will apply the focused open coding. It is employed when researchers seek to gain a deeper understanding of specific concepts or patterns within a larger dataset, without the constraints of concepts (Mohajan et al., 2022). By carefully selecting and analyzing key sections of interviews or text, researchers can uncover latent patterns, refine research questions, and contribute to a deeper understanding of the studied phenomena (Mohajan et al., 2022). As we have large dataset interview, we will open code selectively whatever is suitable and stand out. Finding themes and classifications that emerge from the data is the goal. In order to do this, it is necessary to carefully review the interview transcripts to find themes, validate and refine those themes by looking at the data, and then repeat the process to find new themes and categories (Humble et al., 2022). It is known as open coding or initial coding when the researcher examines each transcript after it has been verbatim transcribed and makes notes in the margins, summarizing the information with words, ideas, or brief sentences (Humble et al., 2022). Each topic discussed in the transcript should have a summary sentences or word. This approach acknowledges the dynamic nature of qualitative data and allows for the emergence of new insights, making it a valuable tool for inductive research (as shown in Appendix C). This is the example of data analysis steps one, two and three.

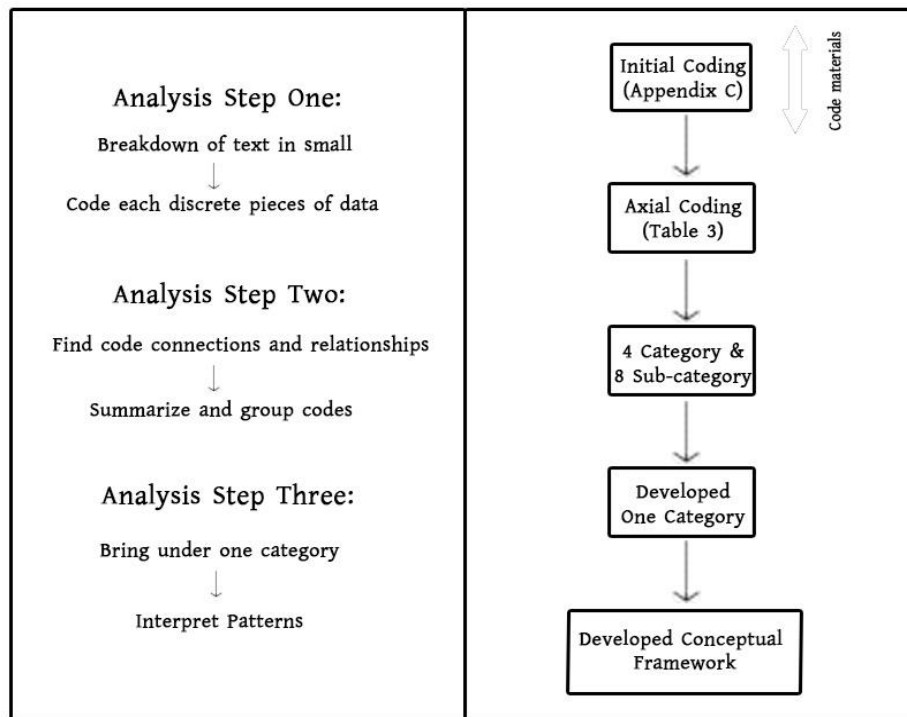


Figure 4: Example of Data Analysis Steps

In the second step, the researcher compiles all the words and phrases from the interviews into a refined set of papers. Any duplicated content is then eliminated, leading to a considerable decrease in the number of categories. Table 3 displays the resulting list of categories, which are derived from an initial coding framework in a prior study. The researcher then identifies overlapping or related categories and further narrows down the list by grouping them according to the research's analytical and theoretical concepts. This second step of coding is called axial coding. Axial coding serves as a method to establish connections between data in qualitative research (Jones & Alony, 2011). In axial coding, researchers systematically analyze the contextual, consequential, interactional, and causal relationships present within the data (Jones & Alony, 2011). This iterative process results in a final list of categories, which can be seen in the reduced list presented in Table 3 (Gill P et al., 2008).

Table 3 - Axial coding framework after reducing of the categories in the initial coding framework

Category	Sub category	Initial coding framework
1. Drivers and Motivations for E-commerce Adoption	I. Business Advancements	<ul style="list-style-type: none"> • Transformed SME • Broadened market • Market expansion • Cost savings • Improved management • Tech trends • Wider customer reach • Boosted innovation • Enhancing products and services • Building a community

	II. Customer-Centric Benefits	<ul style="list-style-type: none"> • Give customer preferences • Data insights • Better products • Enhanced brand commitment • Enhanced customer interaction • Enhance customer relationship
2. Challenges and Barriers in E-commerce Adoption	I. Operational Challenges	<ul style="list-style-type: none"> • Competition • Uncertainty among team members • Training and support • Security • Ensuring online security • Safety of customer data • Simplify the online business registration • Payment • Management challenge • Proper support for tech adaptation • Balance growth with other aspects
	II. Strategic Considerations	<ul style="list-style-type: none"> • Targeting the right customer • Embrace uncertainty
3. Impact on Innovation and Technological Efficiency	I. Technological Advancements	<ul style="list-style-type: none"> • Digital tools • User-friendly nature • Advantages over traditional methods • Online learning demand • New learning platform • Transformation of learning approach • Adopt new tech fast • Streamlined course management • Faster task completion • Prioritized security • Simplified online payment • Quick transaction
	II. Business Process Enhancements	<ul style="list-style-type: none"> • Improved competitiveness • Continuous learning and improvement • Increased customer satisfaction • Enhanced customer communication • Quick decision-making • Continuous betterment and advancement • Improved business operations • Faster order processing and payment • Overall smoother operations

4. Market Expansion and Connectivity	I. Digital Presence and Engagement	<ul style="list-style-type: none"> • Extended reach beyond physical limits • Website traffic • Conversion rates • Online visibility • Direct customer connection • Improved customer service • Quick online interactions • Stimulus for innovation within the SME • Doing new things • Doing things better • Less mistakes
	II. Business Growth and Innovation	<ul style="list-style-type: none"> • Sparking innovation • Using things wisely • Positive growth • Positive ROI • Innovation and business growth • E-commerce as a central role

In step three, following the completion of axial coding, four main category and eight sub-category was identified and specific codes selected, leading to the development of the selective coding theme theory "E-commerce adoption dynamics" from these categories. This selective coding theme synthesizes the axial coding elements into a cohesive framework that can guide the research study's analysis and discussions regarding e-commerce adoption.

3.5 Ethical Considerations

Mirza et al. (2023) emphasized the importance of researchers being conscious of ethical considerations when conducting qualitative research. Their thesis thoroughly addresses various ethical factors.

- All participants are fully informed about the research objectives, procedures, potential risks, and benefits.
- The privacy and confidentiality of participants are protected by ensuring anonymity, ensuring data cannot be traced back to individuals, and securely storing and handling sensitive data.
- Research participants rights was respected as outlined in GDPR and Digital security act (2018), including the right to access, anonymous company name, rectify, or erase their personal data.
- Participation in the research is voluntary and not coerced or influenced by external factors.
- Transparency was maintained about the research process, including the methodology, data collection methods, and analysis techniques used.

- The study's information has been accurately presented within the report, allowing readers the opportunity to assess the study's ethical integrity on their own.

3.6 Threats to Validity

In qualitative studies, the aspect of ultimate significance is their validity. This is commonly examined in terms of three main threats to validity in qualitative research: researcher bias, reactivity, and respondent bias (Lincoln and Guba, 1985). Researcher bias pertains to systematic errors from impartial research outcomes caused by the researcher's personal beliefs, values, or expectations (Rubin, 2000). This form of bias can impact various aspects of the research process, such as study design, data collection, result interpretation, and the conclusions drawn from the research. Reactivity in research arises when individuals alter their behavior, responses, or attitudes because they are conscious of being observed or studied, effectively reacting to the research process itself. This can lead to a distortion of natural behavior, complicating the acquisition of authentic and unbiased data (Rubin, 2000). Respondent bias, on the other hand, occurs when participants or respondents in a study introduce a form of bias. Basically, it describes circumstances in which participants fail to give honest answers for a variety of reasons, such as seeing a certain subject as dangerous or feeling pressured to satisfy the researcher by providing answers they find acceptable (Zohrabi, 2013). There are three other threats to validity in qualitative research (Runeson & Höst, 2009), which are construct validity, internal validity, and external validity. In qualitative research, construct validity involves ensuring that the chosen methods, data collection tools, and analytical techniques accurately capture and represent the intended constructs or concepts, internal validity focuses on establishing casual relationships and ensuring that observed connections between variables are not influenced by other factors and external validity involves addressing whether the findings can be generalized beyond the specific study context and participants (Runeson & Höst, 2009). In this section, how these threats has been minimized will be discussed. However, qualitative research's validity is difficult to evaluate (Golafshani, 2003). We questioned our conclusions and used the results in a triangulation process to help reduce this problem. Triangulation can reduced the threats of the researcher bias, reactivity, respondent bias, construct validity, internal validity, and external validity (Zohrabi, 2013; Rubin, 2000; Runeson & Höst, 2009). To mitigate potential interviewer influence on the responses of our interviewees (Hildum & Brown, 1956), necessary steps taken to reduce the impact of social desirability bias (Donaldson & Grant-Vallone, 2002) by assuring participants that their responses would remain anonymous.

4 Results

In this section, a comprehensive overview of the key findings and outcomes derived from the study has presented. To facilitate the presentation of results, the "Conceptual E-commerce Adoption Dynamics Model" has been developed which shown as Figure 5. This provides a seamless transition from the introduction to the visual representation of research outcomes. Here is the conceptual e-commerce adoption dynamics model:

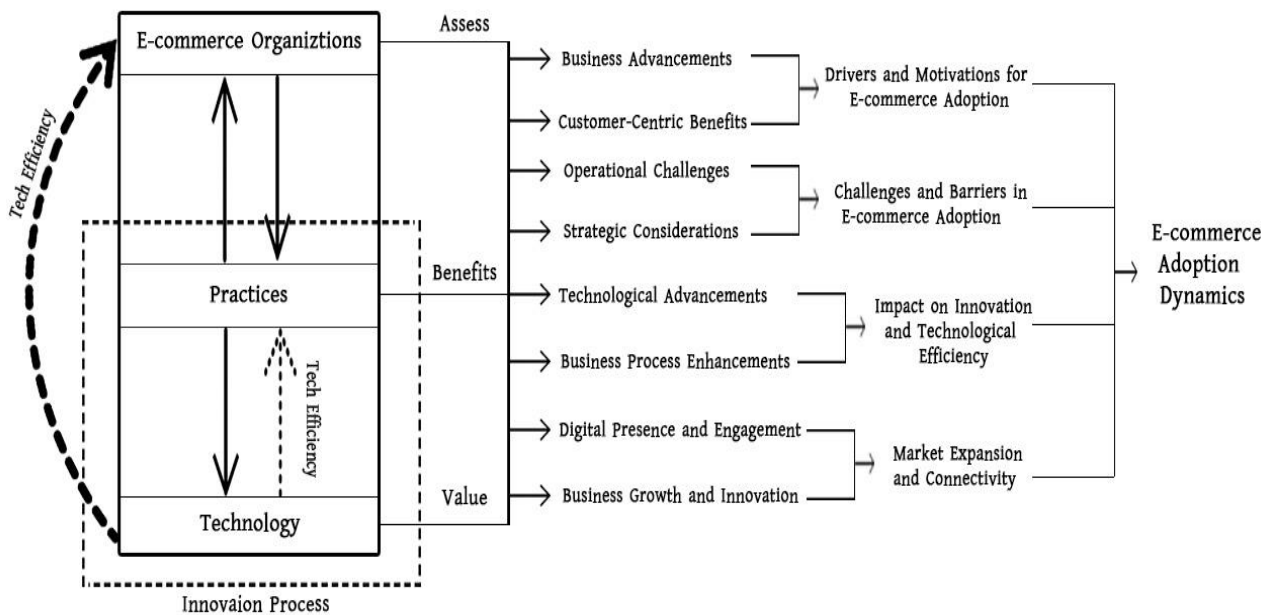


Figure 5: Conceptual E-commerce Adoption Dynamics Model

The "Conceptual E-commerce Adoption Dynamics Model" is a visual representation of the theoretical framework developed in this study based on the insights gathered from nine semi-structured interviews with representatives from e-commerce SMEs in Dhaka, Bangladesh. This extended conceptual model from Figure 2 is designed to explain how e-commerce adoption dynamics occur in a society and encompasses three main components: e-commerce organizations, practices, and technology. The e-commerce organizations component relates to the regulatory aspects governing e-commerce adoption, while the technology component focuses on technology as knowledge and skills rather than physical items. The practices component encompasses the behaviors and practices that facilitate e-commerce adoption. Dashed arrows within the diagram signify dynamic and reciprocal relationships. Other related components include benefits, values, assess, technological efficiency, and innovation process, all of which collectively lead to dynamic e-commerce adoption. This comprehensive framework offers valuable insights into the interplay between technology, e-commerce organizations, and behaviors, and their impact on innovation and technological operations among SMEs in Bangladesh.

4.1 RQ1.

How the key factors influence the adoption of e-commerce in the innovation and technological operations of SMEs in Bangladesh?

4.1.1 Business Advancements

From the interviews conducted, it was clearly understood that the adoption of e-commerce significantly influences the innovation and technological operations of SMEs in Bangladesh by fostering notable business advancements. From Figure 5 it was obvious that technology is an important factor that influences e-commerce adoption and this in turn, translates into business advancements. Businesses recognize that technology can enhance operational efficiency and cost-effectiveness, thus driving their adoption of e-commerce. From the interviewee 3, it said:

“The impact of using e-commerce on the innovation and technological advancement of our SMEs is truly impressive. It makes us think of new and creative ideas helping us adopt new technology faster. This change has made us more competitive and helped us stay ahead in the world of new technology.”

Also interviewee 5 said:

“It has bring up a culture of innovation, driving us to become more creative and adept at employing advanced tools. This transformation has significantly boosted our competitiveness in the market. Moreover, it has introduce in us a readiness to embrace new technologies continuously, keeping us at the forefront of innovation within our industry. In short, e-commerce has become the motivation for ongoing innovation and technological progress within our organization.”

By analyzing other interviewees, we come to know that technology is an important factor that can influence the e-commerce operations. Figure 5 shows that how e-commerce adoption, advanced technology, and innovation culture are all connected in small businesses and technology plays a central role in making operations smoother and encouraging creative solutions. The use of advanced technology makes running a business much easier. It helps in getting tasks done more quickly and efficiently. This, in turn, encourages businesses to come up with new and better ways of doing things. So, technology not only simplifies how they work but also inspires them to be more creative and innovative. In this context, interviewee 3 said:

“E-commerce has enhanced our SME operations. We now communicate with customers faster, manage products and orders more efficiently, and use data for make decisions. Online payments are become easy, and our teams collaborate effectively, ultimately increasing our efficiency in our industry.”

Also interviewee 7 said:

“E-commerce has given us new ideas and made us use technology in better ways. We now use smart tools to make our clients happy, work more efficiently; and understand data. This has made our work smoother, improved communication with clients; and made us more focused on digital excellence. E-commerce has encouraged us to be more creative and tech-savvy; making us better every day.”

Interviewee 8 said:

“Bringing e-commerce into our small business has caused a big change; in how we come up with new ideas and use technology. Now, we are always thinking of new ways to do things and quickly adopting the latest technology. This has made us better at competing with others; and using the newest tech trends to be creative. Our business has transformed because of e-commerce and now we're all about using the latest tools and being innovative.”

4.1.2 Customer-Centric Benefits

The interviews also indicated that the adoption of e-commerce in SMEs in Bangladesh is driven by a desire to provide customer-centric benefits. E-commerce allows businesses to collect and analyze data about customer preferences and behavior, which leads to enhanced customer satisfaction and loyalty. In Figure 5, the "Benefits" component represents the value proposition and promise of value to customers, which can be influenced by the technology used to deliver or enhance the service offering. This customer-centric approach drives innovation and improves the overall customer experience.

In this context interviewee 2 said:

“Yes, I've definitely seen changes in how customers connect with us since we started using e-commerce. Their commitment to our brand has grown, leading to better customer retention. Customers seem more satisfied with their online experiences too. E-commerce has improved the connection and interaction we have with them. This shift has actually boosted innovation within our SME. By listening to customers more closely, we've come up with new ideas that really help them. Their feedback drives us to develop innovative solutions, making our products and services even better.”

Interviewee 4 said:

“Absolutely, e-commerce really changed how we interact with clients. Being online means we can connect faster; and make them happier with quick responses. This change also pushed us to come up with new ideas. We listen to what clients say, and make things better; which helps us move forward. E-commerce is driving our SME to be better and more advanced.”

Interviewee 7 said:

“Definitely, e-commerce transformed how we engage with customers. Quick online interactions improved connections. This change sparked innovation. Feedback from clients shaped improvements and inspired new ideas that push our SME forward.”

“During our adoption process, we addressed competition by creating a unique value proposition. We streamlined order fulfillment processes, enhanced customer experiences with user-friendly interfaces, and focused on generating quality website traffic and visitor conversion. Improving visibility involved leveraging social media and SEO strategies. Innovation and a customer-centric approach were key to our successful transition into e-commerce.”

The interviews clearly show that using advanced technology, as seen in Figure 5, makes businesses run better and come up with new ideas. Also, when businesses focus on their customers, it's a big part of e-commerce success. They use data to make customers happier and think of new things. From these information it was obvious that technology and customer-centric benefits is a major factor that influence the e-commerce adoption in Bangladesh.

4.2 RQ2.

How do SMEs in Bangladesh specifically face challenges and barriers when adopting e-commerce for their innovation and technological operations?

4.2.1 Operational Challenges

From the interviews it was noticeable that SMEs in Bangladesh faces many challenges and barriers adopting e-commerce. Operational and strategic challenges are the main barriers according to the interviews. SMEs in Bangladesh face operational challenges when adopting e-commerce. These challenges include strong online competition, uncertainty among team members, and the need for proper training and support. Additionally, security concerns related to online security and safeguarding customer data present significant hurdles. Figure 5 clearly shows that technology is directly related to operational challenges and technological proficiency is necessary to overcoming operational hurdles during e-commerce adoption. In this context interviewee 1 said:

“At first, some of our team members felt unsure, but we helped them by providing training and support. Dealing with payment systems was tricky, so we got experts to help us. We made sure to focus on security to protect our data. Staying current online needed careful planning and fast decision-making. Challenges were part of the journey, but we found solutions to keep going.”

Interviewee 2 said:

“We faced similar challenges like staffs training, security of the site, payment and some management challenges. Adapting online needed careful attention and quick thinking. We took careful consideration to those challenges and create solutions according to that. Experts helps us to overcome from that.”

Interviewee 4 said:

“As we started using e-commerce, our team faced a challenge because we didn't know much about the technical stuff. But we fixed this by getting training and going to workshops. Align different online business in one platform was challenging. We made sure things were safe online with strong rules. And to keep up with changes online, we made our workplace more flexible and open to new ideas.”

4.2.2 Strategic Considerations

Also there are also strategic considerations that plays a role in the challenges and barriers SMEs face when adopting e-commerce. Challenges include simplifying the online business registration process, targeting the right customers effectively, addressing payment-related issues, managing effectively, and providing adequate tech support. From Figure 5, it's evident that the regulatory aspects governing e-commerce organizations, which may include security and data protection, are interconnected with technology and practice. Striking a balance between growth and other aspects of the business and embracing uncertainty in the fast-paced digital world compound these challenges.

Interviewee 3 said:

“We focused on being consistent and reliable. We worked with experts to meet our tech needs. Customer retention was important, and data security was a major concern. We made sure their information was safe online. Finding the right customers was hard, but we tried different things and it worked.”

Interviewee 8 said:

“As our e-commerce site grew, we faced a few challenges. We worried about keeping payments safe when we added new ways to pay. We worked with trusted partners and used strong safety methods. Also; making sure our site looked good on all devices (phones, computers) was hard. We used special designs and checked how things worked everywhere.”

Interviewee 9 said:

“During adoption process, we faced some specific challenges like cyber-security threats and attract right client to our products. We had to make sure that our clients' information and our business data were safe from cyber threats, so we used regular security checks and to attract clients' social media marketing and ads helps us to overcome them.”

From these answers and observation from Figure 5, it was clear that small business in Bangladesh faces notable challenges and barriers while adopting e-commerce for their innovation and technological operations.

4.3 RQ3.

How does the adoption of e-commerce impact innovation and technological efficiency in SMEs in Bangladesh?

4.3.1 Technological Advancements

From the interviews it is visible that, the adoption of e-commerce significantly impacts innovation and technological efficiency in SMEs in Bangladesh through technological advancements. E-commerce necessitates quick tech adaptation, which not only improves competitiveness but also streamlines course management, accelerates task completion, and promotes continuous learning and improvement. These technological advancements lead to innovation and increased technological efficiency. "Technology" component in Figure 5, which focuses on technology as knowledge and skills rather than physical items. E-commerce adoption drives SMEs to acquire new technological knowledge and skills rapidly. In his context, interviewee 1 said:

“Absolutely, shift to e-commerce has brought noticeable changes in customer engagement and relationships. Online platforms enable faster, personalized interactions, deepening our understanding of customer needs. This drives continuous innovation powered by customer feedback, driving the growth and efficiency of our SME.”

Interviewee 8 said:

“Bringing e-commerce into our small business has caused a big change; in how we come up with new ideas and use technology. Now, we are always thinking of new ways to do things and quickly adopting the latest technology. This has made us better at competing with others; and using the newest tech trends to be creative. Our business has transformed because of e-commerce and now we're all about using the latest tools and being innovative.”

4.3.2 Business Process Enhancements

The insights obtained from these interviews suggested that using e-commerce makes business processes better, which means they work more smoothly and efficiently. Businesses see happier customers because they can communicate better and keep things secure. Quick decision-making and easy online payments are now possible, making transactions faster and encouraging continuous improvement. These improvements make the business run better overall, with faster orders and

payments, which also helps with innovation and efficiency. Figure 5 indicates that, technology and practices with innovation added values to the business to come up with new and better ways of doing things, ultimately enhancing the business process. In this context, Interviewee 8 said:

“E-commerce integration made our small business work better. It helped us do things more quickly and smoothly. For example, taking orders and processing payments became faster and easier online. We also could keep track of inventory in real-time, so we know what's available all the time. This helped us serve clients better and avoid running out of products. Communication improved too; we could talk with clients online and answer their questions faster. Overall, e-commerce made our business run smoother and made us better at serving our clients.”

Interviewee 1 said:

“Of course, e-commerce adoption changed our small business. We reached more customers, made our work smoother, and figured out what our customers like. Learning how to use digital tools was important, saving us money and making our orders faster.”

4.3.3 Digital Presence and Engagement

From the interviews it's apparent that the effect of using e-commerce is clear when businesses have a stronger online presence and engage with customers more. They can connect with their target audience and build direct relationships with customers, which makes their service better and inspires new ideas. Online interactions are quick and help save resources, promoting both innovation and better use of technology. These information aligns with the Figure 5, which encompasses the behaviors and practices facilitating e-commerce adoption. From this perspective, Interviewee 5 said:

“Yes, I've seen changes in how customers connect with us after using e-commerce. They seem happier, and we can make them even more delighted with special offers. Building a community where they can share thoughts has been a great addition. Personalizing their experience has brought us closer to them, impacting our innovation positively. Direct feedback from clients has led us to create better things they want, and we've generated new ideas by seeing what they like. E-commerce has improved customer relationships and boosted innovation.”

Interviewee 9 said:

“We connect through our website, email, and social media, enhancing understanding and quicker responses. This improved customer relationship fuels innovation by gathering feedback and observing shopping habits for new product ideas. E-commerce's real-time adaptability enables quick responses to market changes and customer preferences, strengthening our bond with customers and fostering innovation to meet their needs.”

4.3.4 Business Growth and Innovation

E-commerce adoption helps businesses grow and become more innovative. They not only do new things but also improve the way they do existing tasks by using technology. This helps them grow and make more money, leading to innovation and better technology use in different parts of their business. It was also seen in Figure 5 that technology is important to grow business and fostering innovation. Interviewee 1 said:

“People wanted online learning, so we started offering it. E-commerce helped us reach more customers, which was important for our growth. It also made our work smoother and more cost-effective, which matched our goals. Plus, we were excited about the data insights it provided. It allowing us to create better products, offer personalized experiences to customers, and make informed decisions.”

Interviewee 2 said:

“E-commerce made us more creative and willing to try new things. It also keeping us updated on the latest technology trends. E-commerce has enabled direct customer interaction, enhancing our understanding of their preferences and needs, leading to better product and service offerings. Plus, we're now more open to using technology to improve how we work and how we serve our customers. Ultimately making us more innovative and tech-savvy, driving business growth.”

Considering Figure 5 and all these results it can clearly say that when small businesses in Bangladesh start using e-commerce, they get better at what they do, make customers happier, and become more innovative. Even though they face some challenges, like dealing with competition and making smart decisions, the use of e-commerce helps them improve their business operation by using technology and the way they operate. They grow and make more money, making their business operations more efficient in various areas.

5 Discussion

In this section, a deeper analysis of the findings is conducted. They are related to the theory explained in Section 2, their practical significance is explored, and the study's limitations and potential future directions are discussed.

5.1 Summary of Findings

Based on the insightful findings gathered from the interview transcripts, it is evident that e-commerce plays an important role in transforming small and medium-sized enterprises (SMEs) in various ways in Bangladesh. The interviews provide valuable insights into how innovation and technology efficiency are perceived in e-commerce among SMEs in Bangladesh. After conducting all the interviews, the impact of e-commerce can be categorized into four main categories: drivers and motivations for e-commerce adoption, challenges and barriers in e-commerce adoption, the impact on innovation and technological efficiency, and market expansion and connectivity. From the result, it was clear that all those information gives a solid foundation in this study.

5.1.1 Factors Affecting E-commerce Adoption

5.1.1.1 *Limited Technological Advancements*

From Figure 5, it was demonstrated the importance of technological efficiency and innovation in e-commerce adoption. The data analysis section analyzes the key factors in e-commerce's influence on innovation and technological operations. From the data analysis, it was discovered that SMEs in Bangladesh faced limited technological advancement and, because of that innovation and technological operations hampered. It was found that use of advanced technology, as mentioned by several interviewees, has significantly enhanced operational efficiency and cost-effectiveness. This has motivated SMEs to adopt new technology faster, fostering innovation and competitiveness. The previous background study had strengths, but there were opportunities to enhance clarity in certain aspects. Bhagat (2021) describes technology is always crucial in e-commerce, no matter how far we progress. This research demonstrates that small and medium-sized businesses in Bangladesh experience substantial improvements in innovation and technology usage when they adopt e-commerce. The adoption of e-commerce enabled SMEs to overcome these limitations by fostering notable business advancements. The use of advanced technology, as mentioned by several interviewees, has significantly enhanced operational efficiency and cost-effectiveness. This insight is crucial because it is based on

real conversations with individuals working in these businesses. It shows that, e-commerce drives them to become more competitive and creative, which, in turn, promotes innovation and technological progress.

5.1.1.2 Lack of Customer-Centric Benefits

Another vulnerable aspect that resulted from data analysis was customer-centric benefits. Previously, SMEs were struggle to provide the benefits to their customer properly. Which includes the customer preferences and their behaviors. This was one of the significant factors that affecting e-commerce adoption because customer-centric data can help to drive the innovation in the organization. It was obvious in Figure 5 as well. The respondents seemed to agree that it was an important factor to adopt e-commerce and drive innovation with technological efficiency. However, it was observed that e-commerce in Bangladesh were actively working to overcome from these. Many respondents said that collect and analyze customer data leads to enhanced customer satisfaction and loyalty. It also driving innovation and improving overall customer experience. Not only that, direct feedback from customers led to the development of innovative solutions and better products and services. In the digital age, meeting customer expectations and ensuring e-commerce success depends on equipping the right people with accurate data; without it, customer-centricity becomes a risky endeavor (St-Aubin, 2022). This highlights their determination to integrate e-commerce into their operations and become more customer-focused.

5.1.2 Challenges and Barriers

The study identifies operational and strategic challenges faced by SMEs in Bangladesh as they adopt e-commerce for innovation and technological operations. In Figure 5 it's noticeable that, technology has a direct connection with these challenges and barriers. It was found from most of the responders that strong online competition, cost ineffectiveness, uncertainty among team member, the need for proper training and support, and security concerns. Cybersecurity threats raise significant concerns for online users engaged in e-commerce and online service providers (Sharma et al., 2009). According to the interviews, strong online competition happened because of limited market reach. Also mentioned, cost inefficiencies in their operations. By accelerating task completion, and encouraging continuous learning and improvement has improved management and reduced operational costs. Ray (2011) defines that by using e-commerce can help a business sell more and reduced cost, making it more competitive. By providing training and support to team members, seeking expert assistance

for dealing with payment systems and security, and improving decision-making processes they have found solutions to other operational challenges. The strategic challenges, such as simplifying the online business registration process, targeting the right customers, and managing effectively was noticed from the interviews. They also addressed that by focusing on being consistent and reliable, working with experts to meet their tech needs, and experimenting with different strategies to find the right customers was the decision they took to overcome from these challenges. To encourage repeat business from existing customers, it's crucial to include effective online customer service in the company's online operations (Ray, 2011).

5.1.3 Impact of E-commerce on Technological Efficiency

The responders agreed that there is a positive impact of e-commerce adoption on innovation and technological efficiency. There is a direct impact of e-commerce on technological efficiency. From the interviews and insights from Figure 5, it was obvious that lacked technological efficiency and innovation due to limited technological advancements and outdated business processes, SMEs in Bangladesh faced problems and unable to run their business operations smoothly. Respondents said that limited technological advancements refers to not having up-to-date developments in technology. Which also connected with the business process. E-commerce drives technological advancements and enhances efficiency in business processes. Technological advancements have driven significant progress in e-commerce, enabling sustainable business growth at affordable prices, and e-commerce businesses have brought tremendous change in the buying habits of customers today (Arumugam et al., 2020). The personalization of interactions, customer feedback, and adaptability to market changes all contribute to this efficiency. "A personalized e-commerce website promises benefits for both the customer and the owner of an online business. Ideally, a personalized website can present content and products that are more relevant to the individual customers' needs and interests, thus reducing the necessary navigation behavior and increasing customer satisfaction while facilitating product sales" (Karat, et al., 2004). This insight provides practical knowledge for SMEs in Bangladesh aiming to improve their processes in the digital age.

5.1.4 Economic Growth and Social Impact

Another area of concern identified through interviews was e-commerce adoption by small businesses has lead to increased competitiveness, growth, and adaptation to the fast-changing technological landscape. Respondents said e-commerce has increased brand commitment and customer interaction.

Which is related to economic and social implications. It also fostered the brand loyalty and customer relationship. Brand loyalty means customers liking a brand, and it's vital for retailers to have many loyal customers (Erdumlu, 2017). Most of the respondents disclose that it has broader implications for the economy of Bangladesh, where small businesses play a vital role. They also mentioned the need for policies and programs to help these businesses use e-commerce and gain from digital changes. An increasing amount of research suggests that e-commerce has a beneficial effect on economic growth, which refers to the enhancement of the efficient production of goods and services in an economy (Parishev et al., 2020).

5.1.5 Contributions and Implications

The findings of this research are important as they contribute to the existing body of knowledge by providing empirical evidence of the impact of e-commerce on innovation and technological efficiency in SMEs in Bangladesh. It is important to place our findings within the wider context of previous research on e-commerce in this region as well as the field of e-commerce innovation when analyzing the transformational impact of e-commerce on SMEs in Bangladesh. By comparing the findings with prior research, we can see both similarities and differences that help us understand e-commerce business in Bangladesh better. In alignment with previous studies on e-commerce adoption in Bangladesh, this research shows that SMEs face ongoing challenges, especially when it comes to using the latest technology. However, this study looks more closely at how these challenges affect innovation and using technology. This detailed look helps us understand what's happening more clearly, adding to what we already know about how technology is used in online business.

This research brings out unique points, like focusing on what benefits customers, and how challenges are connected to using technology well. These details go beyond what we usually talk about and give new insights into what helps online businesses succeed in Bangladesh. Methodologically, this study introduces innovative approaches to understanding the challenges and opportunities faced by SMEs in adopting e-commerce. By looking deeply into interviews and using information from Figure 5, that provides a comprehensive understanding of the interconnected relationships between technology, challenges, and innovation. Practically, the study findings have direct implications for businesses in Bangladesh. By addressing the challenges identified in this study, businesses can enhance their technological efficiency, foster innovation, and better position themselves in the competitive landscape. This research underscore the positive correlation between e-commerce adoption and technological efficiency. By answering research questions and fulfilling the objectives, we provide

empirical evidence that sheds light on the specific challenges, drivers, and impacts experienced by businesses in this unique context. This granularity refines insights from prior studies, contributing to a deeper understanding of the e-commerce landscape in Bangladesh. In the wider context of e-commerce innovation, this study offers valuable insights into how SMEs in Bangladesh adapt to technological advancements and innovation.

5.2 Limitations

While this study was done properly, it still has some limitations. These limitations are because of the research nature of this study. Firstly, the researcher chose a type of research called 'qualitative.' This type of research is flexible but it can be quite time-consuming. While this approach has offered partial insights into the studied companies, it does have limitations regarding the generalizability of the findings. Secondly, although the study offers valuable insights into these specific companies and asserts a high level of relevance to similar organizations, one must carefully consider the applicability of these findings to other types of businesses. Thirdly, the limitation arises from the selection of a specific number of interviewees for data collection. The interviews were exclusively conducted within the specific companies, and the individuals involved were located in Dhaka, Bangladesh. Different categories of companies and interviewees could potentially yield different outcomes. While the researcher consciously focused on enhancing innovation and technological efficiency in Bangladesh SMEs informants to achieve a strategically relevant and meaningful perspective on e-commerce adoption, it's essential to acknowledge that this approach did not encompass all aspects of a company's perceptions. Additionally, different stakeholders may perceive the phenomenon differently.

5.3 Future Directions

The outcomes of this study hold significance for both academia and the business community. The currently available literature is investigated to perceive on enhancing innovation and technological efficiency in Bangladesh SMEs. It have to understand that e-commerce adoption is a vast thing and it can be vary place to place. The researcher didn't find any specific studies that published the enhancing the innovation and technological efficiency in the context of Bangladesh SMEs for e-commerce adoption. The trends, limitation, and needs of current innovation and technological efficiency shown in this paper. The results will give future researchers a solid idea about business process and well-recognized scientific ideas. From the initial coding to final coding of the interviews numerous scientific and useful data was discovered which can be helpful for future research and

industry practitioners. As highlighted in the limitations section, data was collected through a limited number of interviews, which might not fully represent the entire industry. The data collection process involved a combination of research and interviews, followed by a detailed manual analysis, including tasks like interview transcriptions and data coding. Nevertheless; the results are interesting and encourage further research in Bangladesh's e-commerce sector with a larger data sample. These findings provide a starting point for future research that combines detailed insights with data from various sources. Organizations can apply this data and these findings within their company. The research findings can benefit both researchers and organizations, offering insights not only into the technical and innovative aspects of e-commerce but also its human dimension and its overall impact. These findings not only contribute to the existing body of knowledge but also have practical implications for businesses operating in Bangladesh; and similar emerging markets. SMEs in these regions can leverage the insights gained from our study to make informed decisions regarding the adoption of e-commerce strategies to drive innovation and boost technological efficiency. Future researchers can enhance their studies by involving people from different countries, organizations, educational backgrounds, skills, and life experiences, creating a broader and more diverse participant pool.

6 Conclusion

This study aimed to investigate methods for improving innovation and technological efficiency in e-commerce among small and medium-sized enterprises (SMEs) in Bangladesh. The research problem and objectives were set before conducting a detailed background analysis. Different sources were referenced to explore strategies for enhancing the technological and innovation efficiency of SMEs engaged in e-commerce in Bangladesh. Qualitative data analysis was carried out to analyze various aspects of e-commerce operations within SMEs. In the last decade, e-commerce has experienced significant growth in Bangladesh. People have become more aware of innovative and technical advancements, although companies vary in their level of awareness. Some companies have not invested enough or have shown insufficient attention to this evolving landscape. In developing countries like Bangladesh, the adoption of e-commerce is sometimes approached with insufficient consideration of factors like drivers, motivations, challenges, and barriers, as well as its impact on innovation and technological efficiency. The theory and papers help us make sense of what we learn in the interviews. The interviews show us how this theory works in real life, especially for small businesses. This research provides valuable insights and offers guidance on how to address these aspects, providing a clearer path to successful e-commerce integration. This research has shown that when small businesses in Bangladesh use e-commerce, it can have a big and positive effect on how they come up with new ideas and use technology effectively. Small businesses that use e-commerce often become more innovative. They can adapt to changes in the market, find new opportunities, and offer new solutions to customers. Using e-commerce technology also helps these businesses work more efficiently and use their resources better. To sum up, our study highlights how e-commerce can be a powerful force for positive change in small businesses in Bangladesh. It also covers the way for further research in this exciting field. By using e-commerce effectively, small businesses in Bangladesh and similar places can set themselves up for long-term growth and success in the digital era.

References

- Akaka, Melissa & Vargo, Stephen. (2013). Technology as an operant resource in service (Eco) systems. *Information Systems and e-Business Management*. 12. 10.1007/s10257-013-0220-5.
- Arumugam, Dhanalakshmi & Hui, Xu & Radhakrishnan, Roopini & Supriya, R. (2020). Technological Advancements in E-Commerce and Customer Relationship Management. *International Journal of Engineering and Management Research*. 10. 9-20. 10.31033/ijemr.10.6.2.
- Ayyagari, M., Beck, T., & Demirguc-Kunt, A. (2007). Small and medium enterprises across the globe. *Small Business Economics*, 29(4), 415-434.
- Azam, M., & Quaddus, M. (2009). How Organisational Characteristics Explain the Adoption of e-Commerce by the SMEs in Bangladesh? *Proceedings of 20th Australasian Conference on Information Systems*, (pp. 436-446). Melbourne.
- Azam, M.S. (2007). Implementation of B2C E-commerce in Bangladesh: The effects of buying culture and E-infrastructure. *Advances in Global Business Research*, 3(1), pp.55-81.
- Bappy & Azim, R. (2018). *E-commerce business opportunities and challenges in Bangladesh*. BRAC University.
- Begum, L. A., Talukder, M. S., Rahman, M. M., Das, R. C., Bhattacharjee, P., & Miah, M. N. (2022). Estimating the Contribution of SMEs' Output on GDP Growth in Bangladesh: A VECM Approach.
- Billal, H.M., Shin, H.K. and Sim, W.J. (2019), Critical Success Factors (CSF) on e-Commerce Adoption in Bangladesh SMEs. *Management. Review: An International Journal*, 14(1), pp. 51-81 (June 30, 2019).
- Chaffey, D., Ellis-Chadwick, F., Mayer, R., & Johnston, K. (2009). *Internet marketing strategy, implementation and practice*. Pearson Education.
- Cropley, A. (2023). *Qualitative Research Methods: A Practice-Oriented Introduction*.
- Cruzes, Daniela & Dybå, Tore. (2011). Recommended Steps for Thematic Synthesis in Software Engineering. *International Symposium on Empirical Software Engineering and Measurement*. 275 - 284. 10.1109/ESEM.2011.36.
- Digital Security Act, 2018." Wikipedia, https://en.wikipedia.org/wiki/Digital_Security_Act,_2018
- Dimelis, Sophia & Papaioannou, Sotiris. (2011). Technical Efficiency and the Role of ICT: A Comparison of Developed and Developing Countries. *Emerging Markets Finance and Trade*. 47. 40-53. 10.2307/23047100.
- Donaldson, S. I., & Grant-Vallone, E. J. (2002). Understanding self-report bias in Organizational behavior research. *Journal of business and Psychology*, 17(2), 245-260.

- Erdumlu, N. (2017). Analysing the consumer behavior and the influence of brand loyalty in purchasing sportswear products. *IOP Conference Series: Materials Science and Engineering*, 254, 172010
- Fernandez, Anne-Sophie & Chiambaretto, Paul & Chauvet, Mathieu & Engsig, Juliane, 2021. "Why do MNEs both make and cooperate for innovation?" *Technovation*, Elsevier, vol. 106(C).
- Ghobakhloo, M., Arias-Aranda, D., & Benitez-Amado, J. (2011). Adoption of e-commerce applications in SMEs. *Industrial Management & Data Systems*, 111(8), 1238-1269.
- Ghobakhloo, M., Hong, T. S., & Standing, C. (2015). B2B e-commerce success among small and medium-sized enterprises: A business network perspective. *Journal of Organizational and End User Computing*, 27(1), 1-32. doi:10.4018/joeuc.2015010101
- Gill P, Stewart K, Treasure E, Chadwick B. Methods of data collection in qualitative research: interviews and focus groups. *Br Dent J*. 2008 Mar 22;204(6):291-5. doi: 10.1038/bdj.2008.192. PMID: 18356873.
- Golafshani, N. (2003). Understanding reliability and validity in qualitative research. *The qualitative report*, 8(4), 597-607.
- Grossoehme, Daniel. (2014). Overview of Qualitative Research. *Journal of health care chaplaincy*. 20. 109-122. 10.1080/08854726.2014.925660.
- Hancock, B., Ockleford, E., & Windridge, K. (2001). An introduction to qualitative research. London: Trent focus group.
- Hanna Hryshkevich (2022). Innovation and Its Role in E-Commerce. *AI Time Journal*.
- Hildum, D. C., & Brown, R. W. (1956). Verbal reinforcement and interviewer bias. *The Journal of Abnormal and Social Psychology*, 53(1), 108.
- Hossain, M. R. (2016). The Role of E-Commerce to Enhance the Competitiveness of SME in Bangladesh. BRAC University.
- Hossain, M.A., Ali, M.K., Kibria M.G. and Bhuiyan M.N. (2013). A Survey of E-Commerce of Bangladesh, *International Journal of Science and Research*, vol. 2, issue 2, pp. 150-158.
- Hossain, Md Billal & Hyun-Woo, Kim & Ho-Kyun, Shin. (2019). The Factors Affecting e-Commerce Adoption by Small and Medium Enterprises in Bangladesh.
- Humble, Niklas & Mozelius, Peter. (2022). Content analysis or thematic analysis - Similarities, differences and applications in qualitative research.
- Jahanshahi, A. A., Zhang, S. X., & Brem, A. (2013). E-commerce for SMEs: Empirical insights from three countries. *Journal of Small Business and Enterprise Development*, 20, 849-865. doi:10.1108/JSBED-03-2012-0039.

- Jones, M., & Alony, I. (2011). Guiding the Use of Grounded Theory in Doctoral Studies: An Example from the Australian Film Industry. *International Journal of Doctoral Studies*,
- Kapurubandara, M. and Lawson, R. (2008). Availability of E-commerce Support for SMEs in Developing Countries. *The International Journal on Advances in ICT for Emerging Regions*, vol. 1, no. 1, pp. 3 - 11.
- Karat, C.M., Blom, J.O. & Karat, J. (2004). *Designing Personalized User Experiences in eCommerce*. New York City: Springer
- Karim, S., Gide, E. and Sandu, R. (2018). A practical framework for implementing e-commerce in SMEs in developing countries: A case from Bangladesh, *Academic Journal of Science*, 08(02):275–290.
- Lincoln, Y. S. & Guba, E. G. (1985). *Naturalistic Inquiry*. Newbury Park, CA: SAGE.
- Lingyan Meng, Md Qamruzzaman & Anass Hamad Elneel Adow, 2021. "**Technological Adaption and Open Innovation in SMEs: An Strategic Assessment for Women-Owned SMEs Sustainability in Bangladesh**" *Sustainability*, MDPI, vol. 13(5), pages 1-22, March.
- Matsui, H., Hori, K., Yamada, E. and Kodama, K. (2020) Visualization and Punctuation of Psychological Counseling by Qualitative and Quantitative Methods. *Psychology*, 11, 796-821. doi: 10.4236/psych.2020.115053.
- Mirza, Hadjer & Bellalem, Fouzi & Mirza, Chahrazed. (2023). Ethical Considerations in Qualitative Research: Summary Guidelines for Novice Social Science Researchers. 11. 441-449.
- Mirza, M.H., M.M. and Habib, M.M. (2016). ICT Adoption in Small and Medium Enterprises: An Empirical Evidence of Service Sectors in Bangladesh *Journal of Economics, Business and Management*, Vol. 4, No. 8, August 2016.
- Mohajan, Devajit & Mohajan, Haradhan. (2022). Exploration of Coding in Qualitative Data Analysis: Grounded Theory Perspective. *Research and Advances in Education*. 1. 50-60. 10.56397/RAE.2022.12.07.
- Ngai, E.W.T. & A. Gunasekaran (2007). A review for mobile commerce research and applications. *Decision Support Systems*, vol. 43, no. 1, pp. 3-15.
- OECD (2019), *Southeast Asia Going Digital: Connecting SMEs*, OECD, Paris. Available at: www.oecd.org/going-digital/southeast-asia-connecting-SMEs.pdf
- Orlikowski, W. (1992). The Duality of Technology: Rethinking the Concept of Technology in Organizations. *Organization Science*, 3(3), 398-427. Retrieved March 13, 2019 from <http://www.jstor.org/stable/2635280>.

- Palinkas, Lawrence & Horwitz, Sarah & Green, Carla & Wisdom, Jennifer & Duan, Naihua & Hoagwood, Kimberly. (2013). Purposeful Sampling for Qualitative Data Collection and Analysis in Mixed Method Implementation Research. *Administration and policy in mental health*. 42. 10.1007/s10488-013-0528-y.
- Palys, T. (2008). Purposive sampling. In L. M. Given (Ed.) *The Sage Encyclopedia of Qualitative Research Methods*. (Vol.2). Sage: Los Angeles, pp. 697-8.
- Parishev, Aleksandar & Hristovski, Goran & Jolakoski, Petar & Stojkoski, Viktor. (2020). E-COMMERCE IMPACT ON ECONOMIC GROWTH. 10.47063/EBTSF.2020.0017.
- Pease, Wayne & Rowe, Michelle. (2007). Diffusion of Innovation - The Adoption of Electronic Commerce by Small and Medium Enterprises (SMES)- A Comparative Analysis. *Australasian Journal of Information Systems*; Vol 13, No 1 (2005). 13. 10.3127/ajis.v13i1.78.
- Ray, Jeffrey. (2011). Using Effective E-Commerce Strategies to Improve Organizational Performance. *SSRN Electronic Journal*. 10.2139/ssrn.2115064.
- Robson, C. (2002). *Real world research: a resource for social scientists and practitioner-researchers*. Oxford, UK: Blackwell Publishers.
- Rubin, A. (2000). Standards for Rigor in Qualitative Inquiry. *Society for Social Work and Research*, 10(2), 173-178.
- Runeson, P., Höst, M. Guidelines for conducting and reporting case study research in software engineering. *Empir Software Eng* 14, 131–164 (2009). <https://doi.org/10.1007/s10664-008-9102-8>.
- Schneider, Gary. (2015). *Electronic Commerce*, Cengage Learning.
- Sharma, Kunal & Singh, Amarjeet & Sharma, Ved. (2009). SMEs and Cybersecurity Threats in E-Commerce. *Edpacs*. 39. 1-49. 10.1080/07366980903132740.
- Silky Batra & Dr Ashish Arora. (2020). ADOPTION OF ECOMMERCE IN MSME SECTOR. *PalArch's Journal of Archaeology of Egypt / Egyptology*, 17(9), 5701-5710. Retrieved from <https://archives.palarch.nl/index.php/jae/article/view/5078>
- St-Aubin, N. (2022). Creating a customer-centric culture at your e-commerce business. *WELD*.
- Thong, J. Y. L. & Yap, C. S., 1995. "CEO characteristics, organizational characteristics and information technology adoption in small businesses," *Omega*, Elsevier, vol. 23(4), pages 429-442, August.
- Thong, J. Y., & Yap, C.-S. (1995). CEO characteristics, organizational characteristics and information technology adoption in small businesses. *Omega*, 23(4), 429-442.

- Varun Bhagat (2021). The Role of Technology in Fostering E-commerce Business Growth. Data Science Central.
- Zaman, A.K.M. and Islam, M.J. (2011). Small and Medium Enterprises Development in Bangladesh: Problems and Prospects, ASA University Review, vol. 5 no. 1, pp. 146-160.
- Zohrabi, M. (2013). Mixed Method Research: Instruments, Validity, Reliability and Reporting Findings. Theory and Practice in Language Studies, 3(2), 254-262. <https://doi.org/10.4304/tpls.3.2.254-262>.

Appendix A: Interview Guide

- Gender
- Nationality
- Location
- Main business activities
- Respondent position
- Respondent prior working experience

Appendix B: Transcripts of Interviews

A Bangladeshi national man who working as Chief Information Officer in an e-commerce company in Dhaka, Bangladesh for 4 years.

Interviewer: Can you tell me about your experience with e-commerce adoption in your SME's innovation and technological operations?

Interviewee 1: Of course, I'd be happy to share my experience. E-commerce has made a big difference for our small business. It helped us come up with new ideas and use technology better. We started selling online, and that changed how we work. We reached more customers, made things run smoother, and used our resources better. Talking to customers online helped us understand what they want, so we improved our products. Plus, we learned how to use data to make smart choices and make things customers like. This change meant our team had to learn new stuff and use digital tools better. As a result, we saved money and got orders out faster.

Interviewer: What were the key factors that influenced your decision to adopt e-commerce in your business?

Interviewee 1: We decided to use e-commerce in our business because a few important things showed us it's a smart move. First, lots of students wants to learn online, but there was no such opportunity in Bangladesh in that time. So we had to keep up. Also, using e-commerce helped us reach more people across different places, which was hard with just a physical learning. So, we saw that e-commerce was the way to go for our business to grow and reach more customers. Moreover, the idea of making our operations work well and spending money wisely was appealing. E-commerce could help us manage our services in a simpler way, cut down on extra expenses, and use our resources smarter. This goes perfectly with our goal of being efficient and staying competitive. The chance to get information from data was also exciting. E-commerce can gather and study how people behave, which can help us make our products better, give customers personal experiences, and make smart choices for our business.

Interviewer: How did you assess the potential benefits and challenges of integrating e-commerce into your SME's operations?

Interviewee 1: We've taken careful steps to understand how adding ecommerce to SMEs can help us. We start by looking at our current operations, what's going well and what needs improvement. This allows us to understand that e-commerce can improve our management, attract more customers

and provide us with real-time information. We also factor in the costs of creating a website, ensuring online security, and training our team. Research has shown us what customers like and is popular in our industry. We also think about data security, online competition and staying up to date with new technology. By considering all these factors, we have a clear idea of the benefits and challenges of e-commerce and how it can fit into our plans.

Interviewer: What specific challenges did you face during the e-commerce adoption process, and how did you overcome them?

Interviewee 1: Certainly, when you're trying something new, you can expect to face challenges, and we did. At first, some of our team members felt unsure, but we helped them by providing training and support. Dealing with payment systems was tricky, so we got experts to help us. We made sure to focus on security to protect our data. Staying current online needed careful planning and fast decision-making. Challenges were part of the journey, but we found solutions to keep going.

Interviewer: How has the adoption of e-commerce impacted your SME's ability to innovate and implement technological advancements?

Interviewee 1: E-commerce has create a significant impact in our SME in terms of using innovation and technology. There is a new online learning platform where people can learn quality education in online, it created a new way of leaning. It transformed the way we think about learning. It enhance our creativity and motivated us to learn new technology quickly. We can compete better and it helping us stay up-to-date with the latest tech trends and innovation.

Interviewer: In which way e-commerce integration facilitated more efficient business processes within your SME?

Interviewee 1: E-commerce made our SME much more efficient. Tasks like managing and fulfilling courses became easier. People can easily enrolled in new courses with their choice. When everything managed in online, it helped reducing mistakes and doing work faster. We could make better and quicker choices with real-time data. Being online helped us reach more customers, making us work better overall.

Interviewer: Have you noticed any changes in customer engagement or relationships since adopting e-commerce? If so, how has this affected innovation within your SME?

Interviewee 1: Absolutely, shift to e-commerce has brought noticeable changes in customer engagement and relationships. We now have more direct interactions with customers through online platforms, which allows us to respond faster and provide personalized experiences. This increased engagement has led to a better understanding of our customers' needs. It has encouraged a culture of ongoing innovation as well. Customer feedback plays a central role in shaping our product improvements and service enhancements. It's creating a mutually beneficial relationship where customer insights drive innovation, ultimately boosting our SME's growth and efficiency.

Interviewer: How do you measure the success of e-commerce adoption in terms of innovation and technological efficiency?

Interviewee 1: Our e-commerce adoption's accomplishment is clear in both innovation and technological efficiency. We measure innovation by how we improve our products based on what customers want, showing we respond to their needs. And we measure tech efficiency by making things work better inside our business, like fewer mistakes and using resources well. These two things work together – when we're creative, our tech gets better and the other way around. This helps us make customers happy, stay competitive, and grow our SME in the digital world.

Interviewer: What kind of support or resources do you think SMEs in Bangladesh need to enhance their e-commerce capabilities and technological innovation?

Interviewee 1 From my perspective, SMEs in Bangladesh can get significant benefit from increased access to specialized training programs. Which can be focused on e-commerce strategy and the integration of innovative technologies. Proper monitoring is necessary for these programs. This would empower them to navigate the digital world more effectively.

Interviewer: From your perspective, what role do government policies or initiatives play in promoting e-commerce adoption and technological advancements among SMEs in Bangladesh?

Interviewee 1: I think government policies and efforts can make a big difference in helping small businesses in Bangladesh. Which can inspire more people to use of e-commerce and technology. Policies like simplify the online business registration, ensure transparency, proper support for technology adaptation can motivate SMEs to embrace e-commerce. These steps can really impact how fast we adopt digital changes.

A Bangladeshi national man who working as IT Manager in an e-commerce company in Dhaka, Bangladesh for 3 years.

Interviewer: Can you tell us about your experience with e-commerce adoption in your SME's innovation and technological operations?

Interviewee 2: Since I joined this company I gathered different experience in many things including the adaptation of e-commerce. Previously I also worked in another company where I also get opportunity to gather knowledge about technological efficiency and innovation. In our journey of e-commerce adoption within our SME, I've learned some important lessons. One of them is not to focus only on efficiency and making things big. It's okay to think about other aspects too. Accepting uncertainty is important. Sometimes we don't know what will work, but that's okay. I also found that small changes matter. Making little improvements in what I do has added up over time. Moreover, I realized that separating innovation and technology from our products and processes doesn't work well. They should all work together. E-commerce has become a way for us to practice these principles, leading to a more balanced and innovative growth path for our business.

Interviewer: What were the key factors that influenced your decision to adopt e-commerce in your business?

Interviewee 2: We had several reasons for choosing e-commerce for our business. Firstly, we believed it would improve our work and be user-friendly for our team. Secondly, it offered clear benefits over our previous methods. We also prioritized building trust and ensuring customer safety, and e-commerce aligned with these values. It enabled us to save money while providing a better customer experience. Moreover, e-commerce extended our reach to distant customers. These compelling reasons led us to embrace e-commerce to enhance our business.

Interviewer: How did you assess the potential benefits and challenges of integrating e-commerce into your SME's operations?

Interviewee 2: We evaluated the possible good things and problems that might come with adding e-commerce to our business. First, we looked at how many people would come to our website and how many of them would actually buy services. We were concerned about the quality website traffic and visitor conversion. We also thought about how visible our business would be online, and if we could find the right people who would like what we sell. We were concerned about safety too, making sure that our customers' information would be safe when they shop online. We also thought about how big our business could become and if e-commerce would match what we wanted to do. This helped us see that e-commerce could bring good things like more customers and sales, but we also had to be careful about challenges like keeping things safe and finding the right people.

Interviewer: What specific challenges did you face during the e-commerce adoption process, and how did you overcome them?

Interviewee 2: Well, doing new things can be challenging. We faced similar challenges like staffs training, security of the site, payment and some management challenges. Adapting online needed careful attention and quick thinking. We took careful consideration to those challenges and create solutions according to that. Experts helps us to overcome from that.

Interviewer: How has the adoption of e-commerce impacted your SME's ability to innovate and implement technological advancements?

Interviewee 2: Adding e-commerce into our SME has transformed our approach to innovation and technology. It's made us more creative and willing to try new things. It also keeping us updated on the latest technology trends. E-commerce has enabled direct customer interaction, enhancing our understanding of their preferences and needs, leading to better product and service offerings. Plus, we're now more open to using technology to improve how we work and how we serve our customers. Ultimately making us more innovative and tech-savvy, driving business growth.

Interviewer: In which way e-commerce integration facilitated more efficient business processes within your SME?

Interviewee 2: E-commerce has significantly improved our SME's operations in various ways. Firstly, our e-commerce website serves as our central hub, streamlining all activities. It's also great for getting information about what our customers like and want. It enabling us to personalize their experiences.

E-commerce has expanded our reach, reaching customers even at a distance. Additionally, we're able to give customers more ways to talk to us if they need help. Overall, e-commerce has made our business run smoother and made us better at serving our customers in many ways.

Interviewer: Have you noticed any changes in customer engagement or relationships since adopting e-commerce? If so, how has this affected innovation within your SME?

Interviewee 2: Yes, I've definitely seen changes in how customers connect with us since we started using e-commerce. Their commitment to our brand has grown, leading to better customer retention. Customers seem more satisfied with their online experiences too. E-commerce has improved the connection and interaction we have with them. This shift has actually boosted innovation within our SME. By listening to customers more closely, we've come up with new ideas that really help them. Their feedback drives us to develop innovative solutions, making our products and services even better. So, e-commerce has not only improved customer relationships but also ignited innovation in exciting ways.

Interviewer: How do you measure the success of e-commerce adoption in terms of innovation and technological efficiency?

Interviewee 2: I think, e-commerce success means two things: doing new things and doing things better. For new things, we see if customer ideas improve what we offer. For doing better, we check if our work is smoother, with less mistakes and using things wisely. Both these things help us grow and stay modern with technology.

Interviewer: What kind of support or resources do you think SMEs in Bangladesh need to enhance their e-commerce capabilities and technological innovation?

Interviewee 2: In my view, Offering customized mentorship and consulting services to SMEs in Bangladesh could make a huge difference. Having experienced professionals help them improve their e-commerce processes and adopt new technologies could result in remarkable growth. Creating digital infrastructure and improving internet connectivity across the country would enable smoother e-commerce operations as well.

Interviewer: From your perspective, what role do government policies or initiatives play in promoting e-commerce adoption and technological advancements among SMEs in Bangladesh?

Interviewee 2: I believe that government policies and initiatives play a significant role in driving e-commerce adoption and technological progress among SMEs in Bangladesh. They can provide a framework that can speed up the integration of digital innovations into the SME sector.

A Bangladeshi national man who working as Project Manager in an e-commerce company in Dhaka, Bangladesh for 3 years.

Interviewer: Can you tell us about your experience with e-commerce adoption in your SME's innovation and technological operations?

Interviewee 3: Bringing e-commerce into our SME has been a significant transformation. We did it to enhance our ideas and technology. Going online allowed us to connect with a wider audience and

discover innovative ways of conducting business. It made us learn new things and use computers more. The results are clear - we offer better service, customers feel special, and we're growing our business the way we want. However, we remain in a constant state of learning and adoption. When there is a business in online there is always concern of privacy and security. Every day is like a new challenge and we make things happens to grow our business by learning new things.

Interviewer: What were the key factors that influenced your decision to adopt e-commerce in your business?

Interviewee 3: We decided to use e-commerce because it made sense for a few important reasons. First, a huge change in how people buy things was happening. People were interested in online a lot more, so we wanted to be part of that online world. Also, we wanted to reach more customers. E-commerce helped us get to new customers, even in different places, which fit with our plan to grow our business. Making things run better was another big reason. E-commerce promised to help us manage our products well, spend less money, and get orders out faster. This was perfect for how we wanted to be really good at running things. Getting helpful data was a big deal too. E-commerce let us understand how customers behave, so we could make our products even better and make smarter decisions. We also saw how well e-commerce worked for other businesses like ours. Seeing how much it helped them grow and come up with new ideas motivated us to do the same.

Interviewer: How did you assess the potential benefits and challenges of integrating e-commerce into your SME's operations?

Interviewee 3: We carefully studied how e-commerce could help our SME, looking at both the benefits and the challenges. We started by checking how we work inside to find where we could make things better. We thought about how e-commerce could help us reach more customers, work more smoothly, and use data to make smarter choices. But we also thought about the things we'd need, like new technology and how to keep things safe from online problems. We looked at what other similar businesses were doing and what's happening in the market right now. We even talked to experts and learned from others who already use e-commerce. All of this helped us make a smart choice that fits with our goal of being more innovative and using technology better.

Interviewer: What specific challenges did you face during the e-commerce adoption process, and how did you overcome them?

Interviewee 3: We came across some particular problems while adding e-commerce to our business, but we found ways to fix them. One challenge was staying consistent – making sure things worked well all the time. We also needed help with technology, so we partnered with experts who knew what they were doing. Keeping our customers coming back was important, so we worked on that too. Another big concern was safety. We wanted to make sure that our customers' information was protected when they shopped online. Lastly, finding the right people who would be interested in our products was tricky. But by trying different ways, we found ways to reach the right customers. Overall, we faced challenges but learned from them, making our e-commerce journey better over time.

Interviewer: How has the adoption of e-commerce impacted your SME's ability to innovate and implement technological advancements?

Interviewee 3: E-commerce boosted our innovation and tech progress. The impact of using e-commerce on the innovation and technological advancement of our SMEs is truly impressive. It makes us think of new and creative ideas helping us adopt new technology faster. This change has made us more competitive and helped us stay ahead in the world of new technology.

Interviewer: In which way e-commerce integration facilitated more efficient business processes within your SME?

Interviewee 3: E-commerce has enhanced our SME operations. We now communicate with customers faster, manage products and orders more efficiently, and use data for make decisions. Online payments are become easy, and our teams collaborate effectively, ultimately increasing our efficiency in our industry.

Interviewer: Have you noticed any changes in customer engagement or relationships since adopting e-commerce? If so, how has this affected innovation within your SME?

Interviewee 3: E-commerce has really changed how we connect with customers. It enables quick communication and personalized experiences, making our customers happier. This has inspired us to generate new ideas and continuous innovation cycle for our business. By listening to our customers and delivering what they want, we keep improving, fostering overall growth and adaptability.

Interviewer: How do you measure the success of e-commerce adoption in terms of innovation and technological efficiency?

Interviewee 3: I gauge the success of our e-commerce adoption by looking at innovation and how well technology works. We check the speed of our website and how many people visit it. If the search function is easy to use and people can find what they want quickly, that's a good sign. A user-friendly shopping cart is also important. We also see how interactive our website is – if customers can engage easily. All these things together show us how well we're using technology and if our ideas are bringing in more customers. If we see improvements in site speed, more traffic, efficient search, smooth purchase, and high interactivity, we know our e-commerce adoption is successful in terms of innovation and technological efficiency.

Interviewer: What kind of support or resources do you think SMEs in Bangladesh need to enhance their e-commerce capabilities and technological innovation?

Interviewee 3: I believe establishing collaborative platforms where SMEs can share insights and best practices would be invaluable. This communal approach to knowledge-sharing could foster a culture of innovation and collectively elevate e-commerce capabilities.

Interviewer: From your perspective, what role do government policies or initiatives play in promoting e-commerce adoption and technological advancements among SMEs in Bangladesh?

Interviewee 3: I believe that government rules and actions play a big role in how small businesses in Bangladesh use e-commerce and new technology. Policies like doing business in more easier way,

giving more privacy can motivate people more. They decide the rules and resources that affect everything, like what we can do and how we can get what we need.

A Bangladeshi national man who working as General Manager in an e-commerce company in Dhaka, Bangladesh for 5 years.

Interviewer: Can you tell us about your experience with e-commerce adoption in your SME's innovation and technological operations?

Interviewee 4: Using e-commerce has helped our small business come up with new ideas and use better technology. It has been a really good experience for me. It was a smart decision that changed how we work. Online, we learn about behavior and preferences of our clients and use that information to make our products and support better. We have learned new things and how to use online tools, and we have solved problems. The good things are clear we do things better, use our resources smarter, and we are better at competing. However, it has also been a bit of a journey with things like online safety and new ways of doing things. These things made us learn and get better with technology. Using e-commerce isn't just something we did – it's like a big adventure that changed how we do business.

Interviewer: What were the key factors that influenced your decision to adopt e-commerce in your business?

Interviewee 4: Our journey into e-commerce was set in motion by several key factors. Firstly, the changing preferences of clients pushed us towards this transformation. The increase in online shopping made it clear that we needed to adapt to new buying trends. Expanding our market was also a major motivator. E-commerce gave us the opportunity to reach wider people, breaking down barriers and paving the way for growth. Boosting efficiency was another driving force. E-commerce's ability to streamline operations, manage inventory better, and cut costs was a big advantage for how we manage our resources. The idea of using data to make better decisions was exciting as well. E-commerce provided us with valuable insights, helping us customize our products, services, and strategies to match what our clients want. Moreover, seeing how other businesses like ours succeeded with e-commerce inspired us. Seeing real results in terms of innovation and growth inspired us to our own ambitions.

Interviewer: How did you assess the potential benefits and challenges of integrating e-commerce into your SME's operations?

Interviewee 4: We carefully looked into integrating e-commerce into our SME's operations. We started by examining how we work now, and finding ways to make it better with e-commerce. We thought about expanding our network of clients and using data to make choices; but also the tough parts like keeping things safe online and teaching our team. We also checked how much it might cost and what we might get back. We even looked at what other small businesses did with e-commerce. By doing all this, we made sure we understood how e-commerce could help us be more innovative and better with technology.

Interviewer: What specific challenges did you face during the e-commerce adoption process, and how did you overcome them?

Interviewee 4: As we started using e-commerce, our team faced a challenge because we didn't know much about the technical stuff. But we fixed this by getting training and going to workshops. Align different online business in one platform was challenging. We made sure things were safe online with strong rules. And to keep up with changes online, we made our workplace more flexible and open to new ideas.

Interviewer: How has the adoption of e-commerce impacted your SME's ability to innovate and implement technological advancements?

Interviewee 4: E-commerce coming in has really changed how we come up with new ideas and use cool technology in our SME. It's like a spark that made us learn, and use new tech faster. We're not afraid to use new platforms, features, resources; or strategies. This has turned our SME into a place where we're always curious, working as a team, and being creative.

Interviewer: In which way e-commerce integration facilitated more efficient business processes within your SME?

Interviewee 4: E-commerce integration has really improved how we do things in our SME. As our business is B2B, our clients can get their products online, making transactions quicker. It helps us manage our services better so we don't run out of things. Orders are processed automatically; which means less mistakes. We also get data on what companies like, so we can offer them what they want. Being online means we can reach a wider network of collaborators and provide more facilities. Our e-commerce site is open all the time, so our clients can start getting benefits whenever they want. Plus, a lot of our work; like connecting right people with right business is done online, which saves us time. E-commerce has made things easier and more efficient for us.

Interviewer: Have you noticed any changes in customer engagement or relationships since adopting e-commerce? If so, how has this affected innovation within your SME?

Interviewee 4: Absolutely, e-commerce really changed how we interact with clients. Being online means we can connect faster; and make them happier with quick responses. This change also pushed us to come up with new ideas. We listen to what clients say, and make things better; which helps us move forward. E-commerce is driving our SME to be better and more advanced.

Interviewer: How do you measure the success of e-commerce adoption in terms of innovation and technological efficiency?

Interviewee 4: I assess e-commerce success using measures such as website visits, how many visitors turn into clients, using new tech, and how easy checkout is. Also if clients are happy, giving personal suggestions, using data to make decisions, keeping things safe, growing without problems, being responsible and if it is worth the investment. These show how well we come up with new ideas, make clients happy, do well in selling things; and getting clients involved.

Interviewer: What kind of support or resources do you think SMEs in Bangladesh need to enhance their e-commerce capabilities and technological innovation?

Interviewee 4: Based on what I have seen; it is really important for small businesses in Bangladesh to have tools, and software for e-commerce that are easy to use and don't cost too much. If we make these resources available it can help SMEs use technology in a good way and improve their businesses.

Interviewer: From your perspective, what role do government policies or initiatives play in promoting e-commerce adoption and technological advancements among SMEs in Bangladesh?

Interviewee 4: I strongly believe that, government rules and actions are really important for helping small businesses in Bangladesh use e-commerce and technology better. The Bangladesh government's decision to exempt digital platforms from taxes has excited and motivated people to get more involved in digital work; reflecting a positive response to the incentives provided.

A Bangladeshi national man who working as IT Support Officer in an e-commerce company in Dhaka, Bangladesh for 4 years.

Interviewer: Can you tell us about your experience with e-commerce adoption in your SME's innovation and technological operations?

Interviewee 5: Embracing e-commerce opened up a world of new opportunities for me. I had to learn new digital skills to stay competitive, and this journey led to positive growth in my career. Interacting with customers online became a key part of our work, which helped me understand their needs better. As we adapted to e-commerce, we also improved our processes, making them more efficient. Ensuring online security was a top priority to protect both my business and clients. The constant change in the digital landscape pushed us to keep up with technological improvements, and it's been an exciting journey of personal and professional development.

Interviewer: What were the key factors that influenced your decision to adopt e-commerce in your business?

Interviewee 5: Our decision to adopt e-commerce was shaped by several key factors. First, we noticed shifts in client's behavior, and we needed to adapt to these changes. E-commerce presented an opportunity for market expansion, which aligned perfectly with our growth objectives. It also allowed us to streamline our operations, manage inventory more efficiently, and reduce costs. The potential for data-driven insights was another compelling factor. Seeing how e-commerce had simulated innovation and growth in other businesses further motivated our decision.

Interviewer: How did you assess the potential benefits and challenges of integrating e-commerce into your SME's operations?

Interviewee 5: I assessed e-commerce integration's potential benefits and challenges systematically. Analyzing our processes and market, we gauged how it could improve market reach and efficiency. We got advice from experts about technical stuff. Employee feedback considered carefully. This thorough evaluation ensured e-commerce aligned with our goals, fostering SME growth and innovation.

Interviewer: What specific challenges did you face during the e-commerce adoption process, and how did you overcome them?

Interviewee 5: We knew that managing multiple businesses and expanding our network at the same time could be a significant challenge. To compete effectively in the online marketplace, we needed to be technologically efficient and ensure secure data protection. To tackle these challenges, we sought tech advice to help us navigate this journey. Experts simplified complex issues, and we implemented robust cybersecurity measures. Adapting to the online landscape required us to stay open to constant improvement and employ smart strategies.

Interviewer: How has the adoption of e-commerce impacted your SME's ability to innovate and implement technological advancements?

Interviewee 5: The integration of e-commerce has impacted our SME in several ways. It has brought up a culture of innovation, driving us to become more creative and adept at employing advanced tools. This transformation has significantly boosted our competitiveness in the market. Moreover, it has introduced in us a readiness to embrace new technologies continuously, keeping us at the forefront of innovation within our industry. In short, e-commerce has become the motivation for ongoing innovation and technological progress within our organization.

Interviewer: In which way e-commerce integration facilitated more efficient business processes within your SME?

Interviewee 5: E-commerce has brought numerous improvements to our SME. Our order fulfillment is faster; thanks to e-commerce tools. We have strengthened our collaboration with suppliers, ensuring a smooth supply chain. Customer support has become more efficient; providing quick assistance. Our online visibility has expanded, reaching a broader audience. These enhancements have significantly improved our overall business operations.

Interviewer: Have you noticed any changes in customer engagement or relationships since adopting e-commerce? If so, how has this affected innovation within your SME?

Interviewee 5: Yes, I've seen changes in how customers connect with us after using e-commerce. Clients seem happier, and we can make them even more delighted. By surprising them with special offers and products, we keep them excited. We've also built a community where they can share thoughts. Following a smart content plan helps us stay connected with them. Personalizing their experience has made us even closer to them. This shift has impacted our innovation too. Getting direct feedback from clients has led us to create better things they want. We've also come up with new ideas by seeing what they like. So, e-commerce has not only improved our customer relationships but also boosted our innovation in exciting ways.

Interviewer: How do you measure the success of e-commerce adoption in terms of innovation and technological efficiency?

Interviewee 5: I measure e-commerce success by looking at how convenient it is for our clients to shop, the choices they have, and if they can customize orders. Communication matters too. On the

tech side, I check website speed, ease of use, and if it helps to serve customers better. If these improve, e-commerce is successful for innovation and technology.

Interviewer: What kind of support or resources do you think SMEs in Bangladesh need to enhance their e-commerce capabilities and technological innovation?

Interviewee 5: Well; I think improving digital infrastructure; like making the internet better and having safe and improved payment options; would really help small businesses. Having a strong online setup is important for making e-commerce better and coming up with new ideas. When things online work well, it's easier for small businesses to do more and grow.

Interviewer: From your perspective, what role do government policies or initiatives play in promoting e-commerce adoption and technological advancements among SMEs in Bangladesh?

Interviewee 5: In my view, government actions play a big role in how e-commerce and technology grow among small businesses in Bangladesh. They shape the environment by offering incentives and rules that affect how businesses use technology and sell online. Giving tax free income to the people who work online is the one of the biggest policies of Bangladesh government.

A Bangladeshi national man who working as Business Analyst in an e-commerce company in Dhaka, Bangladesh for 3 years.

Interviewer: Can you tell us about your experience with e-commerce adoption in your SME's innovation and technological operations?

Interviewee 6: Well, telling about my experience with e-commerce adaptation was quite interesting. I embarked on this journey with the goal of modernizing our operations and staying competitive in a digital-first world. In our organization, we began by conducting a thorough assessment of our existing business processes. This involved examining how we interacted with customers, managed inventory, and handled transactions. We identified areas where technology could bring about significant improvements. We recognized the potential benefits of e-commerce, such as expanding our customer reach, streamlining our operations, and gaining valuable insights from data. The financial aspect was integral to our decision-making process. We carefully weighed the upfront investments required in technology against the potential long-term gains. Additionally, we actively engaged with industry dialogues and sought the experiences of other SMEs that had ventured into e-commerce before us. These interactions provided valuable insights and practical knowledge that informed our decision-making.

Interviewer: What were the key factors that influenced your decision to adopt e-commerce in your business?

Interviewee 6: There are several key factors that to take the decision to adopt the e-commerce in our business. Firstly, e-commerce is an opportunity to connect with clients online. Secondly, when we see if we have e-commerce platform we can able to perform our operations smoothly. From inventory management to order processing, which could ultimately lead to cost savings and improved customer experiences. Thirdly, the society is now become more online user. As more businesses are

very much interested in online platform for their procurement needs, we want to take the advantage of this.

Interviewer: How did you assess the potential benefits and challenges of integrating e-commerce into your SME's operations?

Interviewee 6: We carefully analyzed how our SME operates to understand the potential benefits and challenges. Market research and financial aspect was integral to our assessment. Cost-benefit analysis help us to find what is investment is necessary for technology and the potential long term gains in terms of innovation efficiency improvement.

Interviewer: What specific challenges did you face during the e-commerce adoption process, and how did you overcome them?

Interviewee 6: There was some challenges we faced during the adoption process. Like data security and cybersecurity was main challenge. Digital marketing strategy including SEO, social media campaign and advertising was also challenging in this competitive online world. We faced these challenges and to overcome from these challenges we take advice from technical experts and create customer-centric approaches, and ongoing adaptation to industry developments.

Interviewer: How has the adoption of e-commerce impacted your SME's ability to innovate and implement technological advancements?

Interviewee 6: The adoption of e-commerce has been a game-changer for our SMEs ability to innovate; and implement technological advancements. It helps us change what we do quickly and lets us see what our clients like; and what's happening in the market. We use data from e-commerce to understand our clients better as well. This helps us make things that our clients want. E-commerce has helped us use more new and smart technology to become more creative and better in the future.

Interviewer: In which way e-commerce integration facilitated more efficient business processes within your SME?

Interviewee 6: E-commerce integration has improved the efficiency of our business processes significantly. We help individuals who want to start their businesses, and connect them to suitable opportunities. Clients can get what they need; and start getting benefits from it. E-commerce integration made this possible. Overall; e-commerce has made our small business better, and allowed us to do more with less effort.

Interviewer: Have you noticed any changes in customer engagement or relationships since adopting e-commerce? If so, how has this affected innovation within your SME?

Interviewee 6: Sure; I have noticed that more people talk to us; and take services from us since we started being online. This helps to understand that what clients want; and how they want. So we know what type of new ideas can be helpful for our business that can increase customer interaction and personalization.

Interviewer: How do you measure the success of e-commerce adoption in terms of innovation and technological efficiency?

Interviewee 6: I think when people visits website, and return back to the site both is a positive sign to become successful e-commerce adoption. Because in terms of innovation and technological efficiency, when website traffic is good and communication is safe it can turn customer as a part of the company. It build trust and also return of investment (ROI) become positive.

Interviewer: What kind of support or resources do you think SMEs in Bangladesh need to enhance their e-commerce capabilities and technological innovation?

Interviewee 6: Well, Bangladesh is a developing country and still there is far to go to achieve the ultimate goal. I think more effective training and education in a right manner will be helpful for developing resources to enhance e-commerce capabilities and technological innovation. Also, mentorship and networking is important to enhance e-commerce capabilities.

Interviewer: From your perspective, what role do government policies or initiatives play in promoting e-commerce adoption and technological advancements among SMEs in Bangladesh?

Interviewee 6: From my perspective; consumer protection and data security is important when it comes to the online business. Government can execute some special policies; that can ensure more transparency in consumer rights and data protection. Moreover, rewards for coming up with new ideas can encourage small businesses to try out; and use new technologies can make technology and e-commerce sector even better.

A Bangladeshi national man who working as Assistant Manager (IT) in an e-commerce company in Dhaka, Bangladesh for 3 years.

Interviewer: Can you tell us about your experience with e-commerce adoption in your SME's innovation and technological operations?

Interviewee 7: Our move into e-commerce was a tech discovery with new ideas. Personally, it was an interesting experience for me. Going online gave us a fresh start. E-commerce was like a treasure hunt, finding smart things from talking to customers. We learned a lot – our team got better with tech, we improved how we work, and used fast info. It helped us make things faster, react to markets quicker, and connect better. But e-commerce has hard parts too; we keep data safe and watch tech changes. It's not just buying and selling; it's a thing that helps us get better with ideas and tech.

Interviewer: What were the key factors that influenced your decision to adopt e-commerce in your business?

Interviewee 7: We chose e-commerce for a few important reasons. First, how people shopped was changing, so we needed to change too. E-commerce also let us reach new clients and grow our business. It made our work smoother, saved money, and helped us learn from customer data. Seeing other businesses do well with e-commerce inspired us to give it a try.

Interviewer: How did you assess the potential benefits and challenges of integrating e-commerce into your SME's operations?

Interviewee 7: We looked at e-commerce closely. First, we checked our operations for places to improve. We thought about good things like better engagement and data use, but also challenges like cybersecurity. Money was important too. Reports and experts helped us to learn. This helped us decide that e-commerce matched our innovation and efficiency goals.

Interviewer: What specific challenges did you face during the e-commerce adoption process, and how did you overcome them?

Interviewee 7: During our adoption process, we encountered several specific challenges that demanded strategic solutions. Competition posed difficulties, requiring us to differentiate our offerings and create a unique value proposition. Order fulfillment complexities were addressed through process optimization and efficient inventory management. To enhance customer experience, we invested in user-friendly interfaces and personalized services. Generating quality website traffic and visitor conversion called for targeted marketing campaigns and engaging content. Visibility was improved by leveraging social media platforms and search engine optimization strategies. Overcoming these challenges involved a blend of innovation, streamlined processes, and a customer-centric approach, ensuring our successful transition into the e-commerce landscape.

Interviewer: How has the adoption of e-commerce impacted your SME's ability to innovate and implement technological advancements?

Interviewee 7: E-commerce has brought a lot of changes to our small business. It has given us new ideas and made us use technology in better ways. We now use smart tools to make our clients happy, work more efficiently; and understand data. This has made our work smoother, improved communication with clients; and made us more focused on digital excellence. E-commerce has encouraged us to be more creative and tech-savvy; making us better every day.

Interviewer: In which way e-commerce integration facilitated more efficient business processes within your SME?

Interviewee 7: Embracing e-commerce brought a wave of efficiency to our operations. E-commerce integration made a big difference in how we manage orders, cutting down on mistakes and delays. This upgrade boosted our overall efficiency; making our processes more flexible and responsive.

Interviewer: Have you noticed any changes in customer engagement or relationships since adopting e-commerce? If so, how has this affected innovation within your SME?

Interviewee 7: Definitely, e-commerce transformed how we engage with customers. Quick online interactions improved connections. This change sparked innovation. Feedback from clients shaped improvements and inspired new ideas that push our SME forward.

Interviewer: How do you measure the success of e-commerce adoption in terms of innovation and technological efficiency?

Interviewee 7: Measuring e-commerce success in innovation and tech efficiency involves diverse markers. I analyze website traffic, user engagement, technology integration, checkout smoothness, client satisfaction; and the influence of personalized recommendations on sales. These insights guide our dynamic e-commerce approach; prioritizing innovation and client satisfaction.

Interviewer: What kind of support or resources do you think SMEs in Bangladesh need to enhance their e-commerce capabilities and technological innovation?

Interviewee 7: SMEs in Bangladesh need better digital tools, user-friendly e-commerce platforms, training, and support. Reliable internet and easy and secure payment systems are essential. Financial help and partnerships with the government would be beneficial. Workshops and guidance can aid SMEs in adapting to the digital world. These steps will help SMEs make the most of e-commerce and enhance their technological capabilities, boosting growth and competitiveness.

Interviewer: From your perspective, what role do government policies or initiatives play in promoting e-commerce adoption and technological advancements among SMEs in Bangladesh?

Interviewee 7: Bangladesh government is actively promoting, and supporting online, and digital work. People are now getting the benefit of different government policies like tax free income from online work. They are trying to establish an environment for fair competition. Which provides incentives; and resources to encourage innovation.

A Bangladeshi national man who working as System Administrator in an e-commerce company in Dhaka, Bangladesh for 2 years.

Interviewer: Can you tell us about your experience with e-commerce adoption in your SME's innovation and technological operations?

Interviewee 8: Absolutely, my experience with e-commerce adoption has been truly transformative for our small business. It's like embarking on an exciting new journey in the world of technology and innovation. E-commerce has brought a fresh wave of creativity into our operations, pushing us to explore new ways of doing things and integrating cutting-edge technologies. This change has not only streamlined our processes but has also encouraged us to think beyond the ordinary and come up with inventive solutions. We've witnessed significant improvements in our operations. Processes that used to take a lot of time and effort are now much more streamlined and efficient. E-commerce has allowed us to better understand our clients' preferences and behaviors through data analysis, which has informed our product development and service enhancements.

The integration of e-commerce has led the way for personalized customer experiences and real-time interactions, strengthening our relationships with our customers. Moreover; it has given us valuable insights into market trends and demands, allowing us to be more responsive and adaptable. However, this journey has come with its own set of challenges. We had to ensure the security of our online platform and clients' data, and we had to adapt to the rapidly changing digital world. Nonetheless, these challenges have motivated us to keep innovating and getting better.

Interviewer: What were the key factors that influenced your decision to adopt e-commerce in your business?

Interviewee 8: Our decision to adopt e-commerce was driven by a mix of strategic factors. The changing preferences of clients highlighted the need for digital engagement. The rise of online shopping pushed us to adapt and connect better with our audience. The chance to gather insights from clients' data was too good to pass up. E-commerce gave us the tools to understand customer behavior and adjust our strategies accordingly. Seeing other businesses succeed through e-commerce inspired us too. Their achievements showed us the potential of e-commerce for growth and innovation in our field.

Interviewer: How did you assess the potential benefits and challenges of integrating e-commerce into your SME's operations?

Interviewee 8: Assessing the potential benefits and challenges of integrating e-commerce into our SME's operations was a methodical process. Firstly, we recognized that e-commerce could substantially increase our reach and revenue by tapping into a wider audience. Building an online reputation through customer reviews emerged as a key advantage, fostering trust and credibility. Conversely, we acknowledged the potential challenges of transitioning. Lower operational and labor costs were anticipated, but we were mindful of the initial investments required to set up the online platform. Client data and inventory tracking seemed promising, yet concerns about data security prompted us to prioritize cybersecurity measures. We recognized that improved client communication was feasible, but it also meant managing a swift response mechanism. Our assessment involved a thorough consideration of each aspect's benefits and challenges, weighing the potential gains against the required adjustments and safeguards for a successful e-commerce integration.

Interviewer: What specific challenges did you face during the e-commerce adoption process, and how did you overcome them?

Interviewee 8: As our e-commerce site grew, we faced a few challenges. We worried about keeping payments safe when we added new ways to pay. We worked with trusted partners and used strong safety methods. Also; making sure our site looked good on all devices (phones, computers) was hard. We used special designs and checked how things worked everywhere.

Interviewer: How has the adoption of e-commerce impacted your SME's ability to innovate and implement technological advancements?

Interviewee 8: Bringing e-commerce into our small business has caused a big change; in how we come up with new ideas and use technology. Now, we are always thinking of new ways to do things and quickly adopting the latest technology. This has made us better at competing with others; and using the newest tech trends to be creative. Our business has transformed because of e-commerce and now we're all about using the latest tools and being innovative.

Interviewer: In which way e-commerce integration facilitated more efficient business processes within your SME?

Interviewee 8: E-commerce integration made our small business work better. It helped us do things more quickly and smoothly. For example, taking orders and processing payments became faster and easier online. We also could keep track of inventory in real-time, so we know what's available all the time. This helped us serve clients better and avoid running out of products. Communication improved too; we could talk with clients online and answer their questions faster. Overall, e-commerce made our business run smoother and made us better at serving our clients.

Interviewer: Have you noticed any changes in customer engagement or relationships since adopting e-commerce? If so, how has this affected innovation within your SME?

Interviewee 8: Absolutely, embracing e-commerce transformed how we connect with clients. Quick online interactions strengthened our bonds with them. This change sparked our innovative drive. By listening to customer feedback, we customized our products and services, fostering innovation that powers our SME's growth.

Interviewer: How do you measure the success of e-commerce adoption in terms of innovation and technological efficiency?

Interviewee 8: To figure out how well e-commerce is doing; especially when it comes to new ideas and using technology smartly, I look at different numbers. I check how many people are visiting our website; how much they are getting involved and whether we're using cool new technologies. I also see how easy it is for people to buy things from us online; and what our clients are saying. It is important to see if the suggestions we give to clients make them want to buy more.

Interviewer: What kind of support or resources do you think SMEs in Bangladesh need to enhance their e-commerce capabilities and technological innovation?

Interviewee 8: Getting small businesses (SMEs) to work together with big e-commerce companies could be really helpful. They can share what they know; and learn from each other about using new technology. Both sides can benefit; and this teamwork can help small businesses grow and come up with new ideas.

Interviewer: From your perspective, what role do government policies or initiatives play in promoting e-commerce adoption and technological advancements among SMEs in Bangladesh?

Interviewee 8: From my perspective, government policies have a significant impact on encouraging e-commerce adoption and technological progress among SMEs in Bangladesh. Government support can create a favorable environment that fosters growth in these areas. For instance, Bangladesh government have policies that simplify online business registration, no taxes on online work, and providing incentives for technology adoption which is motivating SMEs to venture into e-commerce. Moreover; offering financial assistance for technology adoption, and creating digital infrastructure can empower SMEs to embrace e-commerce and technological advancements. These efforts can level the playing field, making it easier for smaller businesses to compete in the digital marketplace.

A Bangladeshi national man who working as Data Analyst in an e-commerce company in Dhaka, Bangladesh for 3 years.

Interviewer: Can you tell us about your experience with e-commerce adoption in your SME's innovation and technological operations?

Interviewee 9: My journey with e-commerce has taught me a few important things. First, having a fast; and smooth website is crucial for getting more people to buy from us. Second, talking directly to the clients; and giving them what they want is really important for building good relationships. Third, using technology well helps to work better and save time. So, we keep learning and using these ideas to do better in e-commerce.

Interviewer: What were the key factors that influenced your decision to adopt e-commerce in your business?

Interviewee 9: Our choice to use e-commerce was influenced by considering our products, clients and how our business works. E-commerce allowed us to offer more things; and understand what clients like. It also made our work easier and saved us time and money. So; using e-commerce was a smart decision for our business and it made us better at what we do.

Interviewer: How did you assess the potential benefits and challenges of integrating e-commerce into your SME's operations?

Interviewee 9: When we thought about using e-commerce in our small business; we looked at a few important things. We saw that clients expect a lot online; so we wanted to make sure our website was easy to use. We wanted to keep our brand the same online, so people know it's us. We knew we had to keep clients' information safe when they buy online. We made sure the online store we used was secure. We thought about how to protect our business from online threats like hacking. We wanted to make sure our online business was safe for us and our clients. So, we looked at all these things before integrating e-commerce.

Interviewer: What specific challenges did you face during the e-commerce adoption process, and how did you overcome them?

Interviewee 9: During adoption process, we faced some specific challenges like cyber-security threats and attract right client to our products. We had to make sure that our clients' information and our business data were safe from cyber threats, so we used regular security checks and to attract clients' social media marketing and ads helps us to overcome them.

Interviewer: How has the adoption of e-commerce impacted your SME's ability to innovate and implement technological advancements?

Interviewee 9: Using e-commerce has changed our SME in important ways. It made us faster and more flexible to meet clients' demands. We also became more efficient in managing our operations; allowing us to allocate resources for innovation. Furthermore, the data we gathered from e-commerce helped us understand our clients' better and create products they like. In short, e-commerce has brought speed, efficiency, and customer insights to our SME, driving innovation and enhancing our customer focus.

Interviewer: In which way e-commerce integration facilitated more efficient business processes within your SME?

Interviewee 9: E-commerce integration has made our SME more efficient in several ways. It sped up the buying process for clients and reduced costs. Additionally, it provided flexibility for clients to shop at their convenience and allowed us to respond rapidly to market demands. So overall it has expedited the buying process, reduced costs, provided flexibility to clients, and enabled fast responses to market dynamics; all contributing to our enhanced business performance.

Interviewer: Have you noticed any changes in customer engagement or relationships since adopting e-commerce? If so, how has this affected innovation within your SME?

Interviewee 9: Certainly, we have seen noticeable changes in how we engage with customers and how they interact with us since adopting e-commerce, and it's had a positive impact on innovation in our SME. We now connect with people through our website, email, and social media; which has allowed us to better understand what they like and respond to their questions faster. These improved relationships with customers have made us better at innovating. We listen to their feedback and watch how they shop; which helps us come up with new ideas for products and services they'll love. Plus, we can adapt quickly to changes in the market or what customers want, thanks to the real-time nature of e-commerce. In simple terms, e-commerce has strengthened our bond with customers and made us more innovative in meeting their needs.

Interviewer: How do you measure the success of e-commerce adoption in terms of innovation and technological efficiency?

Interviewee 9: I measure how well e-commerce is helping us come up with new ideas; and use technology better in some simple ways. We look at things like how many new products we have introduced since using e-commerce; and how fast clients start using them. I also see how quickly we can bring new ideas to the market; and what our clients say about them. I also keep an eye on revenue growth; client conversion rates and return visits to evaluate the impact of e-commerce on our business.

Interviewer: What kind of support or resources do you think SMEs in Bangladesh need to enhance their e-commerce capabilities and technological innovation?

Interviewee 9: SMEs in Bangladesh need help with training, affordable tech; and money to do better with e-commerce and tech innovation. It also need guidance, and better internet. Moreover; they should learn more how to protect data. These things will help SMEs in Bangladesh to grow online.

Interviewer: From your perspective, what role do government policies or initiatives play in promoting e-commerce adoption and technological advancements among SMEs in Bangladesh?

Interviewee 9: Government policies in Bangladesh are like guidelines that can either help small businesses with e-commerce and technology. Good policies make it easier for businesses to operate online by setting clear rules; and providing financial help. Government can also invest in things like internet and training. Plus, they can protect businesses, and customers by making sure data is safe, and transactions are fair.

Appendix C: Initial Coding Framework

Initial Coding Framework Table

Interview transcript	Initial coding framework
Interviewer: Can you tell me about your experience with e-commerce adoption in your SME's innovation and technological operations?	
Interviewee 1: Of course, e-commerce adoption changed our small business. We reached more customers, made our work smoother, and figured out what our customers like. Learning how to use digital tools was important, saving us money and making our orders faster.	<ul style="list-style-type: none"> ● Transformed SME ● Broadened market ● Streamlined operations ● Give customer preferences ● Digital tools ● Cost savings ● Fast order fulfillment
Interviewer: What were the key factors that influenced your decision to adopt e-commerce in your business?	
Interviewee 1: People wanted online learning, so we started offering it. E-commerce helped us reach more customers, which was important for our growth. It also made our work smoother and more cost-effective, which matched our goals. Plus, we were excited about the data insights it provided. It allowing us to create better products, offer personalized experiences to customers, and make informed decisions.	<ul style="list-style-type: none"> ● Online learning demand ● Market expansion ● Streamlined operations ● Cost savings ● Data insights ● Better products ● Give customer preferences
Interviewer: How did you assess the potential benefits and challenges of integrating e-commerce into your SME's operations?	
Interviewee 1: We looked at how we were currently doing things and realized that e-commerce could help us manage things better and reach more customers. We also looked at the cost and did some research to make sure it was a good idea. We thought about security, what other companies are doing, and what technologies are most popular to understand how e-commerce can help us.	<ul style="list-style-type: none"> ● Analyzed current operations ● Improved management ● Customer reach ● Cost and research ● Security ● Competition ● Tech trends
Interviewer: What specific challenges did you face during the e-commerce adoption process, and how did you overcome them?	
Interviewee 1: At first, some of our team members felt unsure, but we helped them by providing training and support. Dealing with payment systems was tricky, so we got experts to help us. We made sure to focus on security to protect our data. Staying current online needed careful planning and fast decision-making. Challenges were part of the journey, but we found solutions to keep going.	<ul style="list-style-type: none"> ● Uncertainty among team members ● Training and support ● Prioritized security ● Stay up-to-date online ● Quick decision-making
Interviewer: How has the adoption of e-commerce impacted your SME's ability to innovate and implement technological advancements?	

<p>Interviewee 1: There is a new online learning platform where people can learn quality education in online, it created a new way of leaning. It transformed the way we think about learning. It enhance our creativity and motivated us to learn new technology quickly. We can compete better and it helping us stay up-to-date with the latest tech trends and innovation.</p>	<ul style="list-style-type: none"> ● New learning platform ● Transformation of learning approach ● Adopt new tech fast ● Improved competitiveness ● Stay up-to-date online
<p>Interviewer: In which way e-commerce integration facilitated more efficient business processes within your SME?</p>	
<p>Interviewee 1: Tasks like managing and fulfilling courses became easier. People can easily enrolled in new courses with their choice. When everything managed in online, it helped reducing mistakes and doing work faster. We could make better and quicker choices with real-time data. Being online helped us reach more customers, making us work better overall.</p>	<ul style="list-style-type: none"> ● Streamlined course management ● Easy enrollment ● Reducing errors ● Faster task competition ● Wider customer reach
<p>Interviewer: Have you noticed any changes in customer engagement or relationships since adopting e-commerce? If so, how has this affected innovation within your SME?</p>	
<p>Interviewee 1: Absolutely, shift to e-commerce has brought noticeable changes in customer engagement and relationships. Online platforms enable faster, personalized interactions, deepening our understanding of customer needs. This drives continuous innovation powered by customer feedback, driving the growth and efficiency of our SME.</p>	<ul style="list-style-type: none"> ● Faster customer engagement ● Personalized interactions ● Fueling growth and efficiency
<p>Interviewer: How do you measure the success of e-commerce adoption in terms of innovation and technological efficiency?</p>	
<p>Interviewee 1: We measure innovation by how we improve our products based on what customers want, showing we respond to their needs. And we measure tech efficiency by making things work better inside our business, like fewer mistakes and using resources well. These two things work together – when we're creative, our tech gets better and the other way around.</p>	<ul style="list-style-type: none"> ● Responsiveness to customer needs ● Making things work better ● Less mistakes ● Using resources well ● Customer satisfaction ● Stay competitive
<p>Interviewer: What kind of support or resources do you think SMEs in Bangladesh need to enhance their e-commerce capabilities and technological innovation?</p>	
<p>Interviewee 1: From my perspective, SMEs in Bangladesh can get significant benefit from increased access to specialized training programs. Which can be focused on e-commerce strategy and the integration of innovative technologies. Proper monitoring is necessary for these programs.</p>	<ul style="list-style-type: none"> ● Specialized training programs ● Proper monitoring
<p>Interviewer: From your perspective, what role do government policies or initiatives play in promoting e-commerce adoption and technological advancements among SMEs in Bangladesh?</p>	

<p>Interviewee 1: I think government policies and efforts can make a big difference in helping small businesses in Bangladesh. Which can inspire more people to use of e-commerce and technology. Policies like simplify the online business registration, ensure transparency, proper support for technology adaptation can motivate SMEs to embrace e-commerce.</p>	<ul style="list-style-type: none"> ● Simplify the online business registration ● Ensure transparency ● Proper support for tech adaptation
<p>Interviewer: Can you tell us about your experience with e-commerce adoption in your SME's innovation and technological operations?</p>	
<p>Interviewee 2: Since joining, I've gained varied experiences, including e-commerce integration. My previous role also enriched my understanding of tech efficiency and innovation. E-commerce adoption taught me to balance growth with other aspects, embrace uncertainty, and value small improvements. I've learned that innovation, technology, and operations go hand in hand.</p>	<ul style="list-style-type: none"> ● Balance growth with other aspects ● Embrace uncertainty ● Value small improvements ● Symbiotic relationship between innovation, technology, and operations
<p>Interviewer: What were the key factors that influenced your decision to adopt e-commerce in your business?</p>	
<p>Interviewee 2: Firstly, we believed it would improve our work and be user-friendly for our team. Secondly, it offered clear benefits over our previous methods. We also prioritized building trust and ensuring customer safety, and e-commerce aligned with these values. It enabled us to save money while providing a better customer experience. Moreover, e-commerce extended our reach to distant customers.</p>	<ul style="list-style-type: none"> ● User-friendly nature ● Advantages over traditional methods ● Trust and customer safety ● Cost savings ● Improve customer experience ● Extended reach beyond physical limits
<p>Interviewer: How did you assess the potential benefits and challenges of integrating e-commerce into your SME's operations?</p>	
<p>Interviewee 2: We considered website traffic, conversion rates, and online visibility. Safety of customer data was a concern. We also evaluated if e-commerce aligned with our goals and could attract the right customers. This showed us the potential for more customers and sales, but we stayed cautious about security and targeting.</p>	<ul style="list-style-type: none"> ● Website traffic ● Conversion rates ● Online visibility ● Safety of customer data ● Targeting right customer
<p>Interviewer: What specific challenges did you face during the e-commerce adoption process, and how did you overcome them?</p>	
<p>Interviewee 2: We faced similar challenges like staffs training, security of the site, payment and some management challenges. Adapting online needed careful attention and quick thinking. We took careful consideration to those challenges and create solutions according to that. Experts helps us to overcome from that.</p>	<ul style="list-style-type: none"> ● Staffs training ● Site security ● Payment ● Management challenge ● Expert help
<p>Interviewer: How has the adoption of e-commerce impacted your SME's ability to innovate and implement technological advancements?</p>	

<p>Interviewee 2: E-commerce made us more creative and willing to try new things. It also keeping us updated on the latest technology trends. E-commerce has enabled direct customer interaction, enhancing our understanding of their preferences and needs, leading to better product and service offerings. Plus, we're now more open to using technology to improve how we work and how we serve our customers. Ultimately making us more innovative and tech-savvy, driving business growth.</p>	<ul style="list-style-type: none"> ● Latest technology trends ● Direct customer connection ● Better products and services ● More open to use technology ● Innovation and business growth
<p>Interviewer: In which way e-commerce integration facilitated more efficient business processes within your SME?</p>	
<p>Interviewee 2: Firstly, our e-commerce website serves as our central hub, streamlining all activities. It's also great for getting information about what our customers like and want. It enabling us to personalize their experiences. E-commerce has expanded our reach, reaching customers even at a distance. Additionally, we're able to give customers more ways to talk to us if they need help. Overall, e-commerce has made our business run smoother and made us better at serving our customers in many ways.</p>	<ul style="list-style-type: none"> ● E-commerce as center role ● Customer preferences ● reach more people ● Enhanced customer communication ● Smoother operations ● Improved customer service
<p>Interviewer: Have you noticed any changes in customer engagement or relationships since adopting e-commerce? If so, how has this affected innovation within your SME?</p>	
<p>Interviewee 2: Yes, I've definitely seen changes in how customers connect with us since we started using e-commerce. Their commitment to our brand has grown, leading to better customer retention. Customers seem more satisfied with their online experiences too. E-commerce has improved the connection and interaction we have with them. This shift has actually boosted innovation within our SME. By listening to customers more closely, we've come up with new ideas that really help them. Their feedback drives us to develop innovative solutions, making our products and services even better.</p>	<ul style="list-style-type: none"> ● Customer interaction ● Enhanced brand commitment ● Better customer retention ● Higher customer satisfaction ● Improved connection and interaction with customers ● Stimulus for innovation within the SME ● Boosted innovation ● Enhanced products and services
<p>Interviewer: How do you measure the success of e-commerce adoption in terms of innovation and technological efficiency?</p>	
<p>Interviewee 2: I think, e-commerce success means two things: doing new things and doing things better. For new things, we see if customer ideas improve what we offer. For doing better, we check if our work is smoother, with less mistakes and using things wisely. Both these things help us grow and stay modern with technology.</p>	<ul style="list-style-type: none"> ● Doing new things ● Doing things better ● Smoother work ● Less mistakes ● Using things wisely
<p>Interviewer: What kind of support or resources do you think SMEs in Bangladesh need to enhance their e-commerce capabilities and technological innovation?</p>	

<p>Interviewee 2: In my view, Offering customized mentorship and consulting services to SMEs in Bangladesh could make a huge difference. Having experienced professionals help them improve their e-commerce processes and adopt new technologies could result in remarkable growth. Creating digital infrastructure and improving internet connectivity across the country would enable smoother e-commerce operations as well.</p>	<ul style="list-style-type: none"> ● Customized mentorship ● Consulting services ● Creating digital infrastructure ● Improving internet connectivity
<p>Interviewer: From your perspective, what role do government policies or initiatives play in promoting e-commerce adoption and technological advancements among SMEs in Bangladesh?</p>	
<p>Interviewee 2: I believe that government policies and initiatives play a significant role in driving e-commerce adoption and technological progress among SMEs in Bangladesh. They can provide a framework that can speed up the integration of digital innovations into the SME sector.</p>	<ul style="list-style-type: none"> ● Framework for digital innovation integration
<p>Interviewer: Can you tell us about your experience with e-commerce adoption in your SME's innovation and technological operations?</p>	
<p>Interviewee 3: Going online helped us connect with more people and try new business methods. We had to change how we worked and learn new computer skills. The good things are clear - our service got better, customers are happier, and we're growing as we want. But we're always learning and changing. Being online means worrying about privacy and safety. Each day is a new challenge, but we learn and make our business better.</p>	<ul style="list-style-type: none"> ● Connect more people ● New business method ● Learn new computer skills ● Better service ● Customer satisfaction ● Positive growth ● Continuous learning and improvement
<p>Interviewer: What were the key factors that influenced your decision to adopt e-commerce in your business?</p>	
<p>Interviewee 3: First, there was a big shift towards online shopping that we wanted to be part of. Plus, we aimed to reach more customers, even in different places, to grow our business. E-commerce also promised improved efficiency by managing products, saving money, and speeding up orders. That aligned perfectly with our goal of running things well. Valuable data was another perk – e-commerce revealed customer behaviors, guiding product improvements and smarter decisions. We also saw success stories in similar businesses, motivating us to embrace e-commerce for growth and innovation.</p>	<ul style="list-style-type: none"> ● Online shopping ● Reach more customers ● Managing products ● Saving money ● Speeding up orders ● Valuable data ● See other successful businesses
<p>Interviewer: How did you assess the potential benefits and challenges of integrating e-commerce into your SME's operations?</p>	
<p>Interviewee 3: We carefully looked at how e-commerce could benefit our small business, thinking about the benefits and the challenges. We checked how it would change how we work inside our business, reach new customers, make things smoother, use data to make choices, and keep things safe. We also looked at other businesses like ours, what's popular in the market, and what experts say. This helped us decide, and it matched our goal of being more creative and using technology better.</p>	<ul style="list-style-type: none"> ● Evaluated internal processes ● Considered customer reach ● Streamlined operations ● Data-driven choices and safety ● Observing similar business ● Market trends

Interviewer: What specific challenges did you face during the e-commerce adoption process, and how did you overcome them?	
Interviewee 3: We focused on being consistent and reliable. We worked with experts to meet our tech needs. Customer retention was important, and data security was a major concern. We made sure their information was safe online. Finding the right customers was hard, but we tried different things and it worked.	<ul style="list-style-type: none"> • Maintaining reliable operations • Customer retention • Data security • Targeting right audience
Interviewer: How has the adoption of e-commerce impacted your SME's ability to innovate and implement technological advancements?	
Interviewee 3: The impact of using e-commerce on the innovation and technological advancement of our SMEs is truly impressive. It makes us think of new and creative ideas helping us adopt new technology faster. This change has made us more competitive and helped us stay ahead in the world of new technology.	<ul style="list-style-type: none"> • Positive impact • Simulation of new and creative ideas • Enhanced competitive strength
Interviewer: In which way e-commerce integration facilitated more efficient business processes within your SME?	
Interviewee 3: E-commerce has enhanced our SME operations. We now communicate with customers faster, manage products and orders more efficiently, and use data for make decisions. Online payments are become easy, and our teams collaborate effectively, ultimately increasing our efficiency in our industry.	<ul style="list-style-type: none"> • Faster customer communication • Efficient management • Simplified online payment • Effective teams work
Interviewer: Have you noticed any changes in customer engagement or relationships since adopting e-commerce? If so, how has this affected innovation within your SME?	
Interviewee 3: E-commerce has really changed how we connect with customers. It enables quick communication and personalized experiences, making our customers happier. This has inspired us to generate new ideas and continuous innovation cycle for our business. By listening to our customers and delivering what they want, we keep improving, fostering overall growth and adaptability.	<ul style="list-style-type: none"> • Transformation in customer engagement • Simulation of new ideas • Listen and respond to customer feedback • Positive impact on company growth
Interviewer: How do you measure the success of e-commerce adoption in terms of innovation and technological efficiency?	
Interviewee 3: I gauge the success of our e-commerce adoption by looking at innovation and how well technology works. We assess website speed, visits, user-friendly search, and shopping cart. Easy engagement matters too. These factors reflect how well we use tech and attract customers. Improved speed, more traffic, efficient search, seamless purchase, and high interaction show successful e-commerce adoption for innovation and tech efficiency.	<ul style="list-style-type: none"> • Website speed • More web traffic • More user engagement • High customer interaction
Interviewer: What kind of support or resources do you think SMEs in Bangladesh need to enhance their e-commerce capabilities and technological innovation?	

<p>Interviewee 3: I believe establishing collaborative platforms where SMEs can share insights and best practices would be invaluable. This communal approach to knowledge-sharing could foster a culture of innovation and collectively elevate e-commerce capabilities.</p>	<ul style="list-style-type: none"> ● Establishing collaborative platforms
<p>Interviewer: From your perspective, what role do government policies or initiatives play in promoting e-commerce adoption and technological advancements among SMEs in Bangladesh?</p>	
<p>Interviewee 3: I believe that government rules and actions play a big role in how small businesses in Bangladesh use e-commerce and new technology. Policies like doing business in more easier way, giving more privacy can motivate people more. They decide the rules and resources that affect everything, like what we can do and how we can get what we need.</p>	<ul style="list-style-type: none"> ● Easy business policy ● More privacy
<p>Interviewer: Can you tell us about your experience with e-commerce adoption in your SME's innovation and technological operations?</p>	
<p>Interviewee 4: E-commerce transformed our small business, driving innovation and tech improvements. It was a smart choice that reshaped our work. Online, we gather our clients' insights to enhance our products and support, learning new skills and solving challenges along the way. We've become more efficient and competitive, but it's been a journey with challenges like online safety. E-commerce wasn't just a move; it was an adventure that transformed our business.</p>	<ul style="list-style-type: none"> ● Online interactions ● Clients behavior ● Learning, adapting and problem-solving ● Improved process ● Resource optimization ● Enhanced competitiveness
<p>Interviewer: What were the key factors that influenced your decision to adopt e-commerce in your business?</p>	
<p>Interviewee 4: Online shopping's popularity and the chance to expand our reach drove us. Expanding our market was also a major motivator. E-commerce also streamlined our operations, cut costs, and provided insights. Seeing other businesses succeed with e-commerce inspired our own journey towards growth and innovation.</p>	<ul style="list-style-type: none"> ● Operational streamlining ● Cost reduction ● Expanding market ● Provided insights ● Seeing other successful business
<p>Interviewer: How did you assess the potential benefits and challenges of integrating e-commerce into your SME's operations?</p>	
<p>Interviewee 4: We started by examining how we work now and finding ways to make it better with e-commerce. We thought about the good things like expanding our network of clients and using data to make choices; but also the tough parts like keeping things safe online and teaching our team. We also checked how much it might cost and what we might get back. We even looked at what other small businesses did with e-commerce.</p>	<ul style="list-style-type: none"> ● Current work evaluation and improvement ● Expand network of clients ● Cost-benefit analysis ● Learning from small business
<p>Interviewer: What specific challenges did you face during the e-commerce adoption process, and how did you overcome them?</p>	

<p>Interviewee 4: As we started using e-commerce, our team faced a challenge because we didn't know much about the technical stuff. But we fixed this by getting training and going to workshops. Align different online business in one platform was challenging. We made sure things were safe online with strong rules. And to keep up with changes online, we made our workplace more flexible and open to new ideas.</p>	<ul style="list-style-type: none"> ● Addressing technical knowledge gap ● Ensuring online security
<p>Interviewer: How has the adoption of e-commerce impacted your SME's ability to innovate and implement technological advancements?</p>	
<p>Interviewee 4: E-commerce coming in has really changed how we come up with new ideas and use cool technology in our SME. It's like a spark that made us learn, and use new tech faster. We're not afraid to use new platforms, features, resources; or strategies. This has turned our SME into a place where we're always curious, working as a team, and being creative.</p>	<ul style="list-style-type: none"> ● Learn new technology faster ● Embracing new features and strategies ● Being creative team
<p>Interviewer: In which way e-commerce integration facilitated more efficient business processes within your SME?</p>	
<p>Interviewee 4: Our clients can get their products online, making transactions quicker. It helps us manage our services better. Orders are processed automatically, which means less mistakes. We also get data on what collaborators like. Being online means we can reach a wider network of collaborators and provide more facilities. Plus, a lot of our work; like connecting right people with right business is done online, which saves us time. E-commerce has made things easier and more efficient for us.</p>	<ul style="list-style-type: none"> ● Quick transaction ● Automated order process ● Reduced mistakes ● Expand collaborators reach ● Efficient computerized process
<p>Interviewer: Have you noticed any changes in customer engagement or relationships since adopting e-commerce? If so, how has this affected innovation within your SME?</p>	
<p>Interviewee 4: Absolutely, e-commerce really changed how we interact with clients. Being online means we can connect faster; and make them happier with quick responses. This change also pushed us to come up with new ideas. We listen to what clients say, and make things better; which helps us move forward. E-commerce is driving our SME to be better and more advanced.</p>	<ul style="list-style-type: none"> ● Faster communication ● Clients satisfaction ● Simulation of new ideas ● Continuous betterment and advancement
<p>Interviewer: How do you measure the success of e-commerce adoption in terms of innovation and technological efficiency?</p>	
<p>Interviewee 4: I assess e-commerce success using measures such as website visits, how many visitors turn into clients, using new tech, and how easy checkout is. Also if clients are happy, giving personal suggestions, using data to make decisions, keeping things safe, growing without problems, being responsible and if it is worth the investment. These show how well we come up with new ideas, make customers happy, do well in selling things; and getting clients involved.</p>	<ul style="list-style-type: none"> ● Website visits and conversion rates ● Utilization of new technologies ● Client satisfaction ● Data-driven decision-making ● Ensuring online security ● Smooth growth and responsiveness

Interviewer: What kind of support or resources do you think SMEs in Bangladesh need to enhance their e-commerce capabilities and technological innovation?	
Interviewee 4: Based on what I've seen, it's really important for small businesses in Bangladesh to have tools and software for e-commerce that are easy to use and don't cost too much. If we make these resources available, it can help SMEs use technology in a good way and improve their businesses.	<ul style="list-style-type: none"> • Affordable tools and software
Interviewer: From your perspective, what role do government policies or initiatives play in promoting e-commerce adoption and technological advancements among SMEs in Bangladesh?	
Interviewee 4: I strongly believe that, government rules and actions are really important for helping small businesses in Bangladesh use e-commerce and technology better. The Bangladesh government's decision to exempt digital platforms from taxes has excited and motivated people to get more involved in digital work; reflecting a positive response to the incentives provided.	<ul style="list-style-type: none"> • Tax-free income for digital platforms
Interviewer: Can you tell us about your experience with e-commerce adoption in your SME's innovation and technological operations?	
Interviewee 5: Embracing e-commerce opened up a world of new opportunities for me. I had to learn new digital skills to stay competitive, and this journey led to positive growth in my career. Interacting with customers online became a key part of our work, which helped me understand their needs better. As we adapted to e-commerce, we also improved our processes, making them more efficient. Ensuring online security was a top priority to protect both my business and clients. The constant change in the digital landscape pushed us to keep up with technological improvements.	<ul style="list-style-type: none"> • Discover new opportunities • Learn new digital steps • Positive growth • Clients interaction • Process improvement • Ensure online security • Change and technological improvement
Interviewer: What were the key factors that influenced your decision to adopt e-commerce in your business?	
Interviewee 5: First, we noticed shifts in client's behavior, and we needed to adapt to these changes. E-commerce presented an opportunity for market expansion, which aligned perfectly with our growth objectives. It also allowed us to streamline our operations, manage inventory more efficiently, and reduce costs. The potential for data-driven insights was another compelling factor. Seeing how e-commerce had simulated innovation and growth in other businesses further motivated our decision.	<ul style="list-style-type: none"> • Changing customer behavior • Market expansion • Audience reach • Operational improvement • Efficient inventory management • Data-driven insight
Interviewer: How did you assess the potential benefits and challenges of integrating e-commerce into your SME's operations?	
Interviewee 5: I assessed e-commerce integration's potential benefits and challenges systematically. Analyzing our processes and market, we gauged how it could improve market reach and efficiency. We got advice from experts about technical stuff. Employee feedback considered carefully.	<ul style="list-style-type: none"> • Analysis processes and market • Improvement in market reach and efficiency • Employee feedback

Interviewer: What specific challenges did you face during the e-commerce adoption process, and how did you overcome them?	
Interviewee 5: We recognized the challenges of managing multiple businesses and expanding our network simultaneously. To compete effectively in the online marketplace, we needed to be technologically efficient and ensure secure data protection. To tackle these challenges we were seeking tech advice, we simplified complexities and strengthened cybersecurity.	<ul style="list-style-type: none"> • Managing multiple business and expanding network simultaneously • Seeking technical advice • Enhancing cyber security
Interviewer: How has the adoption of e-commerce impacted your SME's ability to innovate and implement technological advancements?	
Interviewee 5: It has bring up a culture of innovation, driving us to become more creative and adept at employing advanced tools. This transformation has significantly boosted our competitiveness in the market. Moreover, it has introduce in us a readiness to embrace new technologies continuously, keeping us at the forefront of innovation within our industry. In short, e-commerce has become the motivation for ongoing innovation and technological progress within our organization.	<ul style="list-style-type: none"> • More creative and use advanced tools • Enhanced competitiveness • Embrace new technology • Ongoing innovation
Interviewer: In which way e-commerce integration facilitated more efficient business processes within your SME?	
Interviewee 5: Our order fulfillment is faster; thanks to e-commerce tools. We have strengthened our collaboration with suppliers, ensuring a smooth supply chain. Customer support has become more efficient; providing quick assistance. Our online visibility has expanded, reaching a broader audience. These enhancements have significantly improved our overall business operations.	<ul style="list-style-type: none"> • Accelerated order fulfillment • Enhanced supplier collaboration • Quick customer support • Wider online visibility • Smoother business operations
Interviewer: Have you noticed any changes in customer engagement or relationships since adopting e-commerce? If so, how has this affected innovation within your SME?	
Interviewee 5: Yes, I've seen changes in how customers connect with us after using e-commerce. They seem happier, and we can make them even more delighted with special offers. Building a community where they can share thoughts has been a great addition. Personalizing their experience has brought us closer to them, impacting our innovation positively. Direct feedback from clients has led us to create better things they want, and we've generated new ideas by seeing what they like. E-commerce has improved customer relationships and boosted innovation.	<ul style="list-style-type: none"> • Increased client satisfaction • Building a community • Enhance customer relationship • Direct customer feedback • Boosted innovation
Interviewer: How do you measure the success of e-commerce adoption in terms of innovation and technological efficiency?	
Interviewee 5: I measure e-commerce success by looking at how convenient it is for our clients to shop, the choices they have, and if they can customize orders. Communication matters too. On the tech side, I check website speed, ease of use, and if it helps to serve customers better. If these improve, e-commerce is successful for innovation and technology.	<ul style="list-style-type: none"> • Communication and customer interaction • Website speed • User experience • Enhance customer service

Interviewer: What kind of support or resources do you think SMEs in Bangladesh need to enhance their e-commerce capabilities and technological innovation?	
Interviewee 5: Well; I think improving digital infrastructure; like making the internet better and having safe and improved payment options; would really help small businesses. Having a strong online setup is important for making e-commerce better and coming up with new ideas. When things online work well, it's easier for small businesses to do more and grow.	<ul style="list-style-type: none"> • Improving digital infrastructure • Better internet • Safe and improved payment option
Interviewer: From your perspective, what role do government policies or initiatives play in promoting e-commerce adoption and technological advancements among SMEs in Bangladesh?	
Interviewee 5: In my view, government actions play a big role in how e-commerce and technology grow among small businesses in Bangladesh. They shape the environment by offering incentives and rules that affect how businesses use technology and sell online. Giving tax free income to the people who work online is the one of the biggest policies of Bangladesh government.	<ul style="list-style-type: none"> • Providing incentives and setting rules • Tax free income
Interviewer: Can you tell us about your experience with e-commerce adoption in your SME's innovation and technological operations?	
Interviewee 6: We wanted to modernize our business and stay competitive in the digital world. First, we looked at how we did things and found where technology could help. We saw that e-commerce could reach more customers, make things smoother, and give us useful data. Money was a big part of our decision; so we thought about the costs; and what we could gain. We also talked to other businesses that had done e-commerce to learn from their experiences.	<ul style="list-style-type: none"> • Modernize business • Stay competitive in the digital world • Reach more customers • Improve operational efficiency • Gain data insights • Cost analysis • Learn from others business
Interviewer: What were the key factors that influenced your decision to adopt e-commerce in your business?	
Interviewee 6: Firstly, e-commerce is an opportunity to connect with clients online. Secondly, when we see if we have e-commerce platform we can able to perform our operations smoothly. From inventory management to order processing, which could ultimately lead to cost savings and improved customer experiences. Thirdly, the society is now become more online user.	<ul style="list-style-type: none"> • Create online clients • Operational efficiency • Cost savings • Enhanced customer experience • Become more online user
Interviewer: How did you assess the potential benefits and challenges of integrating e-commerce into your SME's operations?	
Interviewee 6: Market research and financial aspect was integral to our assessment. Cost-benefit analysis help us to find what is investment is necessary for technology and the potential long term gains in terms of innovation efficiency improvement.	<ul style="list-style-type: none"> • Market research • Financial aspects • Cost-benefit analysis
Interviewer: What specific challenges did you face during the e-commerce adoption process, and how did you overcome them?	

<p>Interviewee 6: Like data security and cybersecurity was main challenge. Digital marketing strategy including SEO, social media campaign and advertising was also challenging in this competitive online world. We faced these challenges and to overcome from these challenges we take advice from technical experts and create customer-centric approaches, and ongoing adaptation to industry developments.</p>	<ul style="list-style-type: none"> ● Data security ● Cybersecurity ● SEO ● Social media campaign ● Advertising ● Customer-centric approaches ● Ongoing adaptation
<p>Interviewer: How has the adoption of e-commerce impacted your SME's ability to innovate and implement technological advancements?</p>	
<p>Interviewee 6: The adoption of e-commerce has been a game-changer for our SMEs ability to innovate; and implement technological advancements. It helps us change what we do quickly and lets us see what our clients like; and what's happening in the market. We use data from e-commerce to understand our clients better as well. This helps us make things that our clients want. E-commerce has helped us use more new and smart technology to become more creative and better in the future.</p>	<ul style="list-style-type: none"> ● Rapid adaptation of business operations ● Quick response to market changes ● Utilizing client preference ● Market Trends ● Clients insights from data ● Technological advancements
<p>Interviewer: In which way e-commerce integration facilitated more efficient business processes within your SME?</p>	
<p>Interviewee 6: E-commerce integration has improved the efficiency of our business processes significantly. We help individuals who want to start their businesses, and connect them to suitable opportunities. Clients can get what they need; and start getting benefits from it. E-commerce integration made this possible. Overall; e-commerce has made our small business better, and allowed us to do more with less effort.</p>	<ul style="list-style-type: none"> ● Efficient business process ● Customer interactions ● Providing clients benefits ● Reduced manual effort
<p>Interviewer: Have you noticed any changes in customer engagement or relationships since adopting e-commerce? If so, how has this affected innovation within your SME?</p>	
<p>Interviewee 6: Sure; I have noticed that more people talk to us; and take services from us since we started being online. This helps to understand that what customer want; and how they want. So we know what type of new ideas can be helpful for our business that can increase customer interaction and personalization.</p>	<ul style="list-style-type: none"> ● Enhanced client communication ● More people engaging ● Improved customer experience ● Informing new idea generation
<p>Interviewer: How do you measure the success of e-commerce adoption in terms of innovation and technological efficiency?</p>	
<p>Interviewee 6: I think when people visits website, and return back to the site both is a positive sign to become successful e-commerce adoption. Because in terms of innovation and technological efficiency, when website traffic is good and communication is safe it can turn customer as a part of the company. It build trust and also return of investment (ROI) become positive.</p>	<ul style="list-style-type: none"> ● User engagement ● Positive ROI ● Good website traffic ● Safe communication

<p>Interviewer: What kind of support or resources do you think SMEs in Bangladesh need to enhance their e-commerce capabilities and technological innovation?</p>	
<p>Interviewee 6: Well, Bangladesh is a developing country and still there is far to go to achieve the ultimate goal. I think more effective training and education in a right manner will be helpful for developing resources to enhance e-commerce capabilities and technological innovation. Also, mentorship and networking is important to enhance e-commerce capabilities.</p>	<ul style="list-style-type: none"> ● Training and education ● Mentorship ● Networking
<p>Interviewer: From your perspective, what role do government policies or initiatives play in promoting e-commerce adoption and technological advancements among SMEs in Bangladesh?</p>	
<p>Interviewee 6: From my perspective; consumer protection and data security is important when it comes to the online business. Government can execute some special policies; that can ensure more transparency in consumer rights and data protection. Moreover, rewards for coming up with new ideas can encourage small businesses to try out; and use new technologies can make technology and e-commerce sector even better.</p>	<ul style="list-style-type: none"> ● Ensure transparency in consumer rights ● Data protection ● Rewards for new ideas
<p>Interviewer: Can you tell us about your experience with e-commerce adoption in your SME's innovation and technological operations?</p>	
<p>Interviewee 7: Going online gave us a fresh start. E-commerce was like a treasure hunt, finding smart things from talking to customers. We learned a lot – our team got better with tech, we improved how we work, and used fast info. It helped us make things faster, react to markets quicker, and connect better. But e-commerce has hard parts too; we keep data safe and watch tech changes. It's not just buying and selling; it's a thing that helps us get better with ideas and tech.</p>	<ul style="list-style-type: none"> ● A fresh start ● Gain valuable insights ● Learning improvement with technology ● Operational improvement ● Data safety ● Tech changes
<p>Interviewer: What were the key factors that influenced your decision to adopt e-commerce in your business?</p>	
<p>Interviewee 7: We chose e-commerce for a few important reasons. First, how people shopped was changing, so we needed to change too. E-commerce also let us reach new clients and grow our business. It made our work smoother, saved money, and helped us learn from customer data. Seeing other businesses do well with e-commerce inspired us to give it a try.</p>	<ul style="list-style-type: none"> ● Changing shopping trends ● Clients reach ● Business growth ● Operational improvements ● Cost savings ● Seeing other businesses
<p>Interviewer: How did you assess the potential benefits and challenges of integrating e-commerce into your SME's operations?</p>	
<p>Interviewee 7: First, we checked our operations for places to improve. We thought about good things like better engagement and data use, but also challenges like cybersecurity. Money was important too. Reports and experts helped us to learn. This helped us decide that e-commerce matched our innovation and efficiency goals.</p>	<ul style="list-style-type: none"> ● Analyzing operations for improvements ● Consideration of positive aspects and challenges ● Financial considerations ● Information gathering from reports and experts

<p>Interviewer: What specific challenges did you face during the e-commerce adoption process, and how did you overcome them?</p>	
<p>Interviewee 7: During our adoption process, we addressed competition by creating a unique value proposition. We streamlined order fulfillment processes, enhanced customer experiences with user-friendly interfaces, and focused on generating quality website traffic and visitor conversion. Improving visibility involved leveraging social media and SEO strategies. Innovation and a customer-centric approach were key to our successful transition into e-commerce.</p>	<ul style="list-style-type: none"> ● Competition and value proposition ● Order fulfillment complexities ● Enhancing clients experience ● User-friendly interfaces ● Generating website traffic ● Visitor conversion ● Visibility improvement ● Innovation and streamlined processes ● Customer-centric approach
<p>Interviewer: How has the adoption of e-commerce impacted your SME's ability to innovate and implement technological advancements?</p>	
<p>Interviewee 7: E-commerce has given us new ideas and made us use technology in better ways. We now use smart tools to make our clients happy, work more efficiently; and understand data. This has made our work smoother, improved communication with clients; and made us more focused on digital excellence. E-commerce has encouraged us to be more creative and tech-savvy; making us better every day.</p>	<ul style="list-style-type: none"> ● Burst of new ideas and innovation ● Exploration of new tools ● Enhancing customer experience ● Stimulating creative thinking and solutions ● Smoother operations ● Effective customer communication ● Focus on digital excellence ● Continuous drive for improvement
<p>Interviewer: In which way e-commerce integration facilitated more efficient business processes within your SME?</p>	
<p>Interviewee 7: Embracing e-commerce brought a wave of efficiency to our operations. E-commerce integration made a big difference in how we manage orders, cutting down on mistakes and delays. This upgrade boosted our overall efficiency; making our processes more flexible and responsive.</p>	<ul style="list-style-type: none"> ● Impact on order management ● Less mistakes and delays ● Overall boosted efficiency
<p>Interviewer: Have you noticed any changes in customer engagement or relationships since adopting e-commerce? If so, how has this affected innovation within your SME?</p>	
<p>Interviewee 7: Definitely, e-commerce transformed how we engage with customers. Quick online interactions improved connections. This change sparked innovation. Feedback from clients shaped improvements and inspired new ideas that push our SME forward.</p>	<ul style="list-style-type: none"> ● Transformation in customer engagement ● Quick online interactions ● Sparking innovation ● Clients feedback
<p>Interviewer: How do you measure the success of e-commerce adoption in terms of innovation and technological efficiency?</p>	

<p>Interviewee 7: Measuring e-commerce success in innovation and tech efficiency involves diverse markers. I analyze website traffic, user engagement, technology integration, checkout smoothness, client satisfaction, and the influence of personalized recommendations on sales. These insights guide our dynamic e-commerce approach, prioritizing innovation and client satisfaction.</p>	<ul style="list-style-type: none"> ● Website traffic ● User engagement ● Technology integration ● Checkout process ● Client Satisfaction
<p>Interviewer: What kind of support or resources do you think SMEs in Bangladesh need to enhance their e-commerce capabilities and technological innovation?</p>	
<p>Interviewee 7: SMEs in Bangladesh need better digital tools, user-friendly e-commerce platforms, training, and support. Reliable internet and easy and secure payment systems are essential. Financial help and partnerships with the government would be beneficial. Workshops and guidance can aid SMEs in adapting to the digital world.</p>	<ul style="list-style-type: none"> ● Training and support ● Reliable internet ● Easy and secure payment systems ● Financial assistance ● Workshops and guidance
<p>Interviewer: From your perspective, what role do government policies or initiatives play in promoting e-commerce adoption and technological advancements among SMEs in Bangladesh?</p>	
<p>Interviewee 7: Bangladesh government is actively promoting, and supporting online, and digital work. People are now getting the benefit of different government policies like tax free income from online work. They are trying to establish an environment for fair competition. Which provides incentives; and resources to encourage innovation.</p>	<ul style="list-style-type: none"> ● Tax free online income ● Fostering an environment for fair competition
<p>Interviewer: Can you tell us about your experience with e-commerce adoption in your SME's innovation and technological operations?</p>	
<p>Interviewee 8: E-commerce brought creativity, inspiring inventive solutions and tech integration. Our operations streamlined, saving time and effort. Now, we understand what clients like from data, making our products and services better. We personalize experiences, making clients happier. We adapt faster; market insights boosted adaptability. Challenges, like staying safe and adapting, made us even more innovative.</p>	<ul style="list-style-type: none"> ● Creativity and tech integration ● Streamlined operations and efficiency ● Data-driven insights ● Enhancing products and services ● Boosted market insight
<p>Interviewer: What were the key factors that influenced your decision to adopt e-commerce in your business?</p>	
<p>Interviewee 8: Our decision to adopt e-commerce was driven by a mix of strategic factors. The changing preferences of clients highlighted the need for digital engagement. The rise of online shopping pushed us to adapt and connect better with our audience. The chance to gather insights from clients' data was too good to pass up. E-commerce gave us the tools to understand customer behavior and adjust our strategies accordingly. Seeing other businesses succeed through e-commerce inspired us too.</p>	<ul style="list-style-type: none"> ● Better clients engagement ● Customer data for insights ● Enhancing understanding of customer behavior ● Inspiration from other successful business ● Seeing other businesses
<p>Interviewer: How did you assess the potential benefits and challenges of integrating e-commerce into your SME's operations?</p>	

<p>Interviewee 8: Assessing e-commerce for our SME was systematic. We saw its potential to expand reach and revenue through a wider audience and online credibility. However, we acknowledged challenges like initial setup costs and data security. Improved client communication was noted, yet swift response management was essential.</p>	<ul style="list-style-type: none"> ● Expand reach and revenue ● Initial setup cost ● Data security ● Improved client communication ● Swift response management
<p>Interviewer: What specific challenges did you face during the e-commerce adoption process, and how did you overcome them?</p>	
<p>Interviewee 8: As our e-commerce site grew, we faced a few challenges. We worried about keeping payments safe when we added new ways to pay. We worked with trusted partners and used strong safety methods. Also; making sure our site looked good on all devices (phones, computers) was hard. We used special designs and checked how things worked everywhere.</p>	<ul style="list-style-type: none"> ● Payment security ● Responsive design across devices ● Special design and testing
<p>Interviewer: How has the adoption of e-commerce impacted your SME's ability to innovate and implement technological advancements?</p>	
<p>Interviewee 8: Bringing e-commerce into our small business has caused a big change; in how we come up with new ideas and use technology. Now, we are always thinking of new ways to do things and quickly adopting the latest technology. This has made us better at competing with others; and using the newest tech trends to be creative. Our business has transformed because of e-commerce and now we're all about using the latest tools and being innovative.</p>	<ul style="list-style-type: none"> ● Continuous innovation and tech adoption ● Enhanced competitive edge ● Business transformation
<p>Interviewer: In which way e-commerce integration facilitated more efficient business processes within your SME?</p>	
<p>Interviewee 8: E-commerce integration made our small business work better. It helped us do things more quickly and smoothly. For example, taking orders and processing payments became faster and easier online. We also could keep track of inventory in real-time, so we know what's available all the time. This helped us serve clients better and avoid running out of products. Communication improved too; we could talk with clients online and answer their questions faster. Overall, e-commerce made our business run smoother and made us better at serving our clients.</p>	<ul style="list-style-type: none"> ● Improved business operations ● Faster order processing and payment ● Enhanced client service ● Overall smoother operations
<p>Interviewer: Have you noticed any changes in customer engagement or relationships since adopting e-commerce? If so, how has this affected innovation within your SME?</p>	
<p>Interviewee 8: Absolutely, embracing e-commerce transformed how we connect with clients. Quick online interactions strengthened our bonds with them. This change sparked our innovative drive. By listening to customer feedback, we customized our products and services, fostering innovation that powers our SME's growth.</p>	<ul style="list-style-type: none"> ● Improved customer engagement ● Foster growth
<p>Interviewer: How do you measure the success of e-commerce adoption in terms of innovation and technological efficiency?</p>	

<p>Interviewee 8: To figure out how well e-commerce is doing; especially when it comes to new ideas and using technology smartly, I look at different numbers. I check how many people are visiting our website; how much they are getting involved and whether we're using cool new technologies. I also see how easy it is for people to buy things from us online; and what our clients are saying. It is important to see if the suggestions we give to clients make them want to buy more.</p>	<ul style="list-style-type: none"> ● Website performance metrics evaluation ● Website interaction and engagement ● Client experience and feedback ● Client satisfaction
<p>Interviewer: What kind of support or resources do you think SMEs in Bangladesh need to enhance their e-commerce capabilities and technological innovation?</p>	
<p>Interviewee 8: Getting small businesses (SMEs) to work together with big e-commerce companies could be really helpful. They can share what they know; and learn from each other about using new technology. Both sides can benefit; and this teamwork can help small businesses grow and come up with new ideas.</p>	<ul style="list-style-type: none"> ● Collaboration between SMEs ● Knowledge exchange and learning
<p>Interviewer: From your perspective, what role do government policies or initiatives play in promoting e-commerce adoption and technological advancements among SMEs in Bangladesh?</p>	
<p>Interviewee 8: For instance, Bangladesh government have policies that simplify online business registration, no taxes on online work, and providing incentives for technology adoption which is motivating SMEs to venture into e-commerce. Moreover; offering financial assistance for technology adoption, and creating digital infrastructure can empower SMEs to embrace e-commerce and technological advancements.</p>	<ul style="list-style-type: none"> ● Simplify online business registration ● Providing tax incentives for online work ● Incentives for technology adoption ● Financial assistance ● Creating digital infrastructure
<p>Interviewer: Can you tell us about your experience with e-commerce adoption in your SME's innovation and technological operations?</p>	
<p>Interviewee 9: My journey with e-commerce has taught me a few important things. First, having a fast; and smooth website is crucial for getting more people to buy from us. Second, talking directly to the clients; and giving them what they want is really important for building good relationships. Third, using technology well helps to work better and save time. So, we keep learning and using these ideas to do better in e-commerce.</p>	<ul style="list-style-type: none"> ● Website performance ● Customer-centric approach ● Technology utilization ● Continuous learning and improvement
<p>Interviewer: What were the key factors that influenced your decision to adopt e-commerce in your business?</p>	
<p>Interviewee 9: Our choice to use e-commerce was influenced by considering our products, clients and how our business works. E-commerce allowed us to offer more things; and understand what clients like. It also made our work easier and saved us time and money. So; using e-commerce was a smart decision for our business and it made us better at what we do.</p>	<ul style="list-style-type: none"> ● Product strategy ● Customer-centric approach ● Operational efficiency ● Business improvement
<p>Interviewer: How did you assess the potential benefits and challenges of integrating e-commerce into your SME's operations?</p>	

<p>Interviewee 9: We saw that clients expect a lot online; so we wanted to make sure our website was easy to use. We wanted to keep our brand the same online, so people know it's us. We knew we had to keep clients' information safe when they buy online. We made sure the online store we used was secure. We thought about how to protect our business from online threats like hacking. We wanted to make sure our online business was safe for us and our clients.</p>	<ul style="list-style-type: none"> ● Clients expectations ● Brand consistency ● Data security ● Business protection
<p>Interviewer: What specific challenges did you face during the e-commerce adoption process, and how did you overcome them?</p>	
<p>Interviewee 9: During adoption process, we faced some specific challenges like cyber-security threats and attract right client to our products. We had to make sure that our clients' information and our business data were safe from cyber threats, so we used regular security checks and to attract clients' social media marketing and ads helps us to overcome them.</p>	<ul style="list-style-type: none"> ● Cybersecurity challenges ● Attracting the right client ● Data safety
<p>Interviewer: How has the adoption of e-commerce impacted your SME's ability to innovate and implement technological advancements?</p>	
<p>Interviewee 9: E-commerce made us faster and more flexible to meet clients' demands. We also became more efficient in managing our operations; allowing us to allocate resources for innovation. Furthermore, the data we gathered from e-commerce helped us understand our clients' better and create products they like. In short, e-commerce has brought speed, efficiency, and customer insights to our SME, driving innovation and enhancing our customer focus.</p>	<ul style="list-style-type: none"> ● Faster and more flexible ● Operational efficiency ● Customer insights ● E-commerce-driven innovation
<p>Interviewer: In which way e-commerce integration facilitated more efficient business processes within your SME?</p>	
<p>Interviewee 9: E-commerce integration has sped up the buying process for clients and reduced costs. Additionally, it provided flexibility for clients to shop at their convenience and allowed us to respond rapidly to market demands. So overall it has expedited the buying process, reduced costs, provided flexibility to clients, and enabled fast responses to market dynamics; all contributing to our enhanced business performance.</p>	<ul style="list-style-type: none"> ● Accelerated buying process ● Cost reduction ● Clients flexibility ● Rapid response to market ● Overall business enhancement
<p>Interviewer: Have you noticed any changes in customer engagement or relationships since adopting e-commerce? If so, how has this affected innovation within your SME?</p>	
<p>Interviewee 9: We connect through our website, email, and social media, enhancing understanding and quicker responses. This improved customer relationship fuels innovation by gathering feedback and observing shopping habits for new product ideas. E-commerce's real-time adaptability enables quick responses to market changes and customer preferences, strengthening our bond with customers and fostering innovation to meet their needs.</p>	<ul style="list-style-type: none"> ● Improved interaction ● Quicker responses ● Stronger customer relationships ● Fostering innovation
<p>Interviewer: How do you measure the success of e-commerce adoption in terms of innovation and technological efficiency?</p>	

<p>Interviewee 9: I measure how well e-commerce is helping us come up with new ideas; and use technology better in some simple ways. We look at things like how many new products we have introduced since using e-commerce; and how fast clients start using them. I also see how quickly we can bring new ideas to the market; and what our clients say about them. I also keep an eye on revenue growth; client conversion rates and return visits to evaluate the impact of e-commerce on our business.</p>	<ul style="list-style-type: none"> ● Product innovation ● Quickly bring new ideas to the market ● Measuring customer adoption ● Revenue growth ● Client conversion rates
<p>Interviewer: What kind of support or resources do you think SMEs in Bangladesh need to enhance their e-commerce capabilities and technological innovation?</p>	
<p>Interviewee 9: SMEs in Bangladesh need help with training, affordable tech; and money to do better with e-commerce and tech innovation. It also need guidance, and better internet. Moreover; they should learn more how to protect data. These things will help SMEs in Bangladesh to grow online.</p>	<ul style="list-style-type: none"> ● Training and skill development ● Access to affordable technology ● Financial support ● Guidance and mentorship ● Better internet ● Data protection
<p>Interviewer: From your perspective, what role do government policies or initiatives play in promoting e-commerce adoption and technological advancements among SMEs in Bangladesh?</p>	
<p>Interviewee 9: Good policies make it easier for businesses to operate online by setting clear rules; and providing financial help. Government can also invest in things like internet and training. Plus, they can protect businesses, and customers by making sure data is safe, and transactions are fair.</p>	<ul style="list-style-type: none"> ● Setting clear rules ● Financial support ● Internet and training ● Data safety ● Fair transactions