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Editorial Note

Welcome to the first edition of the DCCI Journal of Business and Economic Policy (DJBEP), a publication dedicated to advancing research, analysis, and discourse on critical issues shaping business and economic policy, with particular focus on the Bangladesh economy. Since the rapidly changing global economy impacts both private and public sectors, evidence-based research and technical innovation has become essential for navigating the evolving business landscape.

Policy formulation and economic reform demand research-backed insights and new knowledge. Keeping this in purview, Dhaka Chamber of Commerce & Industry (DCCI) is proud to present this journal as a platform to foster impactful research and promote knowledge that addresses the challenges and opportunities within Bangladesh's contemporary economy and the global marketplace. With a legacy spanning over four decades, DCCI's Research & Development (R&D) and Policy Advocacy Department has consistently delivered fact-based insights, driving innovation, influencing policy, and providing strategic guidance for the business community. This commitment aligns with DCCI's mission to support consistent economic growth and business competitiveness.

In an era marked by complex and rapidly evolving economic challenges, there has never been a greater need for informed policy decisions rooted in rigorous research and analysis. DJBEP aspires to serve as an essential resource for policymakers, business leaders, researchers, and academics seeking to understand the forces shaping the economic landscape and contribute to meaningful, evidence-based policy interventions through cutting-edge analyses and insights. The DJBEP offers a vital avenue for disseminating actionable ideas, insights, and solutions applicable to emerging and contemporary issues in both private and public sectors, with a focus on invigorating growth and resilience in Bangladesh's economy.

Through this journal, we aim to bridge the gap between academic research and real-world application. The articles and studies featured in the DJBEP emphasize the importance of data driven decision-making, showcasing best practices, and sheding light on emerging trends and challenges. The featured articles cover vital national issues, such as sustainable development, trade policy, economic impact upon LDC graduation, financial inclusion, and the dynamics of local and global markets. By addressing these issues, DJBEP reinforces DCCI's mission to stimulate economic progress and empower businesses to succeed.

This inaugural issue of the journal is a collaborative effort, bringing together the expertise and perspectives of distinguished contributors who share a commitment to advancing economic thought and informing policy. By acting as a catalyst for change, the journal promotes initiatives that enhance competitiveness, economic resilience, and sustainable development in Bangladesh and beyond.

As we embark on this journey, DJBEP is poised to continue its transformative role in shaping the future of Bangladesh's business and economic policy. We invite our valued readers to engage with its content, challenge its ideas, and contribute to its mission. Together, we can build a resilient and thriving economy for all.

Zaidi Sattar

Dr. Zaidi Sattar
Chief Editor

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ORIGINAL RESEARCH ARTICLE

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The Governance and Management of Trade Policy in Bangladesh

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Abstract

Trade policy has been a cornerstone of Bangladesh's development journey. The critical importance of trade policy has become even more pronounced recently, as Bangladesh faced external pressures on foreign exchange reserves and balance of payments. Traditionally, discussions around economic policy in Bangladesh have focused on fiscal and monetary measures, but the current climate reveals trade policy's central role in ensuring macroeconomic stability. The governance of trade policy defines the broad direction of policy -- open or restrictive trade – while management refers to the effective coordination of multiple agencies in implementing trade policy. Currently, Bangladesh's trade approach reflects an awkward mix of outward-oriented and inward-looking strategies, resulting in significant progress in RMG export but little diversification into other sectors. This lack of alignment calls for a renewed round of trade policy reforms to create a more industrialized, employment-driven economy based on strong export performance. Embracing these changes can propel sustainable development, while missing this opportunity risks stalling progress at a crucial moment for transformation.

Keywords: Trade policy governance, Macroeconomic stability, Export diversification.

1. Introduction

For several decades international trade has been the handmaiden of Bangladesh development. This outcome is intricately related to the conduct as well as direction of trade policy, which is a combination of trade taxes, import-export promotional measures or restrictive regulations, with wider implications for macroeconomic stability and growth. Anne Krueger, a leading trade economist, highlighted the criticality of using trade policy as an important input to development. Bangladesh has followed this advice, though not in all its forms and manifestations (Krueger, 1980).

Most discussions of macroeconomic policies in Bangladesh tend to focus on monetary and fiscal policies. Lately, however, management of foreign exchange reserves and exchange rate – core components of trade policy -- have assumed heightened importance on account of external pressures and adverse balance of payments developments. These developments prove that ignoring trade policy as a critical component of overall macroeconomic management would be a mistake. That is why I believe it is important to understand how trade policy in Bangladesh is formulated and conducted. The question that needs to be answered is whether the current arrangement works efficiently, without inherent conflicts, in terms of aligning trade policy with the strategic developmental goals of the economy.

To begin with, one conceptual issue needs to be clarified. Governance, which is the more strategic part of policymaking, sets the direction of trade policy. In the Bangladesh context, governance of trade policy would involve commitment at the national level of what kind of trade policy to pursue – restrictive, protectionist, or open trade; outward-oriented, or inward-looking. The management of trade policy then involves the implementation of the guidelines set out under the governance framework by the responsible agencies of government which could, in the Bangladesh context, involve an interplay of several ministries and agencies working with each other. Here, the critical question that arises is whether the coordination is consistent and effective to yield the outcome of a pro-industrialization, pro-growth, and pro-employment developing economy.

2. Governance of Trade Policy

Formulating and guiding strategic directions of policy is the sine qua non of governance. In the early 1990s, by launching the deepest trade and import liberalizing measures, Bangladesh made the radical switch from a largely trade-restrictive inward-looking overwhelmingly import-substituting economy, with fixed and over-valued exchange rate, to an outward-looking export-oriented economy, with flexible exchange rate. Thus, Bangladesh joined the group of economies that earned the moniker of "globalizers" by the World Bank – i.e. developing countries that unleashed their potential and started to grow faster than those that did not globalize (i.e. liberalize). From then on "export-led growth" became the cornerstone of Bangladesh's development policy and that alignment, in principle, would have persisted to this day. Regrettably, this strategic alignment of trade policy of the 1990s petered out over the next two decades into what appears to be a radar less orientation of international trade with mixed pursuit of trade restrictiveness and trade openness without any clear signal of trade policy direction.

Trade policy can be open, restrictive or somewhere in between. Deep trade liberalization measures launched in the first part of the 1990s decade soon gave way to creeping protectionism through the emergence of para-tariffs, such that by the second decade of the 21st century, para-tariffs (regarded as Other Duties and Charges (ODCs) by WTO) had assumed as much of the protective effect as WTO-compliant custom duties. As a consequence, Bangladesh's trade policy appears to have lost a sense of direction. Today, in an age of cutthroat global competition Bangladesh's economy lacks any strategic direction of trade policy, which in effect implies an absence of trade policy governance – a pivotal flaw in the overall management of macroeconomic stability and growth dynamism. Trade policy governance is crying for reforms to infuse a sense of direction compatible with the evolving trade landscape of the future.

3. Management of Trade Policy

External sector developments as well as internal macroeconomic stability have much to do with the handling of trade policy. Activities that constitute the whole package of trade policies may be divided into domestic and external components (Table 1).

Table 1. Trade policy bifurcation

Domestic	External
Trade policy (tariffs, subsidies, protection, exchange rate)	Market access WTO, FTA/RTA/PTA, GVC, FDI
Trade facilitation (via logistics, trade infrastructure)	
Institutions of trade policy management	

Trade policy instruments that have to be domestically formulated and implemented include tariffs, subsidies, protection, and exchange rates. Logistics and trade infrastructure have to be geared towards trade expansion and removal of any barriers to international transactions; all relevant institutions in the public and private sectors have to be activated to foster trade smoothly. On the external side, ministries, public and private institutions need to be engaged in creating market access for our exports which in turn would require membership in multilateral and regional institutions such as the WTO, SAFTA, BIMSTEC, APTA, in addition to pursuing Preferential or Free Trade Agreements (PTAs/FTAs), seeking global value chain (GVC) integration and courting FDI. That brings to the fore the question of management of trade policy by the ministries and agencies of government and the private sector, and a focus on the efficacy of coordination among the critical institutions. BOX 1 highlights the role of the ministries and agencies involved in the management and implementation of trade policy, domestic and external.

BOX 1

Key Components of trade policy, its formulation and implementation agencies

1. **Tariff Policy** – formulation and implementation by NBR; recommendations from BTTC
   -- NBR to impose tariffs for revenue; BTTC to recommend protective tariff
2. **Export Policy** – formulation and monitoring by the Ministry of Commerce
   -- MOC to recommend export subsidies; MOF to provide allocation
3. **Import Policy Order** – WTO-compliant binding Regulations; MOC formulates, Customs/NBR implements
4. **Exchange rate policy** – exclusively Bangladesh Bank; no consultations with MOC
5. **Market access and trade agreements –** MOC; MOF/ERD; MOFA; BIDA; consultations with the private sector (business chambers)

MOC: Ministry of Commerce; MOF: Ministry of Finance; NBR: National Board of Revenue; BTTC: Bangladesh Trade and Tariff Commission; BIDA: Bangladesh Investment Development Authority.

What immediately becomes clear is the crucial importance of inter-ministerial and inter-agency coordination for effective implementation of trade policy. Also, what transpires is the possibility of potential conflict between agencies that could undermine the effective implementation of trade policy or lead to outcomes that are contrary to the ultimate goals intended by policymakers.

Here is a strategic question that policymakers have failed to grapple with: is Bangladesh trade policy dynamic and futuristic enough to seize global opportunities in the 21st century? As noted earlier in elucidating trade policy governance, we see a lack of clear direction of trade policy, in the absence of which Bangladesh's trade policy has become radar less, *ad hoc,* and mostly reactive to emerging short-term challenges. That calls for an assessment of the current state of trade policy. First, it makes sense to review the framework of trade policymaking. Though the Ministry of Commerce is expected to be the ultimate arbiter of what constitutes trade policy there are other ministries and institutions that also have a significant role in formulating and managing trade policy. Critical among them are the National Board of Revenue (NBR) and Bangladesh Bank. The five major components of trade policy, viz. tariff policy, export policy, import policy order, exchange rate policy, and market access and trade agreements, are listed in BOX 1, with the relevant agencies stated alongside. Furthermore, the fastest growing segment of internation trade in the past 25 years is trade in intermediate goods or trade in value added (prompted by cross-border value chain integration via trade). Futuristic trade policy must take this rising phenomenon in its purview.

What becomes clear is the absolute necessity of close coordination among the agencies in the conceptualization, monitoring and implementation of all the components of trade policy. What becomes also clear is the possibility of tensions and conflicts between the agencies involved. It is important therefore to identify the ultimate goal of trade policy so that all participants work towards that goal in harmony with each other.

I will now identify two instances of serious conflict in the formulation and implementation of trade policy as is practiced currently. These are also areas in which reforms are absolutely essential.

(a) Tariff Policy determination. Import tariffs are lethal instruments of trade restrictions. Around the world, tariffs are being used as the pivotal armor for ensuring the efficacy of the "new industrial policy". Tariffs are now the key instruments that restrict or open trade flows in Bangladesh, as confirmed by WTO in its 2019 Review of Bangladesh Trade Policy. Though MOC articulates the direction of trade policy, it is NBR that is *ipso facto* responsible for formulating and implementing tariff policy as a result of which tensions and conflicts emerge when it comes to the issue of liberalizing imports or promoting exports through low tariffs, which often conflicts with NBR's objectives of mobilizing revenue. Though Bangladesh Trade and Tariff Commission (BTTC) is a statutory body under MOC entrusted with the task of reviewing and assessing the need for tariff protection to selected industries/sectors, the role of BTTC has been relegated to barely a recommending authority without much clout. The two objectives of tariffs – revenue and protection – are inherently conflicting. Higher tariffs accord higher protection but up to a point, beyond which revenue declines but protection increases. Both protection and revenue objectives are now handled in an ad hoc manner. Even when MOC is inclined to support rationalization of tariffs to promote business, industry and export diversification, NBR seems unwilling to acquiesce. It appears that NBR and BTTC/MOC are not on the same page regarding the revenue-protection objective of tariffs. This is all to the detriment of a business and investment-friendly trade policy. This is where reform is essential.

(b) Exchange rate policy. Export policy, formulated and monitored by the MOC is a non-binding set of policies meant to promote exports through various support measures like direct or indirect subsidies. Yet, exchange rate policy, a critical instrument of export competitiveness, and conducted by the Bangladesh Bank without much consultation with the MOC, is completely absent from the configuration of export policy. In consequence, the exchange rate often becomes misaligned with the objective of export promotion, as was observed during FY2011-2022. By various estimates, the Real Effective Exchange Rate (REER), a key indicator of export competitiveness, appreciated by some 40% by the close of FY2022. When the BOP crisis occurred following the Russo-Ukraine war, Bangladesh Bank had to summarily make a steep depreciation of the exchange rate by nearly 30% during FY2023-2024 causing a major disruption to macroeconomic stability. This situation – exclusion of exchange rate management from export policy – is untenable and warrants recalibration and reforms.

A few other trade policy or regulatory components that raise issues of proper management are discussed below.

Import Policy Order. The triennially formulated Import Policy Order by the MOC is a binding WTO-compliant regulatory scheme governing import flows. IPO is an essential prerequisite for ensuring standards of human and animal health, and other requirements within the rules-based international trade order. Having done away with import bans or restrictions for trade reasons, the IPO can only marginally be considered a major component of trade policy, unless some of the regulations/restrictions are disingenuously maneuvered to have protective effect. The formulation of IPO is the responsibility of MOC, though it involves cooperation and inputs from key ministries such as that of agriculture, livestock and fisheries, industries, textiles, foreign affairs and many others, including representatives of business chambers. Thus, the IPO essentially is a regulatory mechanism, not a trade policy instrument anymore, primarily to ensure that imports are subject to

WTO-compliant rules. Managing the smooth implementation of IPO, i.e. ensuring IPO is trade facilitating rather than trade impeding, is the responsibility of Customs administration, a wing of the NBR. This is where the need for a modern digitalized Customs administration that is geared towards trade facilitation rather than revenue collection becomes even more critical.

Market access. Finally, MOC has the primary responsibility to campaign for improved and wider market access for Bangladesh exports through trading arrangements, reciprocal (PTA/FTA) or non-reciprocal. In addition, in coordination with BIDA and MOFA, it is imperative that Bangladesh become a significant recipient of FDI in the South Asia region and that is only possible with a more open trade regime. The current dualistic trade regime that accords free trade channel to RMG but creates a highly restrictive and protective regime for non-RMG exports is not at all conducive to attracting FDI. The latter is also a key driver of GVCs at a regional or inter-regional (e.g. BIMSTEC-ASEAN) level. But all of these trade mechanisms can produce results only under an open trade regime, not the kind of restrictive regime that Bangladesh's economy is encumbered with.

4. Conclusion

For an economy on the path to development, there are two broad trade policy configurations to consider. The first, a trade openness strategy, is outward-looking and export-oriented, with growth driven by integration into the world market. The second, a more restrictive approach, is inward-looking and focuses on import-substituting industrialization, relying on the domestic market for growth. Historical evidence and research indicate that the first option, centered on trade openness, has consistently yielded the best outcomes for developing countries in terms of growth, employment, and poverty reduction. Bangladesh took steps in the early 1990s to adopt this outward-looking approach; however, over the following decades, the country seems to have diverged from this path. Today, the trade policy mix in Bangladesh appears to be an inconsistent combination of both configurations, lacking a cohesive direction. This has led to notable export success in one sector-ready-made garments (RMG), while non-RMG exports have made limited progress, reflecting a tendency towards the inward-looking configuration.

The governance of trade policy should give clear guidance and direction as to which of the two trade policy configurations the country adapts on its development pathway. Accordingly, the management or implementation of trade policy orientation can then be entrusted to the ministries concerned with an effective mechanism for inter-ministerial or inter-agency coordination to attain the nation's development goals. Conflicts will arise but again there must be mechanisms to resolve them and produce the desired outcomes in terms of exports and growth performance, which are the quintessential pursuit of trade policy.

The economy has been crying for deep-rooted reforms in several areas, beyond the colossal malaise in the banking sector. Trade policy is one area that has been gripped with stasis for over two decades. A second round of trade policy reforms has become a national imperative. The Monsoon Revolution has opened the door for transformative changes in the way we manage our polity and economy. Trade policy arena is one such area. To miss such an opportunity for change could be too costly for the nation.

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ORIGINAL RESEARCH ARTICLE

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Winning Back Customers: AI-Powered Retention Strategies for E-Commerce

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Keywords: E-commerce, Customer Retention, AI, Churn Prediction.

Abstract

strategy for sustainable growth and profitability. While attracting new customers remains essential, retaining existing ones is often more cost-effective and can drive significant long-term value. This article examines how artificial intelligence (AI) is transforming customer retention through three primary mechanisms: churn prediction, customer segmentation, and personalized recommendation. By leveraging AI-driven insights and predictive analytics, e-commerce companies can anticipate customer behavior, segment their audience more precisely, and create personalized experiences that boost loyalty. This comprehensive review explores key AI methodologies and frameworks, evaluates current challenges, and discusses future opportunities for AI to reshape customer retention strategies in e-commerce.

1. Introduction

E-commerce has rapidly transformed global commerce, offering businesses a vast, virtual marketplace to engage consumers. With customer acquisition costs soaring, retaining existing customers is crucial, particularly as studies indicate that acquiring a new customer can be up to five times more expensive than retaining an existing one. AI provides e-commerce businesses with sophisticated tools to predict, analyze, and engage customers by transforming traditional methods of customer retention into an adaptive, predictive, and personalized process. In e-commerce, retaining customers is critical as it's generally more cost-effective than attracting new ones. Studies show that existing customers are likely to spend more and buy more frequently. However, with countless online shopping options, customers can quickly switch to competitors if they feel undervalued. AI addresses this by enhancing how businesses connect with their customers through advanced analytics, improving engagement, and reducing the chance of customer loss or "churn." This article explores the transformative potential of AI in customer retention, focusing on churn prediction, customer segmentation, and recommendation systems.

2. Role of AI in E-commerce Customer Retention

AI empowers e-commerce businesses to transform their approach to customer retention by enhancing their understanding of customer behavior, predicting churn risks, and creating personalized retention strategies. Key AI-driven technologies, including machine learning, natural language processing (NLP), and predictive analytics, allow companies to make data-informed decisions that enhance engagement, boost retention rates, and reduce customer attrition. This transformation is driven by three critical AI applications: churn prediction, customer segmentation, and recommendation systems.

3. AI-Driven Churn Prediction

3.1 Churn Prediction: Preventing Customer Loss Before It Happens

Customer churn prediction is essential for identifying at-risk customers before they disengage entirely. Predictive models help e-commerce platforms determine patterns and triggers associated with customer attrition, allowing for timely intervention through retention strategies.

3.2 Machine Learning Models for Churn Prediction

AI techniques, particularly machine learning, enable more accurate and dynamic churn prediction:

- **Supervised Learning Algorithms:** Algorithms such as Logistic Regression, Random Forest, and Gradient Boosting Machines (GBM) are commonly used for churn prediction. Each algorithm analyzes historical data, detecting patterns that indicate potential churners. For instance, Random Forest models excel in analyzing high-dimensional datasets, while GBMs provide nuanced insights into variable importance.

- **Deep Learning Approaches:** Convolutional Neural Networks (CNNs) and Recurrent Neural Networks (RNNs) offer advanced predictive capabilities, particularly in processing sequential data like user browsing and purchase history. Long Short-Term Memory

(LSTM) models within RNNs can track time-based patterns, enabling models to capture recurring behavioral signals that may indicate an increased churn likelihood.

3.3 Practical Applications

Churn prediction models allow businesses to create tailored retention strategies, such as personalized offers or re-engagement campaigns. Companies can proactively offer discounts, loyalty rewards, or other incentives to retain at-risk customers identified by AI.

4. AI in Customer Segmentation

4.1 Customer Segmentation: Targeted Marketing and Engagement

Customer segmentation is crucial for understanding diverse customer needs and tailoring marketing strategies. Effective segmentation enables companies to group customers based on demographics, purchase behavior, and engagement patterns, allowing more targeted engagement.

4.2 AI Techniques for Customer Segmentation

AI-powered segmentation utilizes machine learning and clustering algorithms to define customer segments with precision:

- **Clustering Algorithms:** K-Means, Hierarchical Clustering, and Density-Based Spatial Clustering of Applications with Noise (DBSCAN) are popular methods for creating customer clusters. K-Means is particularly effective in finding homogenous segments based on shared characteristics, while DBSCAN identifies clusters in datasets with varying density.

- **Behavioural Segmentation Models:** AI models using purchase history, engagement level, and website navigation patterns create segments based on customer behaviour, allowing companies to target specific groups more effectively. For instance, customers frequently engaging with product pages may receive targeted promotions.

- **RFM (Recency, Frequency, Monetary) Segmentation:** This method segments customers based on recent purchases, purchase frequency, and average spending, allowing companies to prioritize high-value customers or those at risk of churn. Advanced AI methods enhance traditional RFM by incorporating additional attributes for more nuanced segmentation.

4.3 Application of AI in Segmentation-Based Strategies

AI-powered segmentation enables businesses to develop personalized marketing campaigns, such as exclusive offers for high-spending customers or re-engagement emails for low-engagement customers. It also helps companies allocate resources to the most profitable segments and design loyalty programs tailored to different customer groups.

5. AI in Recommendation Systems

5.1 Personalized Recommendation Systems: Enhancing Customer Experience

Recommendation systems are foundational to customer engagement and retention, as they drive product discovery and encourage repeat purchases. Personalized recommendations increase customer satisfaction and loyalty by presenting customers with relevant products based on their behavior and preferences.

5.2 AI Techniques for Recommendation Systems

AI-driven recommendation systems leverage collaborative filtering, content-based filtering, and hybrid models:

- **Collaborative Filtering:** Collaborative filtering techniques, such as matrix factorization and neural collaborative filtering, recommend products by identifying similarities in user behavior and preferences. These methods predict items based on user similarity matrices, enhancing personalization.

- **Content-Based Filtering:** This approach recommends products based on item features and customer profiles. For example, if a user frequently purchases sports equipment, the model can recommend similar items in the sports category.

- **Hybrid Models:** Hybrid models combine collaborative and content-based filtering, optimizing recommendation accuracy. Netflix and Amazon often use hybrid models to provide a seamless and engaging user experience by merging user preferences with product attributes.

5.3 How AI-Driven Retention Strategies Benefit E-commerce Businesses

E-commerce giants such as Amazon, Alibaba, and Netflix have successfully deployed AI-driven recommendation systems to increase user retention. By analyzing past purchase history, browsing behavior, and product interactions, these companies generate recommendations that enhance customer experience and promote additional purchases.

5.3.1 Improved Customer Engagement

AI helps businesses communicate with customers in ways that feel more personalized and relevant. For instance, AI-driven messaging can send tailored reminders to customers who left items in their cart or suggest products related to recent purchases, encouraging them to return to the site.

5.3.2 Increased Sales and Customer Loyalty

AI-powered churn prediction and segmentation provide insights into what drives customer loyalty. By focusing on these factors, businesses can create loyalty programs, rewards, or targeted discounts that encourage repeat purchases. Engaged customers often become loyal brand advocates, further boosting the company's reputation.

5.3.3 Cost-Effective Marketing

AI allows businesses to direct marketing efforts more effectively by identifying high-value customer segments. Instead of sending blanket promotions, companies can focus their resources on specific groups, making marketing campaigns more cost-efficient and impactful.

6. Challenges and Future Directions in AI for Customer Retention

6.1 Data Privacy and Ethical Concerns

As AI-powered systems rely heavily on data, customer privacy is paramount. Transparency in data use and adherence to privacy regulations like GDPR are essential. Companies must ensure that customer data is collected ethically and with user consent.

6.2 Model Interpretability

While AI models like deep learning offer high accuracy, they often lack interpretability, making it challenging to understand decision-making processes. Future AI research should focus on developing explainable models that help businesses understand AI recommendations and gain customer trust.

6.3 Scalability and Integration

Implementing scalable AI solutions across different e-commerce platforms can be complex. Ensuring compatibility with existing systems and real-time processing capabilities will be essential for the widespread adoption of AI-driven customer retention strategies.

6.4 Future Directions

Future developments in AI-driven retention may include real-time churn prediction, adaptive segmentation models that evolve with customer behavior, and multi-channel recommendation engines. Integrating reinforcement learning could allow models to optimize engagement strategies based on evolving customer interactions, further enhancing retention rates.

7. Conclusion: A New Era of Customer Retention

AI has emerged as a powerful tool to drive customer retention in e-commerce, enabling businesses to predict churn, segment customers, and create personalized recommendations with unprecedented precision. By integrating these AI-driven approaches, e-commerce companies can significantly improve customer loyalty, reduce attrition rates, and optimize lifetime customer value. As AI technology advances, the potential for more nuanced, real-time retention strategies will only expand, making it an indispensable component of the future of e-commerce.

This article outlines the critical impact of AI on e-commerce retention strategies, highlighting the potential of advanced machine learning, predictive modeling, and recommendation systems. It underscores the importance of ethical data practices, interpretability, and scalability as AI continues to reshape customer retention in the digital marketplace.

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China-Africa Economic Ties: Opportunities and Challenges

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Abstract

In the last 50 years, China established itself as a credible economic development partner among the African nations. Its funding and finance flourished not just because of Chinese economic policy towards the region rather Chinese policy of non-interference attracted the leaders of this region. Unlike Africa`s Western development partners, China`s unconditionalities regarding lending capital and untied foreign direct investment helped the African nations to help their cause. In context of the African nations, China and its leaders were also flexible about Africa`s overall development and carried out numerous development projects (for example, BRICS, BRI etc..). This research explores the dynamics of China's economic engagement with African nations, by analyzing its investments, infrastructure projects, trade relations, and foreign direct investments. Furthermore, it also examines how these elements contribute to Africa's development though criticized by many African and western leaders. This study underscores the need for a balanced approach, and recommending that African nations safeguard their economic autonomy while leveraging China's investments for their sustainable economic growth.

Keywords: Sub-Saharan Africa (SSA), China, Investment, Soft Power, Chinese Banks, non-interference, sustainability.

1. Introduction

The African continent has a long history of experiencing colonial rule as the major European powers like Britain, France, Italy, Spain, Portugal, Germany, and Belgium colonized the continent for hundreds of years which gradually started to decline after the end of the Second World War. The colonialists no longer could restore their strongholds in this African continent as they had before. As a result of the decolonization process by the mid-1960 more than sixty colonies gained independence as states among them fifty were new African states that emerged on the global political map. The African states, previously colonies, were one of the major sources of raw materials during the colonial era, moreover, these nations were the markets of these colonial powers. During the cold war period, the newly independent states struggled a lot as they no longer could create their value chain, because most of them were the suppliers of raw materials and the former colonial powers were the destinations of their raw materials as they lack of adequate technologies and skills. The fundamental need for a newly independent state is to ensure the basic needs of its people. Shockingly, most African nations to this present date failed to address, as because they are engulfed with various crises within the country and regional level. Civil wars, insurgencies, and authoritarian rules in most African states thwarted their natural developmental process despite having potential and adequate resources. As we all live in an interdependent world, the key prospect of the present economic world order is primarily focused on the facilitation of trade and commerce around the globe. In this age of economic globalization, most African nations have faced problems like poverty, underdevelopment and aid dependency.

To elevate their backward economic condition western-backed institutions like the World Bank and International Monetary Fund (IMF) carried out deflationary structural adjustment reform programs, whose objective was to attenuate human deprivation but simultaneously were the key cause for weakening the productive sectors of African economies. Major actors like the European Union, the United States of America China and India are key developing partners of most of the African states and provided several developmental plans regarding the African region. Especially, in the post 2000`s period century rather than the Western the economic cooperation of African countries with China and India has experienced significant growth and both these countries are accepted as credible partners in terms development of Africa as key reason functions at the posture of credibility that China, India and African states experienced colonial rule. Furthermore, the way of development not by following Western prescribed methods also could be a reason for welcoming the rising economic powers China and India.

2. Methodology

The research is qualitative and exploratory by nature. This study compares and portrays China's economic and political initiatives with conventional Western development models, offering insight into how they differ in their effects on African economies. This research explores the dynamics of China's economic engagement with Africa, analyzing its investments, infrastructure projects, trade relations, and foreign direct investments. Furthermore, it examines how these elements contribute to Africa's development while scrutinizing Western criticisms that label China's involvement as self-interested and exploitative. This study underscores the need for a balanced approach, recommending that African nations safeguard their economic autonomy while leveraging China’s investments for sustainable growth.

2.1 The Rationale of This Research

China is now the second-largest economy in the world and its rapid economic development has attracted a lot of attention from more developed countries as well as developing ones because of this outward policy of economic expansion. Chinese banks, companies, and government-backed organizations have driven Chinese investment projects, financial transactions, and economic programs to an unprecedented scale across the globe. In the late 1970s, President Deng Xiaoping began reshaping China's modern economy with revolutionary policies such as "Open Up and Reform," the "dual-track" system, two-tier pricing, and privatization—assessing Mao's isolationist policies negatively. Moreover, China's entry into the World Trade Organization (WTO) in 2001 further fueled its rapid growth and opening. The Belt and Road Initiative (BRI) ambitious projects planned to connect multiple continents, particularly through Asia and Africa, would bring a number of developing and developed nations within the range of the model for economic development suggested by China. Pursuing a new global market as an emerging economic power, China has her eyes peeled towards Latin America, the Caribbean and Africa vitally as she seeks to cement herself as a credible investor & trade partner.

Since its Tenth Five Year Plan (2000-2005), China has also put in place policies such as Go Out or Go Global to promote the internationalization of Chinese firms. This economic growth passage from inside to outside has played an important role in China achieving rapid poverty alleviation, and at the same time has made China have a considerable number of Discussions about economic development models that attracted global interest from smaller economies.

China's role on the global economic stage became particularly prominent after the 2008 global financial crisis. Although the United States and other Western economies initially faced lasting consequences, China also endured setbacks but bounced back quickly to emerge as an even stronger presence on the global economic stage. The goal of this research is to investigate China with respect to Africa and find if China has economic interests beyond purely economic ends. While China's engagement in Africa is often labeled as South-South cooperation, and Beijing's anti-colonial posture has resonated with many African countries since the 1950s, so has its rhetoric about third-world solidarity and ideology.

The formation of China-Arab and China-Africa cooperation started with Zhou Enlai's visit to ten Arab-African countries from 1963 to 1964, which marked the formal establishment of relations between China and these two regions. On this visit, he established eight principles with respect to economic aid and technical assistance and five principles for strengthening bilateral relations.

China has also strengthened its relations with African nations mainly because the non-interference policy adopted by China has made many African countries trust and deepen their relationship with it in this globalized economy. However, China's presence in Africa is not without controversy. While some scholars and political leaders view it as a positive development, others see it as a form of neo-colonialism, arguing that China's involvement is primarily driven by political, economic, and security interests. The purpose of this research is to examine the facts surrounding China's economic engagement in Africa and assess the broader implications of China's presence on the continent.

3. China`s Peaceful Rise and Its Role in International Politics

China is the second largest economy in the world, followed by the USA, and the "Peaceful Rise" theme is its fundamental axiom to get itself integrated into the Western liberal capitalism-based system. Regarding the concept of Chinese Peaceful Rise and international society, the English school articulates four major phases of Sino-centric society in East Asia, China and the Western international society from the 19th century to the middle of the 20th century, Chinese revolution and opposition to Western international society and lastly from the 1970s to the present day. China is an undemocratic country, and the Western international society sees China's peaceful rise as a threat to their interest. Chinese scholars Gong and Suzuki assert that Western culture and its values are opposite to Chinese values and treat other cultures unequally and coercively. However, during the 1970s, China provided more impetus to its state-based discourse than class-based discourse, which was absent during the Cultural Revolution period. 'Reform and Open Up' gradually helped China to integrate more into international society, especially in the post-Mao era **(Buzan, 2010)**. Since the Cold War era, world politics experienced rivalry between the Western and Soviet-led blocs. However, the collapse of the Soviet Union paved the way for US-led capitalism in international society and the flourishment of globalization. China's economic development was given prime importance, and as part of it, the Chinese economy under Prime Minister Deng Xiaoping underwent a rapid transformation during the late 1970s and early 1980s. Along with economic development projects, technological development and industrialization, China gradually developed its relations with African countries despite Soviet influence. In 1978 and 1979, as part of its Peaceful Rise policy, China normalized its relations with Japan and the USA and signed the "Treaty of Peace and Friendship" with Japan's embassy in the USA. Through several incidents, like the US supply of weapons to Taiwan, China raised its concern. In 1982, China normalized its relationship with the former Soviet Union to counter the US pressure **(Khatoon et al., 2018)**. Along with the economic development plan, Deng Xiaoping had two other plans: national unification and anti-hegemony **(Buzan, 2014)**.

The transition of the market economy from the command economy gave the Chinese economy a boost, which became more profound in the 1990s after the collapse of the Soviet Union. China's excellent economic growth becomes the center of economic temptation to the developing countries of Asia, the Middle East and Africa. However, During the 1990s, the "China threat theory" concept was introduced, and ever since the inception of the term China, new terms like "New Security Concept", "peaceful rise", and "peaceful development" have been used as counter policy **(Choo, 2009)**. However, during 2003-2004 the concept of 'peaceful rise" was replaced by 'peaceful development' because the term rise might be provocative, and development would be more engaging to the neighbors and the international society **(Buzan, 2014)**. China's presence in international society became more notable since the 2008 global financial crisis, which has affected significant world economies.

Previously, China needed more presence in international society regarding economic engagement. Not only that, sceptical views regarding China by the US-led economic system started to change in the post-financial era, despite China's robust economy (trade and investment) around the globe. US President Obama visited China in 2009 and expressed that both China and the USA, despite their cultural differences, have a role to play on the global stage and the USA's intention not to contain China **(Li & Worm, 2011)**.

3.1 China's Role and Major Stakeholders in Africa

The European Union is one of the major development partners in Africa. To strengthen its ties with the African region, it signed multiple agreements and conventions like the Cotonou Agreement (23 June 2000), Lomé Convention and Yaoundé Convention to eradicate poverty and elevate overall living standards. Moreover, the EU wants to bolster its political partnership in the African region by promoting peace, human rights, the rule of law, democracy, fundamental freedom, gender equality, sustainable economic development and several areas of cooperation so that all the African nations can meet their development goals. In this context, key policies were initiated by the European Union regarding Africa, the *joint Africa-EU strategy* (2007), and the *European Consensus on Development* (2006), with the prime objective of eradicating poverty. Like the European Union, the Chinese also set foot in the African continent as a major developing partner in finance, aid, and infrastructure buildup, acting as a partner in development schemes. Unlike the EU, China does not want to intervene in the political atmosphere of African nations, as key objectives of Chinese foreign policy towards Africa are based on sincerity, friendship and equality, mutual benefit, reciprocity and shared prosperity, close coordination, mutual support and joint development.

China regulates its political, cultural exchange, economic and trade corporation through The Forum on China-Africa Cooperation (2000), a primary institutional framework that came into existence under the Beijing Declaration. FOCAC is driven between China and African nations based on equality and mutual benefit, and in this aspect, China also focuses on its '*Five Principles of Peaceful Coexistence'*. In 2006, China published its first white paper regarding its policy towards African states and declared itself as the largest developing nation that wants to increase its cooperation with the African continent's developing nations and facilitate trade so that both parties could be the beneficiaries**(Wu, 2012)**. Like China, India, in recent times, especially in post-2000 years, proved itself a credible development partner for African countries, though India's relationship with African countries dates back several decades. India's trade with Africa is tiny compared to China's trade volume. However, over the years, efforts have been made by multiple Indian governments as part of their commercial expansion to increase their investment towards Africa as it is a potential market**(Fantu & Cyril, 2010)**.

3.2 China-Africa Collaboration and Economic Transformation

China's presence in the African region could be termed as South-South cooperation in terms of China's economic engagement towards Africa, despite China's anti-colonialism, third-world solidarity, and ideology-based revolution inspired by the African nations during the 1950s of the last centuries. Furthermore, the relationship with Arab and African countries commenced through Chinese premier Zhou Enlai's visit to ten Arab-African countries during 1963-1964. His visit laid the foundation of cooperation between China and Arab-African countries, including eight principles regarding economic aid and technical assistance and five principles regarding the development of relations (**Hanauer & Morris, 2014**). China is the world's largest developing country with spectacular economic growth. The Chinese economic transformation process started in the late 1970s of the last centuries, and the economic intelligence unit predicts that in 2026, it will overtake US GDP. According to the World Bank, Chinese poverty for forty years fell from 88 per cent to 6.5 per cent in 2012, eliminating the poor status of 500 million people. Since 1970, the Chinese economy has gone through several adjustments, including the market economy, 'dual-track system', two-tier pricing of goods, promotion of privatization as part of economic reformation and a significant transformation to integrate its market into the global economy through the accession of World Trade Organization membership in 2001. In 1992, China also created the Shanghai and Shenzhen stock exchanges as part of its banking and financial system, and trade was in the liberalization process. During the post-WTO membership period, the Chinese economy experienced unprecedented economic growth in terms of investment, capital inflow (Foreign Direct Investment), foreign exchange reserve and significant level of exports around the globe. China is a rising economic power, and for its commercial expansion, it has focused on the potential markets of Latin America, the Caribbean and the African region as a credible investor and trading partner. From 2000 to 2002, China's 'Tenth Five Year Plan' (2000-2005) encouraged its farms to invest abroad through the 'Go Out' or 'Go Global' policy. The Chinese economic engagement scenario in these regions experienced a significant shift post-2008 global financial crisis because the prominent global influential actors like the United States and the European countries had to look into their domestic interests. Without financially hard-hit Western actors, a new opportunity was opened for China to engage more comprehensively. However, China also fell into the clutches of a global financial disaster but was able to turn over within a short period **(Jenkins, 2019)**. A significant reason behind China's development of economic relations with the African states is the non-interference principle, which has gained the trust of most African countries.

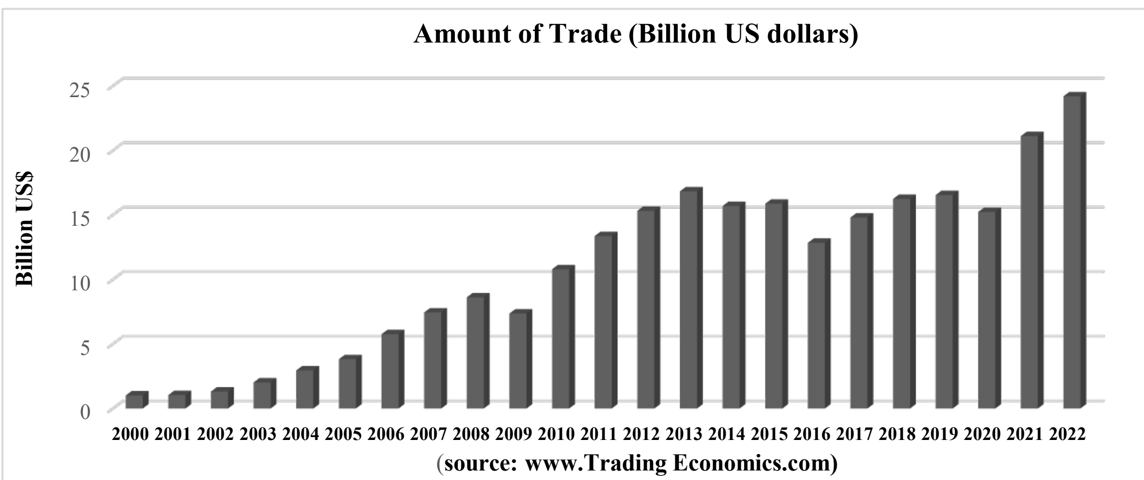


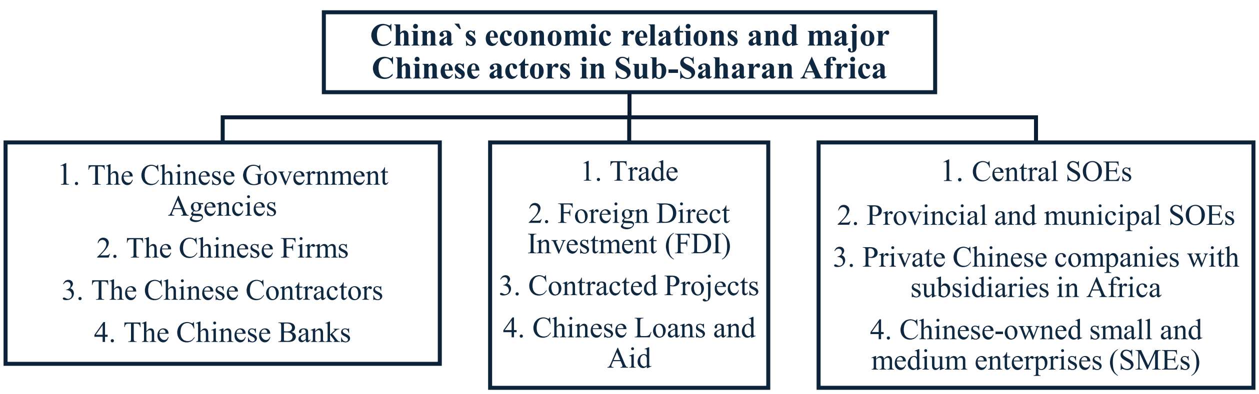
Chart-1: Volume of China`s trade with African counties from 2000-2022(source: www.Trading Economics.com)

3.3 Chinese Soft Power in Action Across Africa's Economy

Cultural attraction, ideology, and international institutions are the key features of soft power that Joseph Nye identified in the last century **(Joseph S. Nye, 1990)**. Chinese scholars and practitioners broadened the concept of soft power by incorporating economic tools (aid, trade and investment). As part of China's 'going out' policy, China conducts its economic operations through state-owned institutions like the State-owned Assets Supervision and Administration Commission (SASAC), the Ministry of Commerce, Ministry of Foreign Affairs, Chinese lending agencies, banks, provincial agents and groups. The Chinese government supports its firms and corporations by providing information, financial assistance and coordination mechanisms as part of its business promotion in Africa **(Fijałkowski, 2011)**. Chinese Ministry of Commerce (MOFCOM), founded in 2003, is the key agency for all kinds of economic relations, such as economic, trade cooperation, and aid activities in Africa, rather than the Chinese Ministry of Foreign Affairs (MOFA). Over the years, the Chinese Ministry of Commerce attenuated the role of the Chinese Ministry of Foreign Affairs (MOFA). However, the Department of West Asia and African Affairs lies under it. China manages its economic relations with Africa under the Department of West Asia and African Affairs. Its primary functions are formulating development strategies, programs and policies regarding trade and economic cooperation in the context of a given country in the region. Regarding trade and economic cooperation, another critical function of the Department of West Asia and Africa is to monitor and **supervise** the bilateral and multilateral economic and trade agreements signed by the government of China and other foreign governments. Despite these, the department conducts negotiations and looks after the interests of Chinese companies, such as gaining access to foreign markets even if they do not have any diplomatic relations with China **(SUN, 2014)**.

3.4 Major Chinese Involvement in Sub-Saharan African Development

As part of China's economic relations with African countries, it conducts economic activities through trade, foreign direct investment (FDI), contracted projects (infrastructure building, communications, mining, technology, etc.) and loans and aid programs. Furthermore, the two crucial African agencies are Chinese government agencies like MOFA and MOFCOM. Despite these, Chinese lending agencies, banks, provincial agents and groups are also active on African soil.



3.5 Chinese Government Agencies in Africa

The Chinese Ministry of Foreign Affairs (MOFA) and the Ministry of Commerce (MOFCOM) are responsible for shaping all the economic activities on the African continent. In 2000, The Forum on China-Africa Cooperation (FOCAC) was founded to facilitate trade strategic and large-scale investments. Based upon the work, central diplomatic policy regarding African affairs and the China-Africa Cooperation Forum (FOCAC) are regulated through MOFA. At FOCAC's 2006 third ministerial summit in Beijing, the heads of state and delegates from 48 African countries and China agreed to cooperate on several sectors like politics, economics and development (education, health, culture, etc..). For instance, a trade and investment agreement totaled 1.9 billion US dollars on the forum **(Corkin, 2011).** On the other hand, in trade, investment and implementation of cooperative projects, MOFCOM plays a key role. Simultaneously, other Chinese ministries such as health, education and agriculture provide medical teams, scholarships for African students and technical assistance in rural areas of Sub-Saharan Africa (SSA).

3.6 Chinese Firms in Africa

About ten thousand Chinese-owned firms are operational on African soil. They could be further categorized into four major groups: central state-owned enterprises (SOEs), provincial and municipal state-owned enterprises (SOEs), Chinese-owned small and Medium Enterprises (SMEs) and Private Chinese companies. The central state-owned firms are controlled by the Chinese central government and the Ministry of Commerce (MOFCOM), which approves overseas investment. Unlike the central state-owned enterprises (SOEs), Provincial and Municipal SOEs fall under the control of subnational authorities. Thirdly, private Chinese companies include large private firms like Sichuan Hongda and Kingho Energy and lastly, Chinese-owned small and medium enterprises (SMEs) are established by Chinese migrants and tend to be the most numerous groups, making up roughly 90% of all Chinese firms in Sub-Saharan Africa (SSA).

Notable Chinese companies like China National Petroleum Company (CNPC), CNOOC, Sinopec, China Power Investment, Sinosteel, Shandong Iron and Steel and the Jinchuan Group are active in Sub-Saharan Africa (SSA). A recent survey revealed that the proportion of private firms within the total Chinese companies varies between 75% in Angola and 95% in Nigeria, with their investments concentrated in manufacturing and service industries **(Jenkins, 2019)**. China has pledged to extend zero tariff treatment to 95% of least developed African countries' products and provide $1 billion in loans to small and medium-sized businesses **(Schiere et al., 2011).**

3.7 Chinese Contractors in Africa

Presently, more than 500 Chinese contracting firms are active on African soil from West to Subs-Saharan countries and operate in combination with construction and engineering companies. Over the years, their market share grew unprecedentedly compared to other parties on the continent. For instance, China's market share rose from approximately 10% in 2002 to 61.9% in 2019 and is still rising. The cumulative revenue growth by Chinese contractors is so significant that they have placed among the 250 largest foreign contractors worldwide. In many nations, like Tanzania, the market share of Chinese enterprises has surpassed 80 per cent. About 250 Chinese businesses secured World Bank contracts in Africa between 2000 and 2020. Not only these but by 2013 and 2018, the Chinese firms secured the largest value of African Development Bank (AfDB) contracts, amounting to US$ 4.4 billion, which was four times more than that of France, which had the second-highest value of contracts. During this time, 27.9% of the entire value of AfDB contracts was retained by Chinese enterprises **(Zhang, 2021)**.

In the beginning, large state-owned enterprises were the dominant actors, but in recent times, many private firms have also entered the scene. However, the number of central SOEs has declined, but notable leading contractors are China Railway Construction, China Communication Construction, Sinomach, and Sinohydro. More recently, provincially owned SOEs like Shenzhen Energy, Huawei, and ZTE have also entered the African construction landscape.

3.8 Chinese Banks and Development Projects in Africa

The Chinese banks are considered a significant source of financing for Sub-Saharan Africa (SSA). The Export-Import Bank of China (Exim Bank) is the most crucial lender and is estimated to have provided half of all global lending to Africa. China Exim Bank funded over 300 African projects totaling at least US$6.5 billion by June 2008 **(Institute of Developing Economies, 2009)**. During 2000 and 2014, the Exim Bank loaned a significant sum, estimated at 59 billion dollars, constituting two-thirds of Chinese lending to the region. These funds have been used for major infrastructure projects such as the Ethiopia-Djibouti Railway, the Nairobi-Mombasa Railway in Kenya, the Bagamoyo port and industrial zone in Tanzania, and a terminal for the Jomo Kenyatta International Airport in Kenya.

After The Export-Import Bank of China (Exim Bank), The China Development Bank (CDB) is the second-largest Chinese lender to Africa, having provided 13.7 billion dollars between 2000 and 2014. Other state-owned commercial banks, like China Construction Bank and ICBC, are also active African lenders. China's financial aid to SSA is primarily channeled through loans from these banks **(Jenkins, 2019).**

3.9 China's Trade Ties with African Nations

Since 1990, the trade between China and Sub-Saharan Africa has experienced significant growth, and the UNCTAD (UN Conference on Trade and Development) 2014 report revealed that it is nearly $193 billion US dollar compared to the 1990's less than $5 billion US dollar. The key driving factor for the trade growth from the Chinese part is the demand for natural resources like oil, minerals, and metals for its energy sectors. China receives 86 and 100% of all oil shipments from Angola, Sudan, Nigeria, and Congo. Similarly, the Democratic Republic of Congo exports 99.6% of its base metals to China. Moreover, these resources fuel China's rapid industrialization. Examples include China's reliance on Angolan oil for its energy needs and its import of copper from the Democratic Republic of Congo for electronics manufacturing.

Merely seven Sub-Saharan African nations obtain a substantial proportion of their imports from China. The most import-dependent Sub-Saharan African economies that rely on Chinese manufactured goods are Angola (33 per cent of imports), South Africa (19 per cent), Sudan (13 per cent), and the Democratic Republic of Congo (8 per cent) **(Kaplinsky et al., 2010).** While China imports resources from SSA, it primarily exports manufactured goods. Over 90% of China's exports to SSA are low-tech products like clothing, footwear, electronics, etc.

Chart-2: China-Africa Trade 2005-2022 in billion US dollars (Source: https://www.sais-cari.org/data-china-africa-trade)

3.10 China`s Foreign Direct Investment (FDI) in Africa

Over the years, China has become a major source of FDI in Africa. Since 2006, China's foreign direct investment (FDI) into Sub-Saharan Africa has also expanded dramatically. Approximately $3 billion, or almost 23 per cent of all FDI inflows to the region in 2021, came from China, demonstrating a remarkable surge in FDI flows **(International Monetary Fund (IMF), 2023).** Out of forty-seven Sub-Saharan African countries, China invested in forty-five countries, though the amount of investment varied from country to country. China's Ministry of Commerce (MOFCOM) and the growing number of Chinese firms are the prime sources of investment in the Sub-Saharan African region. By 2011, China was the fourth-largest investor in annual inflow and the sixth-largest in total stock. Notably, Chinese FDI surpassed US investment inflows into Sub-Saharan African countries that same year. According to the report of the Chinese Ministry of Commerce (MOFCOM), China's global outward investment from 2003 to 2015, Chinese foreign investment stock increased by nearly seventy-fold, and Sub-Saharan Africa only accounted for a small portion, less than seven per cent.

In Sub-Saharan Africa, China was the fourth biggest investor by 2014, accounting for nearly six per cent of the region's total FDI stock. Chinese investment has reached nearly all corners of Africa. Major countries, including South Africa, Zambia, Nigeria, Sudan, and Zimbabwe which include the extractive sector, encompassing oil, gas, and mining, are the primary targets for Chinese FDI in SSA. Official Chinese data reveals that extractive industries claimed 30.6% of China's outward FDI in Africa by the end of 2011, outpacing finance (19.5%), construction (16.4%), and even manufacturing (15.3%).

However, the China Global Investment Tracker offers a contrasting view, suggesting a much larger share directed towards extractive industries. Their data indicates that oil, gas, and metals comprised over two-thirds of Chinese investment in Sub-Saharan African countries between 2006 and June 2016. These investments have contributed to African countries' economic growth and facilitated the transfer of technology and know-how from China to Africa.

3.11 Chinese Contracted Projects in Africa

Despite trade and direct investment, China has also engaged in several contracted projects in the Sub-Saharan Africa region. It was heavily involved in building infrastructure like roads, railways, dams, power plants, and public buildings. By the end of 2007, the Chinese were financing ten big dams across nine African countries. These projects are anticipated to cost over US$5 billion, with China financing about US$3.3 billion. These facilities generate over 6,000 MW of electricity, representing a significant portion of Africa's total hydropower capacity of 17,000 MW. Nigeria's 2,600 MW Mambilla hydroelectric project is the largest on the list. China has made a significant comeback in the African rail sector, with over $4 billion in finance commitments. They comprise the restoration of more than 1,350 kilometers of existing railway lines and the building of almost 1,600 kilometers of new railway, and now Africa's railroad network spans over 50,000 kilometers. The most significant deals have occurred in Nigeria, Gabon, and Mauritania.

Along with hydroelectric and railway projects, the Chinese have been constructing roads throughout Africa. Chinese contractors promise to build roads totaling over 1400 kilometers under about 18 projects and the total value of financing for verified projects is approximately US$550 million. However, China's main contribution to Africa's ICT sector is through equipment sales. This sometimes entails routine business interactions between Chinese producers and public-private African operations. ZTE, Huawei, and China International Telecommunication Construction Corporation (CITCC) agreed to work together. One of China's ICT projects includes the National Communication Backbone Infrastructural Project in Ghana, which was agreed upon in June 2006. The Export-Import Bank of China is financing US$31 million of a US$70 million project initiated by the Ministry of Communications through a concessional loan.

The initiative aimed to restore and develop fixed-line communications technology in the country **(Foster et al., 2009)**. Chinese projects have experienced a dramatic shift, with the value of completed projects rising more than twenty-fold between 2003 and 2015. As of 2015, Sub-Saharan Africa accounted for roughly 30% of the total value of China's contracted projects worldwide, with over 130,000 Chinese workers employed on projects in the region. China's National Bureau of Statistics reveals that oil-exporting nations like Angola, Nigeria, Ethiopia, Sudan, and Equatorial Guinea are the most important markets for these projects. In terms of sectoral breakdown, transportation projects account for the largest share (47%), followed by hydropower (17%), gas, coal, and other energy projects (14%), and construction (12%) **(Jenkins, 2019)**.

3.12 Chinese Loans and Aid programmes in Africa

China has significantly increased its financial commitments to Africa through a series of high-profile meetings known as FOCAC (Forum on China-Africa Cooperation). China promised to lend $10 billion to Africa at the 2009 Forum on China-Africa Cooperation (FOCAC), emphasizing the importance of aiding Africa in addressing climate change, achieving the Millennium Development Goals, and overcoming obstacles related to food security, energy security, and epidemic diseases **(Schiere et al., 2011)**. These commitments have grown steadily, with China pledging $10 billion in preferential loans and buyer's credit between 2010-2012, $20 billion between 2013-2015, and a massive $60 billion between 2015-2018. The China Exim Bank and the China Development Bank are the primary institutions channeling these funds to Sub-Saharan Africa (SSA). According to research by the China Africa Research Initiative (CARI) and Aid Data, Angola has been the biggest recipient of Chinese loans in SSA since 2000, followed by Sudan, the Democratic Republic of Congo (DRC), Ethiopia, and Nigeria. Notably, Chinese lending in SSA is concentrated in two key sectors: transportation and energy. A distinct feature of Chinese finance in the region is the extensive use of commodity-backed loans, also known as resource-for-infrastructure swaps. These swaps have amounted to $30 billion between 2000 and 2014. Two of the most talked-about examples are loans to Angola in exchange for oil and the Sico mines agreement in the Democratic Republic of the Congo **(Jenkins, 2019).**

3.13 China`s Other Engagements in Africa

In 1990, China initiated a 'Peaceful development' strategy to develop its relations with countries that saw China as a threat to their interests. China's key object behind the posture of this strategy was none but it is economic growth and modernization. However, the tide turned in Favour of China due to its economic boost, and China carefully crafted its outward policy to meet the growing demands for new markets and resources. A major Chinese trade is conducted through sea and maritime piracy, especially in the Strait of Malacca, which threatens its trade. Piracy is part of Chinese militarization and an emerging powerful global actor, and the Chinese government has invested in building strategic seaports, as in the case of Pakistan's Gwadar Seaport. The key intention of the Chinese government is to secure the line of communication; that is, China's oil importation doesn't get impeded by any external sources, which also stands for its trade. To secure foreign oil sources, China made long-term commitments to the Middle East and African countries. Sudan, Angola, and Congo are notable African countries fulfilling China's growing energy needs as part of a commitment to invest billions of US dollars in constructing pipelines, refineries, seaports, and unexplored oil resources.

In 1985, China was the largest oil exporter amongst the East Asian countries, and in 2004, the picture was the opposite; that is, China became the world's second-largest importer **(Pehrson, 2006)**. In 2005, Booz Allen first put forward the term' String of Pearls' in a report headlined 'Energy futures in Asia'. The key theme of the string of pearls was the Chinese government's economic, military and, lastly, political intentions regarding the Indian Ocean region. The pearls symbolize the important and strategic seaports like Chittagong Port, Hambantota Port, Gwadar Port, etc., of the Indian Ocean region. As mentioned earlier, the prime objective is to secure the safe transportation of energy resources (oil, gas) and facilitate trade with the rest of the world because the Chinese economy mostly relies upon international maritime routes **(Ashraf, 2017)**. Since 2000, China built hundreds of ports in the African continent and constructed thousands of kilometers of railways and highways.

The key reasons behind building these seaports are the easy mobilization of minerals (copper, iron ore, bauxite), petroleum, livestock, grain and industrial fishing. Chinese firms have invested, financed, built and operated at 61 port facilities in 30 African countries. These ports have accelerated trade between China and African nations and placed China at the top in terms of a single country with such a high level of involvement (investment, finance, partnership, or ownership) in the ports of the African continent. Chinese Premier Xi Jinping, in the case of economic development, highlighted the importance of ports, roads and railways. Furthermore, Xi

Jinping remarked that "*there is a common saying, 'if you want to get rich, first build a road,' but in coastal areas, if you want to get rich, you also need to build a port*" (Kardon, 2022, p. 17). Likewise, the port 'One Belt, One Road, One Continent' (BRI) project strengthened the relationship between China and African countries into a new platform.

Initially, the African continent was not part of the BRI project, but after 2015's Johannesburg Summit, because of the positive enthusiasm of the leaders of African states regarding BRI, Chinese President Xi Jinping included the African continent under the BRI project. Of 54 African countries, 53 are part of the Belt and Road Initiative project, though Chinese officials report that the number is 49. Before the BRI project, China maintained its relations with African countries for economic means, and this project provided China with more access and flexibility in case of trade, investment and cooperation. Many African landlocked countries are the key beneficiaries of this project, as shown by the newly constructed seaports, roads, and railway tracks. China has enmeshed the African countries under a network of connectivity that includes ports, railways, and highways.

A key example of connectivity could be North Sudan's oil refinery, which uses railway tracks to transport the oil, further connecting Port Sudan and Dakar port of Senegal. The same scenario could be seen in Tunisia's Phosphate transformation industries, which use railway connectivity to use Port Zarzis. Similarly, Gabon's Belinga iron ore project uses the railway line. Finally, it takes the facility of Port Santa Clara or an industrial park of Ethiopia, which could take the privilege of the Addis Ababa-Adama highway, Addis Djibouti railway connectivity, and finally use the Djibouti port facility. Over the last two decades, China heavily financed, invested, and constructed roads, ports and highways to reap facilities and maintain the flow of its importation and exportation of primary goods (raw materials, like iron, copper, bauxite, agriculture and fisheries, etc.) and finished products (manufactured in China) **(Lokanathan, 2023)**.

3.14 Debate on China's Economic Presence in Africa

China itself portrays that its values are built upon its tradition and culture, which allows China and its leaders to cling more towards a soft power-based approach than a challenging power-based approach in international society **(Li & Worm, 2011)**. However, some scholars and political elites consider the Chinese presence in the African region as a blessing and some critics of China portray Chinese presence as a form of new colonialism. The key argument is that China is nothing but fulfilling its interests (political, economic and security interests). Over the years, China stated that the colonial powers subjugated both the Chinese people and the African people, and their foundation of relation is based on common sufferings. The Chinese believe their presence in the SSA region has brought multifold advantages to the SSA countries. The low-cost strategy, low interest rates regarding loans, non-interference policy in internal politics of the SSA countries and lucrative trade deals gained the trust of most of the countries. For instance, the majority of African leaders accuse Western countries of raising concerns about their violations of human rights issues and pulling themselves out of different development projects, and not only that, they use economic means to bind them. At the same time, the Chinese policy of non-interference in internal matters is preferable to African leaders.

Regarding loan disbursement, Chinese fewer conditional loans are preferable to global institutions like the World Bank and the International Monetary Firms (IMF) with Western-prescribed conditionalities. Under the South-South strategy, trading with China has propelled the African economy's slow and stagnant economic growth and helped them create a better export-oriented economy and employment. China has provided billions of dollars as a loan to the SSA countries at low interest rates with fewer conditionalities, which is why the African nations welcomed China with open arms **(Condon, 2012)**. In contrast to the positive features of Chinese involvement in SSA, the critiques of China often raised concern about the Chinese intentions in SSA. Firstly, they condemn China for its low-cost manufactured products and their quality, and not only that, regarding dumping Chinese products in the African markets. Secondly, the most debated issue is the SSA region's Chinese loan and aid programs, as the critics opine that Chinese loans are readily available and unconditional.

Furthermore, the loans need more transparency and accountability. Thirdly, a significant concern regarding Chinese presence in SSA included several interests, including political and security, despite economic interests. In the case of economic interest, another critical criticism is that China only looks for its economic interests in the SSA region. Because of the tremendous economic growth, China needs Africa, a secure source of raw materials and a potential market for its manufactured goods. Critiques labelled the Chinese role in SSA as neo-colonialist, but many African leaders consider China their major development partner **(Chigori, 2016)**. Fourth, the concern is about Chinese loans and their aid to African countries.

Over the years, China has provided billions of US dollars to reconstruct Africa, where most Western actors and institutions were in a dilemma about the debt service payment. Despite knowing the debt service payment conditions of the African countries, China is more willing to finance it. This raised concern among critics that China might use financing as critical leverage to establish its political and military will in the region. Furthermore, China might use its loans and investments as critical tools to exert pressure or intervene in the internal politics of the African countries. Another critical factor regarding African countries is that these are highly indebted, so the government-earned revenues dry up in debt service payments. As a result, governments could not pay much attention to various social welfare sectors like job creation, employment, health, social security, etc.

Table 1: Debt Indicators in Africa

Indicator (Year)	**Africa**	**West Africa**	**Rest of Africa**
External debt per capita (2021)	US$440.7	US$628.5	US$476.9
Rate of economic growth per capita (2022)	3.80%	3.60%	3.90%
External Debt Sustainability Ratio (2021)	71%	73.70%	77.20%
China’s outstanding bilateral loans in 2021	US$63.2 billion	US$20.8 billion	US$42.4 billion
Chinese share in external debt (2021)	13%	16.60%	13.30%
GDP per capita (2021)	US$2140	US$1489	US$1922

Source:(https://www.orfonline.org/public/uploads/posts/pdf/20240118104738.pdf)

For instance, only in 2021, in the case of China`s debt service payment, the West and the rest of Africa`s liability were 56 percent and 40 percent respectively. In the case of Ghana regarding its Chinese 700 million US dollar debt, Ghana gradually is losing control over the mineral mines like oil, and bauxite and Chinese banks constantly asking for repayment as Beijing is providing no concession**(Gupta, 2023)**. Four central Chinese banks, China Exim Bank, CDB, ICBC, and BOC, are accountable for 56 per cent of financing projects and lending loans in the African continent.

According to a report by the China-Africa Research Initiative, since 2019, central Chinese banks have provided loans to less indebted African countries as part of their overseas financing to secure their loans. Exceptional instances could also be mentioned in Ghana, Zambia, and Kenya.

On the other hand, oil-rich Angola is the highest recipient of Chinese loans because China wants to secure its energy supply. The Chinese government, firm's resource-backed lending policy has often been criticized by financing Institutions and Western actors like the IMF for overburdening African countries by providing loans despite their vulnerability to debt service payment, which happened in oil-enriched Angola, Sudan and Congo as the price of oil fluctuated**(Acker & Brautigam, 2021)**. However, from the Chinese perspective, the 'debt trap' concept regarding China-Africa relations (economic development) has raised concern; China needs to coincide with this term but sees it as a poor narrative.

Chinese foreign minister Qin Gang, on January 11 2023, at a press conference, said that China and Africa are like good brothers and would stick together and share well and woe. He also agreed that the debt burden had hindered joint development, so balanced development financing could be the key. Furthermore, Xi Jinping urged all the responsible parties like the IMF, the World Bank, and China to work together to ease the debt burden and 'debt trap' term regarding Chinese financing would instead exacerbate the China-Africa economic development projects**(Ministry of Foreign Affairs of the People's Republic of China, 2023)**. The fifth issue is that Western actors have always accused China's presence on African soil of not being confined to economic interests. Instead, it has political and military ambitions to increase its influence.

Regarding political influence, China continuously pushed African nations to support its "One China Policy", and countries were given financial packages in return. Many countries aligned with China's policy and withdrew Western investors and support from Taiwan. As happened in the case of France, Benin's president asked French company Bellore to withdraw from its rail infrastructure project and initiated the Benin-Niger linking project as a make way for China **(Lokanathan, 2023)**. Despite both economic and political, over the years, China has invested a large amount of its capital in reforming its military. The cumulative defence spending in the Indian Ocean region raised concern among other actors like India and the USA. Presently, the largest trading nation in the global market is none but China, and, in this regard, China is dependent upon the supply of raw materials for manufactured goods. Furthermore, Chinese goods are valuable in low-income developing countries, and Africa is no exception.

However, the Chinese argument in this regard is to safeguard its trade and commerce and ensure its personnel's security from any external threat. China sees the maritime route as the most cost-effective and more congenial for trade, and that is why it invested more in seaport construction in the African continent and the Indian Ocean region. On April 8, 2016, China's first overseas military base construction at Djibouti started at around a cost of 590 million US dollars. From the Chinese point of view, the key goals are anti-piracy and freedom of navigation. Again, Djibouti's strategic location could allow China to secure its crude oil importation from the Middle East through the Gulf of Aden into the Indian Ocean and the South China Sea**(Sterioti, 2017)**

4. Conclusion and Recommendations

Over the past few decades, the economic relationship between China and Africa has become one of the most dynamic forms of global cooperation. Unlike steeper loans offered by Western lenders, China has provided development funds without heavy conditions and Africa leaders have found the package attractive because it allows them to develop infrastructure and foster economic growth on their terms. Flagship ventures such as the Belt and Road Initiative have rendered tangible dividends by upgrading connectivity, trade networks, and access to resources across the continent. Nevertheless, this relationship also poses significant challenges including concerns of debt sustainability, economic dependency and long-term consequences for local industries. A middle-ground approach is needed as Africa continues to engage China, allowing it space for investments but not at the cost of sustainable development and economic independence.

For Africa, one critical lesson is that this relationship with China needs to be accompanied by diversification away from China. African countries also need to minimize the risks that result from over-reliance on one foreign partner, which can be achieved through engaging with other international investors such as the European Union, US and India. The varied partners create a competitive environment that may result in better terms for African countries as they can complement China's infrastructure investments with other assets and expertise. Here, Rwanda must continue to be a model in success of building many foreign partnerships could be laid out through a balanced array of equity holders bolstering economic resilience.

The agreements with China should also emphasize skill transfer and technology sharing so that investments are contributing to local capacity-building. African leaders, on the contrary, can ensure that their citizens develop skills that are aligned with long-term economic growth by demanding employment and training of local people as part of those agreements. Ethiopia has made this work in its own industrial parks built with Chinese assistance but with at least some degree of effort to motivate local employment there. These initiatives allow African countries to acquire essential knowledge in the long run, so they need less support from external partners over time. AFCFTA must be crystal clear about how the contracting is done in order to protect African interests. To avoid the risks of opaque arrangements, governments should pursue agreements that are transparent and accountable. Making terms publicly available could help citizens and stakeholders understand the benefits of international investments and their potential pitfalls, while shining a light on whether they fit into broader economic goals for the country. Similar principles of transparency, predictability and regulatory compliance reflected in the European Union Global Gateway and United States Prosper Africa initiatives demonstrate how clear standards can enable partnerships that serve local needs while benefitting exports through sustainable pathways.

As they surmount these massive investments, debt management is a key other component for African countries. The case of the Hambantota Port in Sri Lanka, where high debt levels forced a 99-year-leasing of the strategic asset to China, demonstrates a possible danger from unfettered lending. African countries need to install debt management frameworks that impose strict caps on borrowing from abroad and condition financing on projects with sufficient economic returns to guarantee their payment in the long term. This ensures protection from financial vulnerability whilst retaining control over strategic assets. In particular, regional integration will enhance the advantages of Chinese investment in Africa, especially for cross-border infrastructure projects linking African countries. This would grant a new layer of cohesion and, after all, bargaining power in structuring Chinese-funded projects through regional organizations such as the African Union or within the framework of the African Continental Free Trade Area (AfCFTA). This model of engagement not only bolsters continental economic integration, but enables African countries to present a united front when negotiating investments from outside the continent in order for projects built on shared African priorities.

African states should also aim to steer foreign direct investments into local industry and fostering the development of exports. Emphasizing targeted sectors such as manufacturing, agribusiness and green energy, for instance, allows African leaders to use foreign investments to consolidate high-potential industries and create local job-supporting industries. By aligning Chinese investments with many countries' strategies for economic development, they are able to historically build competitive industries and battle dependence on imports while fueling sustainable growth. Such an approach will allow African countries to get benefit from the Chinese partnerships without being imposed with local economic structures and priorities.

The future of economic partnership between China and Africa depends on how African states manage the opportunities and challenges associated with such investments. Through a policy path that is balanced, pragmatic and realistic: an economic sovereignty agenda; diversification in international relations partnerships —including diplomatic and social exchanges—but also trading relationships; technology transfer and the development of manufacturing capabilities; transparency regarding sovereign debts; promoting regional integration and reinforcing local industrial bases—African nations will be able to extract the maximum from China intelligently while simultaneously protecting their own economic future. This strategy will allow Africa to fully leverage China’s resources as a platform for sustainable growth, promoting self-reliant development that aligns with the continent’s aspirations for economic independence and prosperity.

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Exploring Opportunities in the International Halal Market: Policy Guidelines for Bangladesh's Expansion

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Abstract

Bangladesh has a huge market potential for embracing halal ecosystem while this market is largely untapped and overlooked due to many challenges. This paper explores the vast potential of Bangladesh's halal market, emphasizing its opportunities and challenges in expanding globally. Despite a significant Muslim population and a natural advantage in producing halal goods, Bangladesh has yet to fully capitalize on the growing global demand for halal products. Key challenges include fragmented certification standards, inadequate technology, limited skilled labor, and logistical issues. The study highlights how halal products, valued for their cleanliness and health benefits, are gaining popularity among both Muslim and non-Muslim consumers worldwide. Bangladesh's membership in the Organization of Islamic Cooperation (OIC) further strengthens its position, offering a strategic opportunity to boost exports of halal food, beverages, pharmaceuticals, and cosmetics. The paper reviews current market trends, noting that regions like Asia Pacific dominate the global halal market. It also addresses the specific barriers Bangladesh faces, such as the need for unified halal certification, improved infrastructure, traceability, and halal-compliant financing. The study suggests actionable recommendations, including establishing an international halal certification body, creating a dedicated halal economic zone, offering fiscal and non-fiscal incentives, and upgrading branding and marketing efforts to meet global standards. By addressing these challenges, Bangladesh can unlock its full potential in the growing halal market and significantly increase its export earnings

Keywords: Halal market; Export opportunities; Market trends; Halal Certification; Challenges.

1. Introduction

"Halal," an Arabic term, refers to what is permissible in Islam. Halal products must be free from harmful substances and adhere to Islamic laws during processing, packaging, storage, transportation, and preparation. The emphasis on cleanliness and safety has led to a rising demand for halal products, not only among Muslims but also among individuals of other faiths worldwide. This surge has resulted in the growth of halal industries globally, driven by a commitment to high-quality, compliant products.

According to a survey by the Islamic Foundation Bangladesh (2018), the global halal market is valued at approximately USD 4.7 trillion. In 2021, the world's 1.9 billion Muslims spent USD 2 trillion across various sectors, including food, pharmaceuticals, cosmetics, fashion, travel, and media/recreation, marking an 8.9% increase since 2020 (Global Islamic Economy, 2021). The halal food and beverage sector alone accounted for USD 1.27 trillion in spending, projected to rise to USD 1.67 trillion by 2025. The halal fashion market, valued at USD 295 billion in 2021, is expected to grow to USD 375 billion by 2025, while the halal media and recreation sector saw expenditures of USD 231 billion, anticipated to reach USD 308 billion by 2025. Additionally, halal tourism spending was valued at USD 102 billion in 2021 and is projected to increase to USD 189 billion by 2025. Halal pharmaceuticals are also expected to grow from USD 100 billion in 2021 to USD 129 billion by 2025. These figures highlight the escalating global demand for halal products and services.

Several countries have made significant advancements in meeting this demand, with Malaysia serving as a prime example for Bangladesh. Other nations like the United Arab Emirates, Indonesia, Turkey, Qatar, Saudi Arabia, Pakistan, South Africa, Brazil, Canada, and the United States are also emerging players. With its vast potential, Bangladesh has a unique opportunity to penetrate local and global halal markets by offering competitive, high-quality halal products and services. Reports suggest that Bangladesh could generate USD 1 billion annually by exporting halal products to various markets (Kaler Kantho, 2020).

Bangladesh has significant potential to develop a robust halal ecosystem, yet this market remains largely untapped due to various challenges. Key issues include the lack of international standards and recognition for halal certification, which complicates exports, especially for halal meat to markets like the UAE and Kuwait. Entrepreneurs in the halal sector face substantial obstacles in accessing international markets, prompting calls for government support to establish universally recognized halal certificates. Additionally, Bangladesh needs to adopt best practices in supply chain management but lacks adequate resources and skilled manpower. Weak infrastructure, inadequate ecosystems, substandard certification processes, and low-value addition hinder the country's competitive advantage in the global halal market. Addressing these challenges could unlock new avenues for foreign currency income through halal exports, contributing to Bangladesh's economic growth.

Muslims expect their food to be hygienic and free from harmful ingredients, leading global companies, including those from non-Islamic nations, to increasingly offer halal products. For instance, Korean businesses have established halal eateries and stores in Malaysia. Given the USD 107 billion domestic halal consumer market—the second-largest after Indonesia—Bangladeshi businesses should actively promote halal products to capture a share of the global market. The halal export sector can enhance Bangladesh's agriculture and food industry, which generated USD 1.51 billion in FY 2020-21. With the global Muslim population projected to reach 2.2 billion by 2030, Bangladesh has a significant opportunity to produce safe and halal food items for international markets. However, the country currently lags in food safety protocols and halal certification, leaving a gap that this study aims to address by developing a robust halal ecosystem through policy development and improved supply chain processes.

The specific objectives of this research are twofold. First, it aims to investigate the opportunities available in the international halal market, focusing on identifying potential markets and consumer preferences that can benefit Bangladeshi businesses. Second, the research seeks to design comprehensive policy guidelines that will facilitate the development and expansion of Bangladesh's presence in the halal market. By addressing existing challenges and leveraging market opportunities, this study aims to position Bangladesh as a competitive player in the global halal landscape.

2. Literature Review

The concept of "halal," meaning lawful and permissible in Islam, is foundational to understanding the halal market. Rooted in Islamic values, halal dictates that Muslims can only consume products that align with the principles established in the Quran and Sunnah (Doi, 2007; Kamali, 2013). Halal products must be free from harmful substances and adhere to specific standards throughout their lifecycle, including processing, packaging, and transportation (Wilson, 2010). This focus on hygiene and safety is increasingly important to consumers, leading to a growing demand for halal items, not just among Muslims but also among non-Muslims who appreciate the health benefits of these products (Jahan, 2014; Mostofa, 2022). The escalating interest in halal foods reflects a broader trend toward ethical consumption and food safety, which is essential for addressing consumer preferences in both local and global markets.

The halal market is significant and diverse, encompassing various sectors beyond food, such as pharmaceuticals, cosmetics, fashion, tourism, and media. The halal food and beverage sector remains the largest, with global spending by Muslim consumers reaching USD 1.27 trillion in 2021, projected to rise to USD 1.67 trillion by 2025 (Ray A., Allied, 2022). Opportunities abound for halal entrepreneurs, especially in the production of halal ingredients, organic foods, and innovative retail solutions. Similarly, the modest fashion sector, targeted primarily at Muslim millennials, offers potential for growth through online platforms and fashion events (Kader SA, 2022). The media and recreation sectors are also expanding, with Islamic-themed content appealing to the youthful demographic projected to dominate the Muslim population by 2030 (Chamberlayne, 2020).

Moreover, the global Muslim travel market is witnessing substantial growth, with spending expected to reach USD 274 billion by 2024. This sector presents opportunities for halal entrepreneurs to meet the faith-based needs of Muslim travelers through halal-friendly accommodations, transportation, and services (Shane S & Venkataraman S, 2000). The halal pharmaceuticals market is gaining traction as well, with an increasing demand for products that ensure efficacy, quality, and safety while complying with halal standards (Kuratko DF, 2016).

Similarly, the halal cosmetics industry is set to expand significantly, with Muslim consumer spending projected to rise from USD 64 billion in 2018 to USD 95 billion by 2024 (Soltanian et al., 2016).

Bangladesh stands at a crucial juncture in the halal market, currently ranked fifth in global Muslim food and beverage consumption. The country's agriculture and food sector, which exported USD 1.4 billion in FY 2018-19, has the potential to significantly increase halal product exports, especially in the lucrative Middle Eastern markets (Bangladesh Food Safety Authority, 2018). However, challenges such as inadequate halal certification processes and infrastructure development hinder Bangladesh’s competitive edge in the global market. The government and private sectors must collaborate to establish an international standard for halal certification and create a supportive ecosystem for halal product manufacturers (Kayed RN & Hassan MK, 2019).

To capitalize on the growing halal market, Bangladesh needs to focus on key strategies, including developing an international halal certification process, creating a dedicated economic zone for halal manufacturers, and framing policies that support industry growth (Rahman RA & Mohamed Z, 2021). With the right infrastructure and government support, Bangladesh could transform its halal industry into a significant contributor to the global market, unlocking vast economic opportunities and establishing itself as a leader in halal products and services.

The halal certification system in Bangladesh faces significant challenges, limiting market expansion due to its complexity (Ali, 2022). As of 2021, the Bangladesh Islamic Foundation issued halal certificates to 140 companies, encompassing over 700 halal brands, including notable firms like Bengal Meat, Olympic, and Pran. However, the certification process is slow, leading to prolonged waits for many companies (Bangladesh Standard and Testing Institute).

Despite the demand for halal products, consumer trust in supply chains and traceability remains an issue, particularly regarding food imports from non-Muslim countries (Yun et al., 2020). This has led to stricter regulations for halal certification in Muslim markets. Confusion arises from multiple governing authorities and certification bodies, both local and international, creating challenges for manufacturers in navigating standards (Elasrag, 2016). The complexity of the certification process often renders it cost-prohibitive and hinders market growth (Talib & Razzak, 2013).

Additionally, the halal industry is still developing and lacks a universally recognized standard for practices (Miskam et al., 2015). To address these challenges, stakeholders must proactively engage in creating and promoting halal products globally. Research indicates that two critical factors drive Muslim consumers' choices: the halal industry's diverse offerings and the support from the Islamic finance sector in adhering to sharia compliance (Thomas & Selimovic, 2015).

3. Methodology

This study employs a mixed-method approach, integrating quantitative and qualitative data collection methods. Quantitative data were gathered through surveys, while qualitative insights came from secondary sources, observations, individual interviews, and focus group discussions (FGDs). The research team used 'KoBo Collect,' a mobile data collection tool, to streamline data entry via tablets and smartphones. The target population includes a diverse range of stakeholders in the halal industry, such as exporters and government officials from relevant ministries. This approach aimed to capture a comprehensive view of the industry by integrating public and private sector perspectives. Various research techniques were employed to gather in-depth information about the dynamics of the halal market in Bangladesh.

For the quantitative survey, the sample size was calculated using a widely accepted statistical formula, resulting in a target of 100 respondents based on a 96% confidence level and a 10% margin of error. The sample was proportionately distributed among different beneficiary types, ensuring balanced representation across sectors involved in halal production. Simple Random Sampling was used to select respondents based on their contributions to the overall population. The qualitative component involved 20 semi-structured interviews with factory managers and mid-level managers, as well as interviews with 27 senior officials from key government organizations, culminating in a total of 47 respondents. A focus group discussion was also held via Zoom with one Managing Director and two senior managers. Data collection utilized semi-structured questionnaires and checklists designed to address the research objectives and indicators relevant to the halal market.

These instruments were developed collaboratively and piloted to ensure effectiveness. The research team used 'KoBo Collect' for efficient survey administration, with trained enumerators employing algorithms for real-time data validation, enhancing data quality and accountability. Field reports were prepared immediately after qualitative interactions to capture key insights. Data triangulation enriched the findings from both quantitative and qualitative sources. Quantitative data were analyzed using SPSS and MS Excel, while qualitative data underwent a systematic four-step analysis: preliminary analysis to identify key themes, thematic coding to categorize data, compilation of observations by themes, and selection of relevant quotations to exemplify key insights.

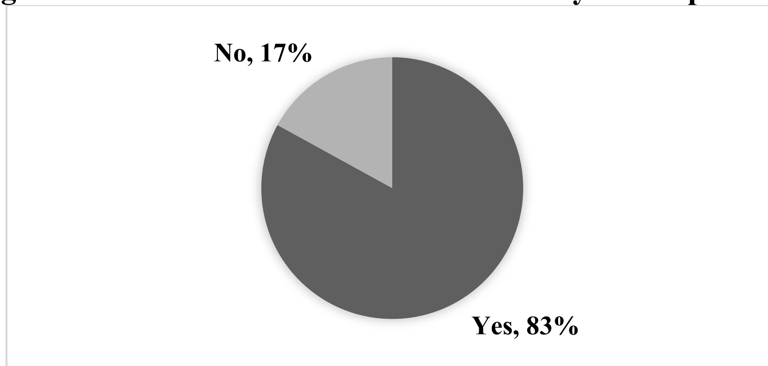
Before the research commenced, the team conducted a thorough risk assessment to identify potential challenges, secured necessary permissions, and established a contingency plan. Ethical standards were prioritized, with participants informed about the study's objectives and assured of their anonymity. Participation was voluntary, with no financial incentives offered, and consent was obtained from all participants, safeguarding the rights and welfare of respondents and researchers.

4. Results and Discussion

4.1 Awareness of halal products and position of halal certificate in the local market

This study found that people of Bangladesh are interested in purchasing items after viewing the Halal certificate. It has been asked whether they use the halal certified products or not and what kind of products have halal certification. Among the responses, most of them 83% consider halal products, while only 17% of respondents do not consider halal products when they go to the market.

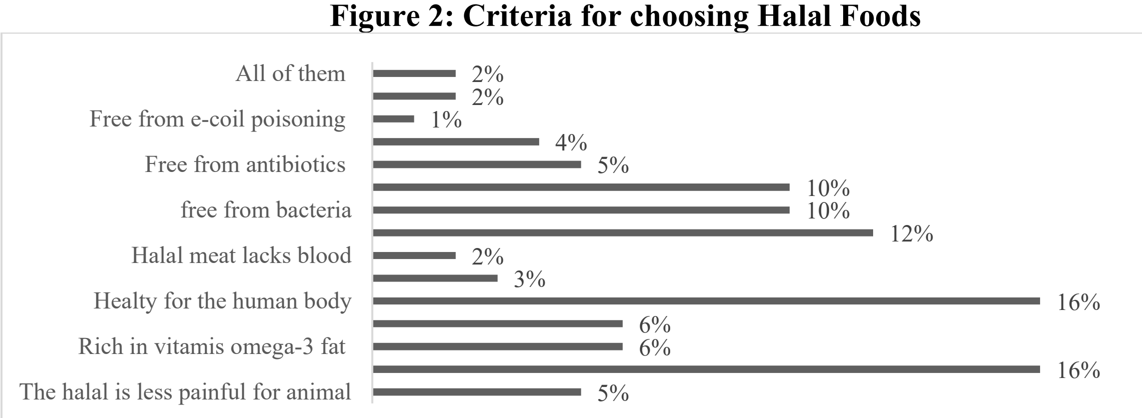
Figure 1: Consideration of Halal Products by the respondents



The survey found that more than half of respondents have consumed ‘halal food. 4.9% of respondents mentioned that they use halal certified ‘personal care products while the respondents used ‘cleaning equipment’ with a number of 4.9%. 18.2% of people agreed that they use all the halal-certified ‘personal care products, food, and cleaning equipment’ while less than 1% of respondents emphasized that they use halal-certified ‘personal care products and cleaning equipment’.

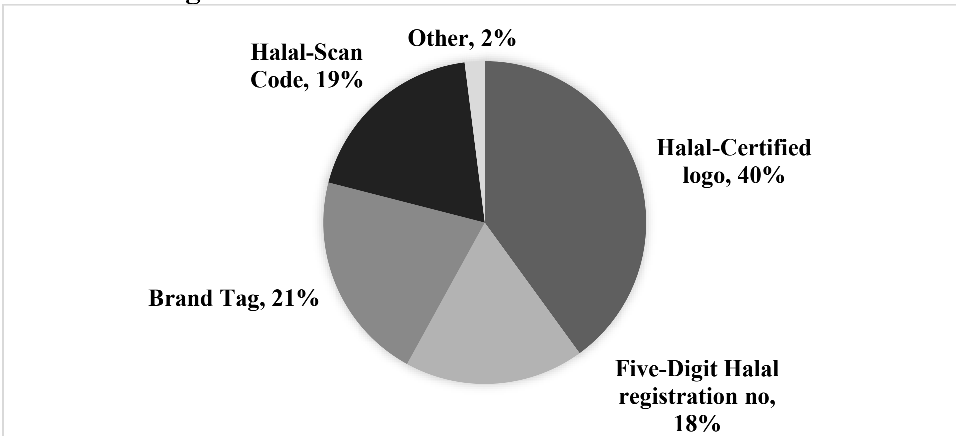
In response to the question of why they prefer halal products to other products, about 16% thought that halal food is rich in vitamins and healthy for the human body. Moreover, 12% of the respondents responded positively, and reckon that eating halal food will not be harmful to their brains, and 10% interpreted that halal food is free from bacteria and harmful substances.

Figure 2: Criteria for choosing Halal Foods



It is noticeable that 6% of people consider halal products to have enough vitamins omega-3 fat, and antioxidants and 5% thought that halal is less painful for animals, 5% thought that it’s free from growth hormones, and 5% anti-biotics free. 40% of the responders from the survey recognize that they consider halal products which only certified by the respective authority. Along with them, 21% try to find the brand tag, and 19% of customers scan their product to check whether it is halal or not. They scan through asking about the ingredient. Furthermore, 18% search for a five-digit halal registration code while buying their goods and services.

Figure 3: Verification method of Halal Products



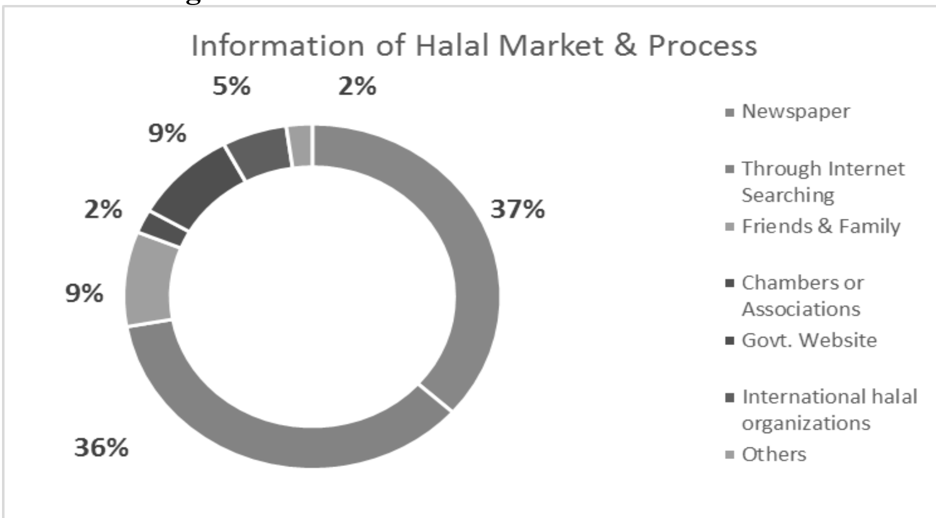
This study found that the possibility to promote consumer goods without the certificate is limited. In this case, Halal Certificates and Logos from the respective authorities can establish a local market as well as export and promote consumer goods manufactured in Bangladesh. This survey found that halal products are more expensive compared to non-halal items. The reason behind the expenses is due-diligent of producing halal items is more followed than the non-halal items. But a different view also has been identified that people thought halal items are less consider than non-halal items. Because they thought the health risk is less while using halal items which may not be in the case of non-halal items. This survey result shows that about 65% of respondents thought that halal is more expensive than normal products, while only 27% claimed halal is less costly than regular products.

This study found that in Bangladesh halal products and markets have great potential. The majority of the respondents, around 87% of them expected that halal products and markets have great potential in the local market, and it can be a revenue generation through expanding the international market. 7% of the respondents do not know about the potential of the halal market and 6% of the respondents do not think the halal market has potential in the local market other than the international market.

In response to the sufficiency of halal products in Bangladesh, a mixed response came out through the study. Almost half of the respondents (44%) considered Bangladesh as a place for the halal market is expanding, 35% of respondents think that Bangladesh has less opportunity to grow the halal market and 21% of the respondents have no idea of the halal market sufficiency but they think Bangladesh have an exportable halal market which is untapped.

Most of the responders 92% considered that being a Muslim country, Bangladesh should follow the international halal certification process while 6% had a different opinion and the rest has no idea about the halal certification process. This study found that most respondents were aware of the halal certification authority. In response to the government agency providing the Halal Certificate, 81% opined that the office that provides the halal certificate is well known to them and the rest were not aware of that organization. The majority of the participants (85%) knew how to get a Halal Certificate while others showed their ignorance about it.

Figure 4: Halal Market & Process information

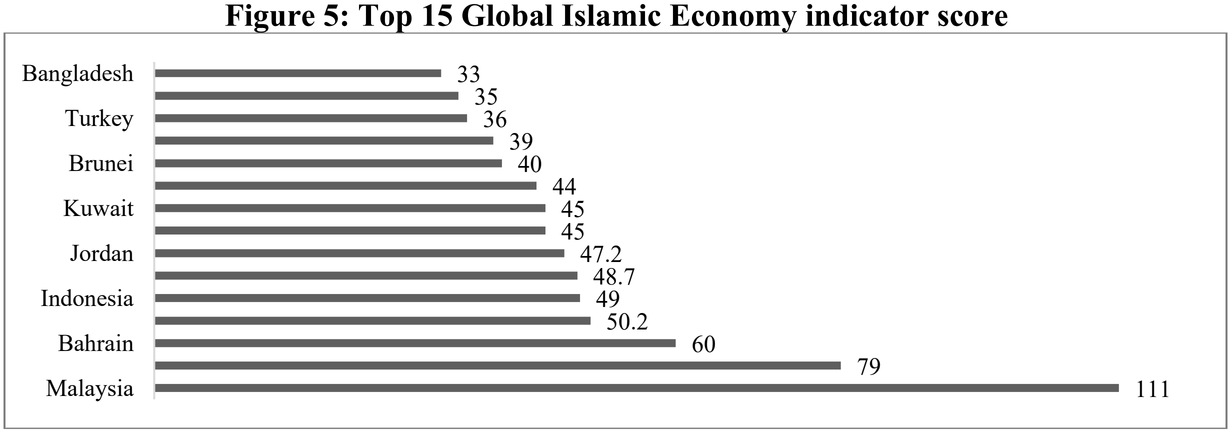


This study found that people do not get the halal market situation from the market insider other than the media. Most of the respondents, around 73% of them get halal market information from newspapers and internet browsing. People are known to halal market from their friends and family conversation which is about 9%. The government also plays a pivotal role in the dissemination of information about the halal market; about 9% depict that they found information from the government website. Furthermore, about 5% of customers gather information from the international halal organization and the rest of them said that they found information from chambers and other associations. This study found that most halal market entrepreneurs are aware of Intellectual Property Rights. Among the responders, about 71% of them were known of the Intellectual Property Rights of their products, and the rest of them were ignorant about it.

4.2 Features of Halal Industry and Position of Bangladesh

This study found that in the Global Islamic Economic index, Bangladesh ranks fifteen (15) though Bangladesh is the 3rd largest Muslim-populated country followed by Indonesia 12.7% of the world's Muslims, Pakistan 11.1%, India 10.9%, and Bangladesh 9.2%. About 20% of Muslims live in the Arab world according to the Global Islamic Economy report in 2021.

Figure 5: Top 15 Global Islamic Economy indicator score



The two most significant components of Islamic finance are banking services and the Sukuk market, which is the Islamic version of the bond market. They account for about 95% of the USD 1.8 trillion in Islamic finance assets between them. The GCC countries, which hold the great majority of assets, continue to be the most important participants. Nevertheless, the concept is also succeeding in nations like Malaysia, Indonesia, Turkey, and Pakistan.

Figure 6: Top 10 Countries of Global Islamic Finance, Halal Food and Muslim Friendly Tourism

This study found that, though Bangladesh is the 3rd largest Muslim-populated country not on the list of top 10 countries of global Islamic finance, halal food, and Muslim-friendly tourism.

Figure 7: Top 10 Countries of Global Islamic Modest fashion, media and recreation, pharm & cosmetics

The position of Bangladesh is seventh in the top ten Muslim-friendly modest fashion but not in the media and recreation, pharm & cosmetics. Malaysia is leading the global halal market and

UAE is in the second position. The other players on the list include Bahrain, Saudi Arabia, Indonesia, Oman, Jordan, Pakistan, Kuwait, Qatar, Brunei, Sudan, Turkey, Iran, and Bangladesh, respectively. Interestingly, Brazil has ranked third position in the halal Food and beverage industry. Additionally, some other non-Muslim countries have also made their positions in the top 10 list of the Global Islamic Economy report in 2021. This data shows that Bangladesh couldn't progress in most of the halal industries but in 2021 Bangladesh expanded sukuk bond facility in its financial sector. There are some other interventions and initiatives by the government and private sector has been taken place which are as follows:

4.3 Government interventions for halal products and market expansions

This study found that Bangladesh exported halal products including food and cosmetics, worth about USD 1 billion in the 2020-21 fiscal year, 70% of which went to the Middle East. Exporters have opportunities to send their domestic halal goods to the international market which is worth USD 107 billion. According to the study, Bangladeshi halal-certified food is overwhelmingly red meat, poultry, and processed poultry food products. The study reveals that the manufacturers who are seeking to export meat products are struggling with the limited certification capacity of Bangladesh which is now expanding. The study also found that only Islamic Foundation Bangladesh had been issuing halal certificates since 2007. Meanwhile, the Islamic Foundation has submitted a draft Halal Certificate Policy 2021, which will enhance the capacity of the foundation, and subsequently leads to better certification for large-scale exports.

4.4 Status of Halal certification and issuing Halal certification

A study on the status of Halal certification in Bangladesh reveals that the Islamic Foundation's Halal Certificate Division has issued certifications for 1,663 products across 140 industries, including food, pharmaceuticals, and cosmetics. The Islamic Foundation plays a central role in ensuring Halal compliance, with Shariah experts reviewing products based on lab tests. However, the Foundation lacks a full-fledged laboratory, relying on external testing until the Islamic Foundation Halal Diagnostic Laboratory was launched in 2017. It has been recommended that certification processes involve a stronger committee comprising Islamic scholars such as Muftis and Muhaddis to ensure more rigorous verification.

The Halal industry is a rapidly growing global sector, vital for both Muslim and non-Muslim markets. Despite this, the Islamic Foundation is constrained by insufficient laboratory resources, limiting its capacity to fully support the growth of the Halal industry in Bangladesh. Halal certification is critical to Bangladesh's Halal economic development, with the global market for Halal products valued at over USD 3 trillion. Initially, Bangladeshi products were barred from international markets due to the lack of certification. In response, the Islamic Foundation began issuing certificates, allowing local exporters to enter the global Halal market. The Bangladesh Halal Expo in 2017 further promoted Halal-certified products internationally. Currently, 57 companies export over 30,000 Halal-certified items to markets in the Middle East, Europe, and North America.

The Bangladesh Standards and Testing Institution (BSTI), under the Ministry of Industries, joined the Halal certification process in 2022. BSTI's involvement complements its existing role in product quality certification and standardization. As a member of the Standards and Metrology Institute for Islamic Countries (SMIIC), BSTI adopted international Halal standards and began issuing Halal certificates in line with these requirements. This certification covers areas like food processing, hygiene, storage, and labeling, which are crucial for ensuring compliance with Islamic dietary laws. Although BSTI has expanded its Halal certification for food products such as beverages, jams, and milk, its capacity to certify other industries remains limited due to logistical challenges and insufficient laboratory support. For example, while BSTI conducts quality tests on a variety of food products, it lacks the resources to certify Halal fashion and other non-food items.

BSTI has established itself as a credible agency for food certification and is accredited by the Bangladesh Accreditation Board for textile testing. However, logistical constraints limit BSTI's ability to expand its Halal certification services beyond certain food items. Additionally, BSTI does not conduct independent research and relies on external labs for some certifications, which undermines its authority in certain sectors. In 2021, BSTI updated its regulations to include Halal certification for processed foods, valid for three years before requiring renewal. This move opened new opportunities for Bangladeshi exporters, particularly in the Halal food sector, by meeting international standards and boosting the country's presence in global markets.

4.5 Key Challenges related Halal Market and its certifications

The study revealed that despite Bangladesh's significant potential in the Halal food, meat, and beverage markets, the country has yet to penetrate the global market effectively. One of the major constraints is the lack of unified authority to issue Halal certificates for export. The existence of multiple Halal certification bodies, along with the lack of recognition of certificates from one country to another, adds to the complexity, increasing both costs and time for businesses. Entrepreneurs in the Halal industry is calling for government support to develop policy guidelines, including a universally recognized Halal certification that would enable Bangladesh to secure a portion of the global market. While Halal certification is essential, it alone is insufficient to make products appealing to Muslim consumers, as there are concerns about the credibility of certificates issued by Bangladeshi authorities. Furthermore, the country has not been able to fully exploit opportunities in the Middle Eastern market due to limited infrastructure. Technological know-how and financial cooperation are needed to set up joint-venture Halal certification and testing institutes. Additionally, the absence of bilateral and multilateral FTAs with Middle Eastern countries has exacerbated trade imbalances.

Traders and industry stakeholders have been urging the government to provide policy support, including universal Halal certificates, which could unlock access to international markets. The current lack of a system for issuing export health certificates restricts the export of several items, and addressing this issue could significantly boost export earnings. Other challenges include a lack of awareness about Halal issues, the inability to develop proper Halal standardization, a shortage of qualified human resources to maintain Halal standards, poor promotion of Halal products, and the absence of adequate Halal infrastructure. Moreover, the study found that the acceptance of one country’s Halal certificate by another is often problematic, adding further barriers to global trade. For meat exports, particularly, the biggest hurdles lie in compliance with disease-free cattle rearing and the strict monitoring required for pre- and post-slaughter processes.

At present, only a few companies, such as Bengal Meat, have managed to export beef products to the Middle East by meeting stringent Halal standards. However, other companies have struggled to meet these compliance and hygiene requirements, limiting their overseas sales. There is considerable potential in exporting items such as bovine omasum and cow liver to the Middle East, but the market has been undermined by black-market exporters. Additionally, manufacturers lack sufficient knowledge about Halal marketing, as there is no comprehensive study on this aspect, and many agree that Halal certification is more useful for exports than for domestic sales.

The Halal certification landscape in Bangladesh is further complicated by the presence of numerous certifying bodies, both government and private, as well as regional and international organizations like ASEAN, GSO, and SMIIC. This makes it difficult for producers to determine which certification is valid for a particular market. Furthermore, the global Halal business lacks an effective system for accrediting Halal Certification Bodies (HCBs), with most Halal food being produced in non-Muslim majority countries under the supervision of independent HCBs with minimal government oversight. Greater cooperation between these bodies is essential to avoid excessive duplication and competition.

Bangladesh's Halal food sector also faces several other challenges, including a lack of government policies, poor promotion strategies for Halal products and difficulties in securing Shariah-compliant financing. In sectors like pharmaceuticals and cosmetics, there are rising concerns about the use of synthetic biology and the need for proper Good Manufacturing Practices (GMP). Additionally, varying standards for alcohol usage and hazardous substances in cosmetics pose further obstacles. Limited funding for research and development in Halal-related topics also hinders progress in this sector. As Bangladesh looks to expand its Halal industry, addressing these challenges is critical for tapping into the lucrative global market.

4.6 Un-tapped opportunities and Way forward for Halal Products of Bangladesh

Halal certification is essential for making products attractive to Muslim consumers, but it is only a starting point. To truly penetrate the global Halal market, businesses must adopt an end-to-end supply chain perspective. The use of blockchain technology, which enhances trust through transparency from "paddock-to-plate," offers a strong solution for expanding the Halal industry. For Bangladesh to claim a greater share of the Halal food market, policies need to be developed to ensure the issuance of a high-quality, universally recognized Halal certificate. The study also highlights the untapped potential of partnering with non-OIC countries, like China, South Korea, and South Africa, which are already collaborating with OIC countries like Malaysia and the UAE to enhance their Halal capabilities.

Bangladesh, as a Muslim-majority country, has significant potential in the Halal market, but the current barriers, such as complicated advertising and export regulations, hinder its growth. Streamlining export and import laws, alongside government support, could help develop a sustainable market. Another challenge is ensuring supply chain integrity, which could be addressed by developing tracking technology to trace raw meat and food ingredients back to their source. Moreover, there is growing demand for hormone-free meat, presenting an opportunity for Halal market expansion, despite ongoing debates about the safety of hormone-treated meat.

The study also emphasizes the need for a centralized Halal authority in Bangladesh. Despite efforts by the Islamic Foundation and BSTI, the absence of such an authority has limited the country's ability to fully tap into high-demand markets like the Gulf states and Southeast Asia. Affiliation with recognized international Halal certification bodies, such as Malaysia's JAKIM, could boost credibility and market access. Furthermore, global demand for organic and natural food, particularly among younger Muslim consumers, presents an opportunity for Bangladesh to develop premium organic product lines, including Halal-certified seafood.

To fully capitalize on the Halal market, both the public and private sectors must collaborate. This includes discovering potential products, improving packaging, and conducting advertising campaigns both domestically and internationally. The development of new brands and stronger branding strategies can also help differentiate Halal products in a competitive market. Investment opportunities exist in integrating the Halal food value chain, particularly for small and fragmented businesses, which could yield strong returns for investors.

There is also significant potential for Muslim scientists and investors to lead research in the Halal industry, particularly in fields like pharmaceuticals and cosmetics. Halal cosmetics, often vegan and eco-friendly, could appeal to non-Muslim consumers as well. Moreover, addressing the issue of Halal gelatin scarcity by utilizing parts from sacrificed animals during Hajj or developing vegetable-derived substitutes could provide practical solutions.

The study further suggests the need to develop a Halal Pharmacopoeia to support the Halal pharmaceutical industry, which requires fast-tracking registration processes for pharmaceutical products within Islamic countries. This would help boost the growth of the Halal pharmaceutical industry, benefiting the Ummah. To succeed, companies must focus on sourcing and manufacturing, regulatory expertise, customer insights, and consistent investment in research and development to create innovative Halal products.

5. Conclusion and Recommendations

Bangladesh is well-positioned to expand its presence in the global halal market, leveraging its strong agricultural base and large Muslim population. However, for Bangladesh to fully realize its potential, several strategic actions are required. First and foremost, the country must enhance its halal certification system to meet international standards. The adoption of blockchain technology in the supply chain can ensure transparency, reduce the risk of fraud, and build trust among consumers and international markets. This would address the gaps in trust and compliance that currently hinder Bangladesh's halal exports and improve competitiveness globally.

In addition, establishing a national halal coordination body is essential. This institution would be responsible for regulating halal certification, ensuring consistency across the supply chain, and working with international certification bodies such as Malaysia's JAKIM. This centralized body should also promote inter-agency collaboration between the Islamic Foundation, BSTI, the Food Safety Authority, and other relevant organizations, facilitating a cohesive approach to halal governance.

Creating a skilled pool of halal experts through specialized diploma and certificate programs is also critical. Educational institutions should develop academic programs focused on halal certification, product development, and regulatory compliance. This will ensure that Bangladesh has a well-trained workforce capable of meeting the demands of a growing halal sector. The promotion and marketing of halal products should be prioritized. Both domestic and international campaigns are necessary to raise awareness of the benefits of halal products, not just among Muslim consumers but also among non-Muslim populations, particularly in sectors like halal cosmetics and pharmaceuticals. Engaging in economic diplomacy to secure halal trade agreements with key markets like the Gulf states, Southeast Asia, and Europe will further strengthen Bangladesh's global reach.

Moreover, a focus on market and product diversification is vital. Bangladesh can explore new markets such as Qatar, Oman, and Saudi Arabia for agricultural exports, including halal-certified seafood and other halal products. Encouraging investments in value chain integration, from slaughterhouses to distributors, can enhance efficiency and create a more competitive halal food industry. The government should incentivize these investments by offering tax breaks and financial support to businesses in the halal sector.

The establishment of halal economic zones within the 100 special economic zones could be a game-changer, attracting both local and foreign investments focused on halal production. These zones should prioritize food safety, standardization, and quality control, ensuring that Bangladesh's halal products meet the highest international standards. Furthermore, collaboration with OIC organs like SMIIC, SESRIC, IsDB, and ICDT is essential for building Bangladesh's halal certification capacity and ensuring its halal products are recognized globally. By working with these organizations, Bangladesh can participate in fast-track registration processes and expedite halal certification for pharmaceutical and cosmetic products.

Addressing halal research and development (R&D) is another key recommendation. Bangladesh must invest in research to create innovative halal products and services, as well as new legislative frameworks that support the evolving needs of the halal industry. This could include research into alternative halal ingredients, hormone-free meat, and the production of halal gelatin from sacrificed animals. By positioning itself at the forefront of halal R&D, Bangladesh can differentiate its halal products from competitors and create a sustainable competitive advantage.

Increasing consumer awareness about the benefits of halal products through informational campaigns and public engagement is crucial. Consumers should be informed not just about the religious aspects of halal, but also the health, safety, and ethical considerations involved in halal production. The government can play a key role in this by supporting businesses with marketing efforts and simplifying export and import regulations to facilitate trade.

Bangladesh has a remarkable opportunity to carve out a significant share in the global halal market. By addressing regulatory gaps, fostering innovation, enhancing market access, and building a robust certification framework, the country can position itself as a leading exporter of halal products, benefiting from the growing global demand and supporting its economic development. These recommendations, if implemented, can help Bangladesh unlock the full potential of its halal industry and boost its standing in both Muslim and non-Muslim markets alike.

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4IR and Bangladesh: Are We Ready?

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Abstract

The Fourth Industrial Revolution (4IR) is the era of convergence of advanced technology such as Artificial Intelligence (AI), Internet of Things (IoT), automation, blockchain which is changing the rule of the game for the global economic and social paradigms. A transition from the labor-intensive sector to a diversified and technology driven economy represents greater opportunity for Bangladesh. But it faces challenges – from a lack of digital infrastructure, skill shortages and regulatory gaps – which could hinder its ability to reap the benefits. Based on a critical analysis of Bangladesh's economy, this paper discusses the current dependence of low wage sectors like agriculture and readymade garments (RMG) industry and prospects for integration of 4IR technologies in enhancing sectoral productivity, creation of new job sectors and Human capital development. Key barriers of technological infrastructure deficits and cybersecurity risks, coupled with social inequality, could hamper efforts to reduce disparities, if not addressed with targeted interventions. The paper suggests how to tackle these challenges: by investing in digital infrastructure; educating and training the labor force; promoting public-private partnerships; and putting in place a capable regulatory framework. The utilization of the strategies stated above could help Bangladesh exceed 4IRs intricacies and pursue its sustainable and inclusive growth. It highlights the need for proactive policy making and strategic investment in order to ensure that Bangladesh remain in the race guiding towards becoming a competitive player in the global 4IR landscape.

Keywords: 4IR, Bangladesh, Labor-intensive, RMG, Artificial Intelligence.

1. Introduction

The Fourth Industrial Revolution marks a paradigm shift in which societies, industries and economies rapidly evolve as a result of fast developing innovations in technology. This isn't a revolution just like the earlier industrial revolutions fueled by mechanization, electricity, and digital computing; but therefore, it assembles some of the highest of modern technologies such as Artificial Intelligence, the Internet of Things, automation, biotechnology, and blockchain to support it. These innovations are highly efficient, smart, interconnected, and automated systems that integrate all physical, digital and biological domains in extremely efficient and creative ways and change not only the economic but also the social paradigm (Schwab, 2016). These technologies converge to provide the capability for real time data sharing, predictive analytics and autonomous decision making, any of which can meaningfully contribute to economic growth, productivity and enhanced quality of life.

But this paper argues that, while the 4IR has transformative potential for the Bangladeshi economy, realizing these gains depends on overcoming critical challenges in infrastructure, skill gaps, and regulations. The objective of the analysis is to analyse the opportunities that 4IR brings and the constraints that could limit Bangladesh's ability to capture the full benefit from 4IR. This paper provides insight into strategies, policies and investments for Bangladesh to sustain its growth in the era of transformation, by critically assessing these aspects.

The paper is organized as follows: The current situation of Bangladesh's economy is analyzed in Section II, giving the overall view of the economy, strengths and weaknesses, and the degree of technology adoption. Section III explores the potential 4IR can deliver – in terms of increasing productivity, the creation of new job sectors, improvement in infrastructure, and the development of social and human capital. In the next section, we propose that Bangladesh needs to tackle several challenges to properly implement 4IR technologies, including technological infrastructure gaps, the skills gap, and regulatory advancement. Lastly, policy recommendations including strategies for education, skill development, regulatory improvements and investment in digital infrastructure are presented in section V. Section VI summarizer key findings and present a view on Bangladesh's future in the 4IR age.

Using an exploratory and qualitative methodology based on secondary data analysis, this paper develops an understanding of the impact of the Fourth Industrial Revolution on a developing economy, such as Bangladesh. It draws on academic journals, government reports and publications (among other sources) from international organizations, including the World Economic Forum, the Asian Development Bank and the United Nations. Recent studies and industry reports on impacts of 4IR technologies in Bangladesh along with their potential impacts on key sectors of the economy like manufacturing, agriculture and information and communication technology (ICT) are analysed.

The paper considers empirical data and theoretical frameworks regarding how 4IR technologies could influence productivity, job creation, infrastructure and human capital, in order to ensure a comprehensive analysis of the possibilities. Case studies reveal potential advantages of 4IR and the difficulties for developing countries to apply such technologies. Thus, this analysis enables a detailed investigation of specific Bangladesh context vis-Ã -vis the 4IR environment with reference to pertinent comparison and discovering the best practices that would feed into policy recommendations (Schwab, 2016; United Nations Development Programme [UNDP], 2020; World Economic Forum, 2018).

This methodology is used to synthesize these insights from various sources, and provides a solid baseline for assessing both challenges and opportunities of 4IR for Bangladesh. Use of secondary data leads to customised recommendations balancing the global trends with the specific requirements and capacities of the Bangladeshi economy.

2. Bangladesh's Current Economic Landscape and Potential Opportunities of 4IR

In the past few decades, Bangladesh's economic landscape has changed dramatically from an agrarian economy to manufacturing and service sectors. While substantial progress has been made, the economy still depends heavily on low wage, labour intensive industries including readymade garments (RMG) and agriculture which represent substantial share of employment and export earnings (Asian Development Bank [ADB], 2019). However, Bangladesh needs to overcome structural challenges in its economy such as skill deficiencies, a limited digital infrastructure and dependence on other traditional economies to harness the potential in the full Fourth Industrial Revolution (4IR).

2.1 Key Sectors and Economic Contributions

Bangladesh economy is highly dependent on the *Readymade Garments sector*, providing around 80 per cent of the country's export earnings with an employment of more than four million workers where majority are women (Bangladesh Garment Manufacturers and Exporters Association [BGMEA], 2020). The architecture of this sector has played an active role in driving economic growth and poverty reduction; however, it has a tendency to adopt low labour cost and limited levels of technological innovation in the form of IoT and automation. For illustration, automation on production lines in manufacturing has the potential to increase productivity, but its uptake has been constrained in Bangladesh on account of both inabilities to afford financial outlay and fear of job dislocation (International Labour Organization [ILO] 2019).

Bangladesh is still heavily dependent on *agriculture*, employing of approximately 40 percent of the workforce and providing its food security (World Bank, 2020). Although the industry is heavily dependent on traditional farming methods, there is very little incorporation of precision agriculture and other 4IR technologies that can help increase yields, and reduce waste of resources. There have been some initial successes in digital solution introductions, notably mobile apps targeting farmers (Islam & Grönlund, 2019), but large-scale adoption of IoT and data analytics in agriculture is still in very early stages.

According to the Bangladesh Investment Development Authority (BIDA), government initiatives intend on turning Bangladesh a middle-income technology driven economy and *information and communication technology (ICT)* sector is emerging as an area of growth. The ICT sector is promising to follow a rapid growth trajectory, most evident in software development, business process outsourcing (BPO), and digital services. Though, despite this momentum, Bangladesh's ICT industry suffers from skill and infrastructure shortfalls, which reduce its international competitiveness and capacity to encourage broader economic digitalization (BIDA, 2020).

2.2 Strengths and Weaknesses of the Bangladeshi Economy

Over the last decade, Bangladesh has shown impressive economic growth (at least 6.5 percent annually) on the strength of a large young workforce and continuing urbanization (World Bank, 2020). This potential adaptability to new economic shifts, specifically the economic shifts of the 4IR (ADB, 2019), makes the economy appear strong, capable of bouncing back from global downturns due to its resilience. Consequently, this growth has largely been focused in low technology sophistication sectors that may hinder Bangladesh's transition to a 4IR driven economy.

The country's reliance on low value exports, especially from the RMG area, reflects a serious vulnerability. Due to low technological integration and limited automation, technology is only a limited constraint to productivity growth, leaving Bangladesh exposed to changes in global demand, and competition from other low-cost manufacturing hubs (ILO, 2019). Furthermore, Bangladesh's emphasis on labor intensive industries restricts its transition towards an organized economy as these industries are relatively less susceptible to disruptive 4IR technologies that could raise efficiency and add value.

2.3 Current Level of Technological Adoption and Digital Infrastructure

Although Bangladesh has made its way greatly in terms of ICT development, especially in urban areas, but the digital infrastructure of Bangladesh is not suitable to facilitate widespread 4IR adoption especially in rural areas. While penetration of Internet is around 34 percent of population, an important element of digitalization, it limits access to online resources and platforms that are essential to 4IR technologies (International Telecommunication Union [ITU], 2020). It presents a major challenge to this digital divide since a vast majority of the workforce lives in rural areas, areas that haven't tapped into technological advances to increase productivity and innovation.

In addition, the rate of digital literacy is low and a significant digital skills and technology access gap exists at all levels, especially regarding older and rural generations (Islam & Grönlund, 2019). Constraints such as these emphasize the need for investment in digital infrastructure, and in initiatives which aim to increase the digital literacy of the population. Without these foundational elements, large scale adoption of 4IR techs like IoT in agriculture or AI in urban management tends to stay limited.

Summing up, the Bangladesh economy is resilient and already on a fast track to growth; however, these dooms not escape structural and technological limitations that hindered countries from exploiting the potential impact of 4IR. This is visible in the labor-intensive industries and a digital infrastructure that is far behind international standards. For 4IR technologies to take root, therefore, policy interventions and strategic investments must create such an environment. Addressing these challenges presents the potential that Bangladesh could diversify its economic base, and improve productivity and competitiveness in an increasingly digital global economy.

3. Challenges of 4IR for Bangladesh

Bangladesh has transformative opportunities arising out of the Fourth Industrial Revolution (4IR) but to take the fullest advantages of those, it needs to overcome significant challenges. Thus, the challenges to be tackled around 4IR integration in the region cut across the infrastructural, educational, social and regulatory domains all of which are key to ensuring a sustainable and inclusive integration of 4IR technologies. If Bangladesh fails to address these hurdles, inequalities would widen, the skills gap gets bigger and Bangladesh trails far behind in the global economy.

3.1 Technological Infrastructure Gaps

The deficiency of technological infrastructure is a fundamental challenge for Bangladesh to adopt 4IR technologies. While high speed internet is a prerequisite to run advanced technologies such as IoT and artificial intelligence, it is not yet available for all, most particularly in rural and remote areas. Internet penetration in Bangladesh remains low (34 percent of the population has Internet access, International Telecommunication Union [ITU], 2020) and this approximation of digital divide limit the ability of the 4IR in transforming the nation and deprive rural communities from enjoying productivity enhancing 4IR technologies, particularly in agriculture.

Additionally, electricity reliability is also an issue as there are frequent power outages that disrupted digital operations (Rahman et al., 2020). The power inconsistencies are also a big barrier as 4IR technologies are heavily reliant on a continuous stable energy supply. While the diffusion of 4IR technologies, such as IoT and automation, could lead to large gains in efficiency in sectors like manufacturing and agriculture, Bangladesh will not be able to implement these technologies broadly unless significant investment is made in both digital and energy infrastructure.

3.2 Skills Gap and Workforce Development Needs

4IR brings fast advancing technology that requires the need for a workforce, that is skilled enough to execute complex digital and technical tasks. Though it is not very far off, Bangladesh's present educational and vocational system is not attuned to the ongoing demands of a 4IR economy. Most of the work force does not possess digital literacy and skills required for high tech jobs, especially in data science, AI and robotics (Hasan et al., 2021). According to Islam & Grönlund (2019), only 10 percent of recent graduates in the ICT sector meet the technical requirements for 4IR related roles - showcasing a vast gap in employable skills.

Furthermore, the country's education system is over weighted in theory and low on practicality when it comes to digital skills and STEM (Science, Technology, Engineering, and Mathematics) subjects. Without adequate investments in reskilling and upskilling, a mismatch in the skills of the Bangladeshi workforce and the need of a 4IR economy is around the corner. Certainly, as the WEF (2018) stipulates, there is a need to develop technical programmes on job training, increase vocational education and integrate digital literacy into school curriculum in order to have skilled workforce that would work in the future jobs.

3.3 Job Displacement and Social Inequality

Although 4IR has the potential to spur new industries and create new jobs, it presents a real threat to job displacement across low skill sectors through automation and robotics. Automation can become increasingly cost effective for industries that are heavily reliant on manual labour, for instance, RMG and agriculture may go through huge job loss. For example, the introduction of AI and robotics into manufacturing could cut demand for low skill workers—eventually eliminating those jobs and potentially causing a dislocation of the economy due to job losses (International Labor Organization [ILO], 2019).

Bangladesh is at higher risk for job displacement because of its substantial population living on labor intensive jobs for survival. Unless proactive steps are taken to create new opportunities for displaced workers as well as retrain them, 4IR could worsen social inequality and further push low skill workers to poverty. To lessen the negative effects of job displacement, the government must run social safety nets and pro-growth strategies and invest in retraining programs and in industrial areas that can offer and alternative employment (Rahman et al., 2020).

3.4 Cybersecurity Threats and Data Privacy Concerns

With the proliferation of digital connectivity of 4IR technologies, Bangladesh is exposed to the growing dangers of cybersecurity. In industries and government institutions, as they adopt IoT and AI and their data and infrastructure move into the cloud, they become more prone to data breaching, identity theft and cyber-attacks. Although Bangladesh has already experienced numerous high profile cyber incidents specifically the major cyber heist at Bangladesh Bank in 2016 that established Bangladesh’s susceptibility to sophisticated cyber threats (Bangladesh Institute of Peace and Security Studies [BIPSS], 2020).

These risks are compounded by lack of robust cybersecurity framework and insufficient awareness over data privacy issues. The protection of data privacy assumes considerable importance in an economy driven by 4IR, where generation of huge amounts of personal and sensitive data becomes commonplace. In today's scenario, Bangladesh has no comprehensive data protection laws which positions both these entities [individuals and businesses] at greater exposed risks of the data and unauthorized access (Chowdhury, 2021). Building up cybersecurity infrastructure, and raising awareness of data privacy is a beginning; encouraging the creation of regulatory measures is one step later.

5. Regulatory and Policy Challenges

The specific difficulties of 4IR have not been adequately addressed by Bangladesh's current regulatory framework. The fast-paced evolution of technology makes it all the more important to have legislation that can adapt to new developments while also standing firm on fundamental concerns like data privacy, IP rights, and the ethical quandaries that arise from using AI. Despite the fact that the regulations of the 4IR driven economy are different from what Bangladesh is now implementing (Mazumdar & Alharahsheh, 2019).

Furthermore, policy execution is hindered by bureaucratic inefficiencies and a lack of cooperation across government institutions. Consider the information and communication technology (ICT) and biotechnology sectors, where a lack of adequate regulation on data ownership and intellectual property stifles innovation (BIPSS, 2020). In order to make the most of 4IR, Bangladesh needs a legislative framework that looks to the future and takes into account not only technological progress but also ethical discussions, data protection, and IP rights.

6. Ethical and Societal Implications

AI, automation, and other Fourth Industrial Revolution technologies are being deployed with transparency and accountability, addressing the ethical challenges associated with these deployments. AI algorithms may perpetuate biases present in historical data, leading to biassed practices in hiring, credit distribution, and law enforcement (United Nations Development Programme [UNDP], 2020). Bangladesh, as a developing nation with basic regulatory norms for AI transparency and accountability, encounters a distinct array of ethical challenges associated with this technology.

Moreover, Fourth Industrial Revolution technology may engender social repercussions that result in novel types of inequality. If not managed appropriately, the advantages of the Fourth Industrial Revolution may disproportionately benefit individuals in higher income and metropolitan areas, hence exacerbating the disadvantages faced by rural and marginalised groups (Hasan et al., 2021). Policies that promote equal access to Fourth Industrial Revolution technology and govern the ethical application of AI and automation will be essential to guarantee that the benefits of the Fourth Industrial Revolution are distributed across all segments of society.

7. Financial Constraints and Investment Needs

The implementation costs of Fourth Industrial Revolution technologies, such as AI, robots, and IoT, are substantial, posing financial obstacles for both the public and commercial sectors in Bangladesh. In Bangladesh, small and medium firms represent a significant portion of the economy; however, constrained capital investments hinder their ability to compete in the Fourth Industrial Revolution-driven market (Bangladesh Institute of Development Studies [BIDS], 2019).

Moreover, insufficient public support for technological infrastructure and research and development hinders the nation's adoption of the Fourth Industrial Revolution. To surmount these financial limitations, Bangladesh must attract international investment, collaborate with the business sector, and explore novel financing options that promote innovation and technical advancement. For example, incentives for the adoption of the Fourth Industrial Revolution (tax incentives, research and development grants, etc.) can encourage local enterprises to invest in Fourth Industrial Revolution capabilities (Chowdhury 2021). Without sufficient financial backing, Bangladesh would fall behind in a competitive global landscape marked by rapid technological progress.

8. Policy Recommendations

To successfully navigate the challenges and harness the opportunities of the Fourth Industrial Revolution (4IR), Bangladesh requires a comprehensive policy framework that addresses infrastructure, skills development, regulation, and inclusivity. This section outlines a set of detailed policy recommendations aimed at creating an enabling environment for 4IR while promoting sustainable and inclusive growth. These recommendations emphasize government intervention, public-private partnerships, and investment in human capital to prepare Bangladesh for a 4IR-driven economy.

8.1 Invest in Digital and Physical Infrastructure

To adopt 4IR technologies, a strong digital infrastructure (such as high speed internet and reliable reliable energy) is essential. At this time, Bangladesh has large deficits in both areas, especially in rural areas where Internet connectivity and electricity supply are not reliable (International Telecommunication Union [ITU], 2020). Money should go into laying the foundation for 4IR technologies in underserved regions, such as investments on expanding digital and energy infrastructure, where the government must give priority.

Broadband programs should be developed by the government for the benefit of rural areas to increase internet access, lower the connectivity cost, and provide the guarantee for the reliable electricity supply (Islam & Grönlund, 2019). Countries such as India have seen the use of public private partnerships (PPPs) to mobilise resources to expand rural broadband access (Ministry of Electronics and Information Technology, India, 2021). In addition, integrating renewable energy sources, for example, solar power can enhance renewable energy reliability in rural areas and less environmental impact (Rahman, Ahmed, & Chowdhury, 2020).

8.2 Strengthen Educational and Vocational Training Systems

4IR technologies are only successful when the workforce can handle the skills needed to manage complex digital and technical tasks. However, Bangladesh's current educational system is mainly focused on STEM (Science, Technology, Engineering, and Mathematics) and Digital skills where a large skill gap is found (Hasan, Hossain, & Karim, 2021). Consequently, in order to adequately equip the workforce for forthcoming obstacles, it is imperative that the education system be overhauled and vocational training be expanded.

If educational reforms are going to be made it is essential that we integrate STEM education and digital literacy into school curricula as early as we can. In the field of data science, AI, IoT and robotics, young adults are prepared for 4IR careers through the development of specialized vocational programs (World Economic Forum [WEF], 2018). Additionally, working with the private sector allows for support for on-the-job **training**, apprenticeship and internships, as proven effective in Germany as bridging the gap in skills (BMBF, 2020). Private firms can also be given incentives from the government to invest in their employees in training.

8.3 Promote Inclusive Growth and Social Safety Nets

Although 4IR will most certainly generate new employment opportunities, low-skilled sector jobs will be displaced as a result of these new jobs. This risk is particularly concerning in Bangladesh, where a significant number of workers are employed in the labour-intensive industry of ready-made garments (RMG) (International Labour Organisation [ILO], 2019). This is why policies that promote inclusive development and policies that offer assistance to displaced workers are at the forefront. In the event that automation results in technological change, the government should provide social safety nets for workers, including rehabilitation programs and unemployment benefits. Additionally, it is imperative to establish inclusive policies that provide marginalised communities, such as women and rural populations, with access to 4IR. For instance, inclusive development may be achieved through targeted financing of female tech entrepreneurs and rural upskilling programs (Rahman, et al., 2020).

8.4 Develop a Comprehensive Cybersecurity and Data Privacy Framework

Cybersecurity and data privacy concerns, however, are only going to grow as a result of the 4IR's increased connectivity and data consumption. Nevertheless, Bangladesh has experienced numerous high-profile cyber incidents, necessitating the implementation of robust cybersecurity policies and regulations (Bangladesh Institute of Peace and Security Studies [BIPSS], 2020). The nation's ability to trust digital systems is becoming increasingly dependent on the protection of the nation's critical infrastructure from cyber threats and the preservation of the privacy of people's data, as more and more aspects of life in the country become digitally connected. In order to establish a comprehensive cybersecurity strategy in Bangladesh, it would be necessary to establish a national cybersecurity agency, enact data protection laws, and invest in cyber security infrastructure. The European Union's General Data Protection Regulation (GDPR) has significantly increased the global standard for data protection (European Commission, 2019), and there are valuable lessons to be learnt. Once more, the implementation of cybersecurity training programs for government employees, enterprises, and educational institutions will fortify Bangladesh's digital security and ensure that educational institutions are adequately prepared to withstand cyber threats. (Chowdhury, 2021)

8.5 Update Regulatory Frameworks to Encourage Innovation and Address Ethical Concerns

To address ethical concerns, including bias in AI, transparency, and accountability, innovation necessitates a regulatory framework that is both robust and adaptable. This constrains Bangladesh's potential, particularly in a time when other nations are transitioning to fusion economies (Mazumdar & Alharahsheh, 2019). Therefore, it is crucial to update regulations to promote a digital economy and to facilitate the adoption of ethical practices in the areas of artificial intelligence and data utilisation.

The government should establish a regulatory framework that prioritises innovation, safeguards consumer rights, and promotes the ethical implementation of AI and automation. One of the most well-known examples of regulatory sandboxes is their ability to foster innovation while simultaneously mitigating risks in a controlled environment (United Nations Development Programme [UNDP], 2020). Additionally, to establish ethical guidelines for the use of 4IR technology and a data governance council to ensure accountability and transparency in the use of 4IR technologies. (World Economic Forum, 2018).

8.6 Foster Public-Private Partnerships for Innovation and R&D

Access to mobilized resources, innovation and the speed of adoption of 4IR technologies require public private partnerships (PPPs). PPPs can promote development of research and development (R&D), infrastructure, and workforce training as means to enable a collaborative ecosystem in which the public and private sectors can both win. Such as country like Singapore in which, government and industry work together on R&D in the advanced manufacturing (Economic Development Board Singapore, 2021).

To promote PPPs in technology driven sector, Bangladeshi government should provide tax incentives and co-financing opportunities for R&D projects in AI, IoT and automation. Institutions such as the Bangladesh Investment Development Authority [BIDA] (2020) also encourage government agencies to work with private companies to build innovation hubs and digital incubators to support startups in the 4IR. The partnerships can spur innovation and help on the growth of SMEs and new job creation in the emerging industries.

8.7 Expand Access to Financing and Incentives for Technology Adoption

According to the Bangladesh Institute of Development Studies (2019), one of the 4IR blockers in Bangladesh is the high cost that attracts the use of advanced technologies which only large entities can afford, which some of the small and medium enterprises (SMEs) fail to afford (Bangladesh Institute of Development Studies [BIDS], 2019). Access to finance can expand to companies including SMEs, to enable them invest in 4IR technologies and improve their competitiveness in a global market with incentives.

Second, the government should create technology funds, offer low interest loans and grant tax incentives to induce SMEs to incorporate 4IR technologies. Possible initiatives, including 'innovation vouchers or grants' for adopting new technologies and training staff could be supported for SMEs (Chowdhury, 2021). In addition, collaborating with international financial institutions to set up funding programs that will fit digital transformation funding programs for SMEs to acquire advanced technologies has been provided (ADB, 2019).

8.8 Encourage Future-Oriented Research and Sector-Specific Strategies

The 4IR technologies have different implications in different sectors of the economy among them manufacturing, agriculture and ICT. This will encourage sector specific research and future oriented studies to tailor policy measures that will optimally achieve benefits and minimise risks in each sector. Research can inform us about best practices, assess the feasibility of particular technologies, and generate evidence-based policy and implementation recommendations.

In high impact sectors like AI for agriculture, IoT for logistics or automation in RMG, the government should sponsor the research. Knowledge sharing can be improved, as well as innovation within targeted sectors, by partnering with academic institutions and industry experts

(Bangladesh Academy of Sciences, 2020). Bangladesh can develop tailor strategies to use 4IR regarding its differentiated landscape of 4IR by supporting sector specific studies.

9. Future Directions

It's likely that Bangladesh's road to 4IR economy is going to be a process of ongoing adaptation and collaboration. In this regard, future direction of the country includes promotion of an innovation culture, creation of adaptive regulatory frameworks as well as development of new areas of research including green technology and sustainable manufacturing. When Bangladesh continues to boost its digital and physical infrastructure it will be vital to monitor the uptake of 4IR, adjust policies accordingly, and invest in new technologies which will further sustainability and resilience.

Focus on Sustainable and Green Technologies: By putting emphasize on the sustainable development within the 4IR framework, Bangladesh can reduce pollution and energy consumption challenges at the expense of promoting economic growth. IoT-enabled resource monitoring and AI driven energy optimization reduces environmental impact and drive green growth (Rahman et al., 2020).

Encourage Cross-Border Collaborations and Knowledge Sharing: Partnerships with similar developing nations crossing over into 4IR challenges is something that Bangladesh can benefit and learn from. The UNDP (2020) reports that cross border collaboration in knowledge sharing, technology exchange and joint R&D initiatives can help Bangladesh overcome its 4IR hurdles with the benefit of insights and resources.

Monitor and Evaluate Policy Impact: I end with the importance of creating systems of monitoring and evaluation of the 4IR policy impact in Bangladesh to refine and adapt to these strategies. Bangladesh's 4IR policies can remain responsive to the country's changing needs through regular assessments, stakeholder feedback and flexible policy adjustment.

With a focus on future oriented strategy, following the above listed recommendations, Bangladesh can capitalize the transformative power of 4IR to attain sustainable, inclusive and resilient economic growth.

10. Conclusion

The Fourth Industrial Revolution (4IR) is a transformative paradigm of global economic and social systems that integrates technology in a distinctive manner, improving productivity and fostering sustained prosperity. In historically labour-intensive sectors like ready-made garments (RMG) and agriculture, the Fourth Industrial Revolution (4IR) presents a chance for Bangladesh to transition to a technology-driven, diversified economy. However, this transformation is encountering difficulties and requires serious evaluation. This report examines Bangladesh's economic landscape to assess the potential and limitations of the Fourth Industrial Revolution, focussing on the influence of emerging technologies and the impediments to their adoption in the country.

During the last decade, Bangladesh has exhibited great economic resilience, achieving an average GDP growth of 6.5%. The RMG sector plays a strong role in its economy by contributing 80% of export earnings, with over four million workers, most of whom are women. The agriculture also provides a continued important role in employment and food security. These sectors however, are still very much dependent on traditional methods on low skilled labour and there are very limited integrations of automation, precision technologies or data driven solutions. Emerging ICT sector, backed by "Digital Bangladesh" initiatives, holds prospects of technology adoption; however, the infrastructural and skill backdrops depress its global competitiveness.

4IR has a critical challenge of its dependence on low-cost labor-intensive industries. And while technologies such as AI, robotics, and the Internet of Things (IoT) can boost productivity and cut costs, there is strong risk of displacing a large swathe of the workforce with them. The prominence these industries enjoy within the country's economic growth shows the urgent need for Bangladesh to diversify its economic base, and implement forward looking policies to equip its industries and workforce to face technological disruption. The economic transformation of Bangladesh could be unlocked by 4IR technologies. IoT can be integrated in agriculture, enhancing the nation's resource efficiency, reduce waste and increased crop yields, thus improving on food security. In the manufacturing field, automation and robotics is the key elements in enhancing the productivity and remain competitive in the world market despite of the increasing labor cost. The ICT sector has potential as a diversifier of the economy, as well as a source of innovation in software development, business process outsourcing (BPO) and digital services. Beyond that, 4IR offers opportunities for dealing with the social challenges such as unemployment. Governance and service delivery can be improved, and corruption curbed, by the use of technologies like AI and blockchain. Digital platforms could be developed to help bridge rural – urban divides in order to fuel inclusive growth. But these benefits can only be possible in the event of sufficient infrastructure, skilled human capital and enabling regulatory frameworks.

Leveraging of the 4IR technologies pose a range of interconnected challenges to Bangladesh. Digital infrastructure, esp. in rural areas, does not yet exist. The adoption of IoT, automation and other advanced technology is handicapped by limited Internet penetration of only 34% and limited electricity reliability. In addition, expanding into the roles that digitalization can play to narrow social and gender inequality, digital divide impinges on inequalities of urban and rural populations, leaving a great deal of their workforce unconnected to the possibilities of digitalization. Finally, there's yet another critical barrier: the skills gap. Our current education and vocational training systems are not geared to meet 4IR expectations of workforce and skills and there is marginal emphasis on STEM (Science, Technology, Engineering and Mathematics) and (STEM')s practical digital skills. This ill-prepared workforce for high tech roles as things stand now without reskilling initiatives and the risk for job displacement is very high in industries where people are more, RMG and agriculture for example. Beyond techno design challenges, 4IR implementation is further complicated by regulatory and policy challenges. Bangladesh has an outdated structure of the regulatory framework not flexible enough to handle challenges like data privacy, Intellectual property rights and ethical issues in AI and Automation. From massive breaches to high profile incidents such as the Bangladesh Bank cyber heist, cybersecurity vulnerabilities permeate critical infrastructure, calling for rapid development of significant frameworks to protect data and protect our critical assets. It sets out to attend to social and ethical concerns too. Furthermore, the unfair distribution of 4IR benefits will worsen the current inequalities and force rural people and low skilled workers to the side. Additional challenges include ethical issues from AI transparency, algorithmic bias, and accountability around the fair and equitable use of technology.

This paper proposes a multi-faceted response to these challenges including strategic investment, regulatory reform and inclusive policies. To close the urban rural divide, we first require significant digital and physical investments in infrastructure, laying the groundwork for 4IR technologies. In order to achieve this, expansion of broadband access, enhancement of electricity reliability and mixing of renewable energy sources are important steps. Second, a successful education reform is necessary to equip the workforce demands of the future. School curricula should incorporate STEM education and digital literacy, as well as its vocational training, in fields as AI, IoT and robotics so the workers can have the skills in the 4IR economy. These programs are funded and implemented mainly through public-private partnerships. Thirdly, regulatory frameworks need to be adapted to data privacy, cybersecurity and ethical questions related to data protection, as well as protection of competition and avoid stifling innovation. Regulatory sandboxes can be set up, data protection laws can be written, and guidelines created to ensure ethical use of AI, all of which make a comfortable place for technological adoption. Fourth, 4IR requires social safety nets and inclusive policies to alleviate the negative consequences of job displacement and to ensure that marginalized groups reap the benefits of 4IR. In addition to retraining programs, unemployment benefits, and a targeted pot of finance aimed at female entrepreneurs particularly in rural areas, this can be promoted. Lastly, public private partnerships for innovation and R&D, providing financial incentives for technology adoption, as well as encouraging cross border collaboration can help mobilise resources and expertise to promote the adoption of technologies in Bangladesh leading to 4IR.

The opportunities that 4IR could bring are magnificent, and the burden of challenge is huge for a developing economy like Bangladesh. The extent to which the nation can access 4IR relies not only on its structural deficiencies, human capital investment, and forward-thinking policy to facilitate 4IR. Considering the risks of exacerbating inequality, job displacement and cybersecurity vulnerabilities, a balanced approach that also gives due consideration to social inclusion is needed. However, Bangladesh's road to a 4IR driven economy will not be without hurdles, and whilst long overdue, the Bangladeshi government's recent adoption of a proactive approach to promote digital transformation should allow the country to emerge as a competitive player in a digitalized global economy. This analysis illustrates the need for more proactive and inclusive policymaking that will use 4IR to contribute to sustainable development, rather than propel inequality. As the pace of technological change moves ever faster, Bangladesh must take bold action to turn challenges into opportunities and ensure it has a place in the 4IR.

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Digital Divide in Bangladesh: A Constraint in Achieving SDGs

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Abstract

The digital divide is one of the significant concerns that hinders development, especially in developing economies, such as Bangladesh in this technology-centered era. The dimensions of the digital divide limit the achievement of the Sustainable Development Goals. This paper particularly focuses on how the existing digital divide impacts SDG 4 and SDG 8 and constrains the country's overall pathways towards achieving the SDGs within the timeframe. This paper also offers directions that could address the concerns over the digital divide. Overall, the paper highlights the importance of reducing the problem of the digital divide and calls for action that needs to be taken to smooth the paths towards achieving Sustainable Development Goals in Bangladesh.

Keywords: Digital divide, digital literacy, Sustainable Development Goals, education, economic growth.

1. Introduction

In the 21st century, digital technologies have become integral to driving global development. Numerous industries, including economic growth, education, healthcare, and social advancement, are profoundly impacted by digital technologies. Information and Communication Technology (ICT) plays a vital role in driving innovation, change, and sustainable development in this era (Radovanović, Holst, Belur, Srivastava, Houngbonon, Le Quentrec, ... & Noll, 2020). These technologies have revolutionized society's operation and individuals' access to opportunities for a better life. However, these also create societal disparities due to the prevailing inequalities. For developing countries, for example, digital technologies are considered both an opportunity and a challenge. While they offer the potential for rapid socio-economic transformation, there are significant differences between those who have access to the technologies and those who have not. The digital divide among large sections of the population presents a significant obstacle.

Digital divide can be defined from several perspectives. A vast deal of researches has defined digital divide based on their research focus. For instances, some define the term as have and have-not in terms of information while others have defined from economic view of information poor or information rich (Wresch, 1996). According to Webster, this dichotomous view undermines the nuances of the digital divide (Webster, 2014). The socio-economic background and geographical disparities contribute significantly to digital divide. OECD provided the most well-structured definition of digital divide which aligns with how this paper intend to define the term. OECD defines digital divide as *the disparity in access and usage of digital technologies, primarily internet access, across various socio-economic, geographic, and demographic groups* (OECD, 2001). The digital divide can be explained from two aspects: access to the internet, digital devices, and services, and digital literacy (Sparks, 2013). While having physical access to the internet and digital devices, availing of the service might still be hard due to the lack of digital literacy. Digital literacy in that sense, possesses significant importance as the digital access to avail services. The digital divide primarily affects individuals who, due to factors such as gender, socioeconomic status, location (urban or rural), and literacy levels, are unable to access or afford technology (Hargittai & Hinnant, 2008; Radovanović, Hogan, & Lalić, 2015). Many researchers have emphasized that this divide also reflects disparities in literacy and skills (Radovanović, 2015; Warschauer, 2002).

Internet access remains essential for sustainable development, and with foundational skills, more people could effectively use technology. In the context of the fourth industrial revolution, digital literacy is increasingly vital in governmental, economic, and educational domains, empowering individuals as work and daily life become more technology-dependent. Therefore, digital literacy is key to achieving sustainable development and is essential for reducing the digital divide. Nevertheless, over four billion individuals remain without access to fundamental digital public goods, such as the internet and crucial information regarding health and education. (Radovanović, Holst, Belur, Srivastava, Houngbonon, Le Quentrec, ... & Noll, 2020).

Bangladesh, a developing country faces significant challenges to cope with the global development dynamics as the country experiences a high rate of digital illiteracy. While the country has made considerable advances in the integration of ICTs, the country still grapples with the digital divide resulting from the lack of digital education. This gap in digital competence has profound implications for the country as it hinders the achievement of several Sustainable

Development Goals (SDGs). Among the key SDGs impacted by digital illiteracy are SDG 4 (Quality Education) and SDG 8 (Decent Work and Economic Growth). Education is one of the most significant areas in which digital illiteracy acts as a barrier to development. SDG 4 seeks to provide inclusive and equitable education and encourage opportunities for lifelong learning for everyone. Full and productive employment, decent work for all, and sustained, inclusive, and sustainable economic growth are the main objectives of SDG 8.

In this article, the focus is on these goals as these are intrinsically linked to the idea of inclusive growth and equal access to opportunities. Without digital literacy, individuals and communities cannot fully engage with modern educational tools, economic opportunities, or social platforms that drive progress. The failure to address the digital divide in Bangladesh undermines efforts to meet these SDGs and perpetuates cycles of poverty, inequality, and underdevelopment. This paper aims to explore how the lack of digital literacy hinders the country's path towards achieving sustainable development goals 4 and 8. Additionally, it emphasizes the need to focus on the digital divide to smooth the path towards achieving sustainable development goals.

The paper first provides an overview of the selected 2 SDGs followed by the current status of Bangladesh in terms of the digital divide and then provides a brief explanation of how the digital divide impacts achieving the SDGs. The paper concludes with the recommendations needed to tackle the digital divide problem in Bangladesh.

2. Overview of SDG 4 and SDG 8

In this technological-centered era, the achievement of the Sustainable Development Goals is widely driven by the sharing of knowledge and information. The United Nations (UN) also advocates for inclusive societies where all, regardless of socio-economic background and demography, have access to ICTs (Alam, & Forhad, 2023). Sustainable learning, in this context, involves educational strategies that support dynamic, lifelong learning by fostering knowledge creation and exchange within communities. Access to technology enables broader learning opportunities and helps bridge significant educational gaps, promoting a more sustainable and equitable educational system where everyone can benefit.

To achieve sustainability collectively, all the targets need to be met which makes achieving SDG goal 4 a critical step. As technology has become fundamental in modern life, incorporating technology into education has becomes essential. Consequently, ensuring equal access to education and substantial access to technology has also become crucial for overcoming educational inequality. Recognizing this, digital literacy is a crucial element in the Sustainable Development Goals (SDGs), with Target 4.4 focusing on increasing the proportion of youth and adults equipped with essential technical and vocational skills for decent employment. As part of Goal 4, indicator 4.4.2 calls for countries to monitor "the percentage of youth and adults who have attained at least a basic level of digital literacy (Shadat, Islam, Zahan, & Matin, 2020). As much as access to the internet and digital literacy is crucial for quality education, the role of these bears no less importance in economic growth. The economic impact of digital technology is growing rapidly. In 2014, the sector generated $2.8 trillion in global GDP, surpassing the value of traditionally traded goods; by 2025 it is expected to reach $11 trillion (Ingram, 2021). In developing countries like Bangladesh, Information and Communication Technologies (ICTs) play a pivotal role in the economy, significantly contributing to poverty alleviation, generating employment opportunities, and fostering growth in other sectors of the country (Babar, 2017).

Table 1: Source-Department of Economic and Social Affairs of Sustainable Development, United Nations

Serial	Sub goal
4.1	Ensuring free, inclusive, and quality primary and secondary education for all.
4.2	Providing high-quality early childhood education and pre-primary care to prepare children for primary school.
4.3	Guarantying access to affordable, quality technical, vocational, and higher education, including university.
4.4	Increasing youth and adult skills for employment, decent work, and entrepreneurship.
4.5	Removing gender disparities and ensure equitable access to education and vocational training for vulnerable groups.
4.6	Achieve literacy and numeracy for all youth and a significant portion of adults.
4.7	Equipping all learners with skills for sustainable development, covering human rights, gender equality, peace, and cultural appreciation.
4.7 a	Developing safe, inclusive, and accessible learning facilities that are child-, disability-, and gender-friendly.
4.7b	Expanding global scholarships for students from developing nations, particularly LDCs, small island states, and African countries.
4.7c	Increase the number of qualified teachers in developing nations through international teacher training programs.

SDG goal 8.2 specifically focuses on technological advancement, innovation, and enhancing the productivity of the high-value-added sectors. This underscores the importance of digital literacy in driving economic growth supported by technological progress. Proficiency in digital skills is a key factor in enhancing productivity, which directly contributes to economic development. By equipping individuals with the technological expertise needed to perform efficiently in the modern economy, digital literacy enables countries to harness the potential of technology for GDP growth. The direct effect of technological skills falls on the GDP. Therefore, digital literacy contributes to achieving SDG goal 8 which plays a crucial part in a country's overall sustainable development plan.

Sustainable Development Report 2023 shows that while Bangladesh has shown moderate progress in some Sustainable Development Goals (SDGs), it faces considerable obstacles in fully achieving them. There has been no noticeable advancement in SDG 5, SDG 8, SDG 11, and raising serious concerns about meeting these targets by 2030. While SDG 4 and SDG 12 are currently on track, there are still notable challenges regarding universal education, skill development, and maintaining education quality in Bangladesh. The digital divide also contributes to these challenges (Sachs, Lafortune, Fuller, & Drumm, 2023).

3. Current Status of Bangladesh in terms of Digital Divide

As Bangladesh is yet to fulfill its commitment to Digital Bangladesh Vision 2021, the country has set Vision 2041 as a continuation (Bangladesh Planning Commission, 2020). One of the major aspects of the country's strategy to fulfill this vision is a 'leave no one behind' approach to ensure that the benefits of digitalization reach all tiers of society irrespective of other socio-economic and geographic factors (Bangladesh Planning Commission, 2020). However, as there is still a persistent inequality in urban and rural areas of Bangladesh in terms of income and wealth accumulation and consumption, it has contributed to creating an apparent digital divide between these areas (Siddiquee & Islam, 2020). This division is a pressing challenge in achieving sustainable development goals, especially in attaining quality education for all and ensuring economic growth as it significantly narrows down the opportunities to take advantage of the benefits of digitalization.

Table 2: Source-Department of Economic and Social Affairs of Sustainable Development, United Nations

Serial	Goals
8.1	Supporting per capita economic growth with a 7% annual GDP target for least developed countries
8.2	Boosting productivity through diversification, technology, and innovation, focusing on high-value and labor-intensive sectors.
8.3	Promoting policies for job creation, entrepreneurship, and the growth of micro-, small-, and medium-sized enterprises, with better access to financial services.
8.4	Improving resource efficiency and decouple economic growth from environmental harm, following sustainable consumption and production frameworks.
8.5	Ensuring full employment and equal pay for all, including youth, women, and individuals with disabilities.
8.6	Reducing the proportion of youth not in employment, education, or training.
8.7	Eliminating forced labor, modern slavery, and child labor, aiming to end child labor by 2025.
8.8	Protecting labor rights and ensure safe working conditions, especially for migrants and women workers.
8.9	Developing sustainable tourism to create jobs and promote local culture and products.
8.10	Strengthening financial institutions to improve access to banking, insurance, and financial services for all.
8a	Increasing Aid for Trade support for developing countries, particularly least developed ones.
8b	Implementing a global youth employment strategy and adopt the ILO's Global Jobs Pact

According to the World Bank, 45% of individuals had internet access in 2023 in Bangladesh. The rate is significantly lower for women, as only 37.3% of the female population had internet access (World Bank). There is also a sharp difference between urban and rural areas of the country in terms of internet access. According to a report published in 2022 by Bangladesh Bureau of Statistics (BBS), 29.7% of rural households have internet access whereas the rate is 63.4% for the urban areas (Bangladesh Bureau of Statistics, 2023). The gap is also significant at second-level digital divides across various groups, which also contributes to marginalizing the groups with limited ICT knowledge (Siddiquee & Islam, 2020). Therefore, it is evident that there is significant inconsistency in different levels of society in leveraging the advantages of digitalization to meet sustainable development goals.

To understand the current status of the digital divide, it is important to analyze the four key areas of the vision of digital Bangladesh. These are the development of human resources, connection among the citizens, E-Government, and ICT in Business.

Human Resource Development: The focus on the development of human resources is on enhancing digital skills and incorporating ICT in education. There is a significant lack of digital resources in remote areas even though multimedia-based classrooms and e-learning platforms are emerging. The devastating impact of the digital divide in the education sector came to light particularly during and post-COVID-19 years. According to the National Survey on Children's Education in Bangladesh 2021, only 18.7% of the students could participate in various remote learning initiatives (Bangladesh Bureau of Statistics, 2023). The same report reveals that 39.9% of students had no supportive device to access distance learning initiatives (Bangladesh Bureau of Statistics, 2023).

Therefore, it is evident that, during COVID-19 and the following years, students with limited access to facilities like the internet or television or any kind of digital devices, who already belong to marginalized groups, faced the most adverse impact of the pandemic-induced stagnation in education. There are also challenges of limited ICT skills among teachers. Higher education institutions are increasingly offering computer literacy and engineering courses, but access is primarily concentrated in urban areas, leaving rural communities behind (Sabur, 2019).

Connecting Citizens: The central focus is on ensuring digital access for all and expanding optical fiber networks and mobile phone-based services for agriculture, health, and legal issues. Sabur's research shows that high mobile phone adoption (90%), with 61% using smartphones, yet only 55% of smartphone users access the internet, primarily for social media, not broader internet browsing. High cost, unfamiliarity with content, and technical difficulties are significant barriers to Internet usage (Sabur, 2019).

Digital Government: To make services such as utility payments, healthcare, and education accessible online, especially to the poor and marginalized easily attainable efforts to improve e-government services have been made. Union Parishad complexes now offer multiple government services in a single location, though many are not familiar with these digital services. Currently, only 19% of users browse the internet, with most preferring social media (Sabur, 2019).

ICT in Business: Market access, ICT promotion, and the export potential of ICT services are the main goals of ICT expansion in the company. The number of freelancers is increasing; Bangladesh, which ranks second in the world, supports about 650,000 of them and makes $100 million a year. However, the digital gap prevents more people from participating in ICT firms, particularly those from underrepresented groups who lack the means and technical know-how (Sabur, 2019). Despite the previous government's 'Zero Digital Divide' campaign (Dhaka Tribune, 2023), a significant divide among different groups in terms of access to both digital facilities and devices and skills persists. Therefore, considering the present scenario and the degree of the effect of the digital divide, this paper explores the impact of it on quality education and economic growth.

4. Impacts of Digital Divide on SDG 4 and SDG 8

4.1 Digital Divide and Impact on Education

According to Dale and Newman (2005), achieving universal development requires a multidimensional strategy incorporating elements from multiple disciplines beyond the borders of conventional education. Digital literacy can effectively be used to expand access to education for a wider range of students, especially those who previously faced barriers, across various socioeconomic and cultural settings. This can foster learning and equip students with the technical abilities essential for numerous professions (Budhedeo, 2016).

Geographical and Socioeconomic Disparities: The digital inequality in Bangladesh in terms of education puts a disproportionate burden on the students based on their geographical as well as socio-economic background. The COVID-19 pandemic exposed the significant gap in digital access and skills in Bangladesh. In the presence of the digital divide, the students of the country are not only derived on an international scale but also within themselves. A pointed out several factors that create a digital divide among students such as High Costs and Reliance on Mobile Data, Rural Network Infrastructure Deficiencies, Disparities Based on Geographic Location and Socioeconomic Status, and Increased Digital Distraction (Badiuzzaman, Rafiquzzaman, Rabby, & Rahman, 2021).

High Costs and Limited Network Infrastructure: The students in urban areas might have had access to digital tools such as laptops and smartphones, however, the students in rural or low-income areas lacked the necessary devices or internet connectivity. Furthermore, having access to digital tools did not ensure effective uses of the service as significant number of them faced challenges in navigating online platforms due to a lack of digital skills. This heavily interrupted education, particularly for marginalized students.

Challenges for Teachers and Institutions: The barriers caused by digital illiteracy also extend to teachers and educational institutions. A study by Fernando and Jain shows that teachers' lack of digital skills has hampered the quality of education and limited effective student engagement in the virtual classroom (Fernando, & Jain, 2022). The teachers struggle to incorporate technology into their teaching methods without adequate digital skills. It reduces the effectiveness of modern educational tools. Without proper digital literacy training for teachers, the problem exacerbates, as they remain underprepared to engage students in e-learning.

SDG 4 promotes equitable and inclusive quality education for all. The progress of achieving the SGD 4 becomes slow when a significant number of students are subjected to the digital divide. Without addressing the digital divide, achieving quality education for all and, by extension, other SDGs, remains a significant challenge. Therefore, to achieve SDG 4, Bangladesh must address digital illiteracy by investing in digital skills education for both students and teachers, ensuring equitable access to technology and learning resources.

4.2 Digital Divide and Impact on Economic Growth

Technology is an integral part of achieving economic growth. However, as mentioned digital divide creates an obstacle to economic advancement specially in the context of developing countries. Inadequate internet connectivity, low levels of digital literacy, and limited financial access in rural and underprivileged groups are some of the infrastructure issues that hinder Bangladesh's digital economy.

Rural-Urban Disparities: While digital adoption in urban centers has fostered job creation and efficiency in sectors like e-commerce, fintech, and remote work, rural areas, and low-income groups remain largely disconnected (Mani, 2024). For instance, while urban residents may benefit from online banking, mobile payments, and remote employment opportunities, individuals in rural regions struggle to access these benefits due to both inadequate internet services and the lack of devices or financial literacy needed to navigate them.

Inadequate Connectivity and Digital Access: Despite substantial advancements in technology and growing internet use, a significant portion of the population still lacks the digital skills necessary to fully participate in and benefit from the digital economy (Zhu, 2023). In rural areas with limited access to education and internet resources, the digital divide is particularly pronounced. Teaching digital literacy is challenging within an outdated and under-resourced education system, and there is a shortage of qualified educators to provide this training (Bhuiyan, 2024).

Economic Barriers: Economic barriers further compound the problem, as many individuals and families cannot afford the devices or internet access necessary for digital learning. For low-income households, purchasing smartphones, computers, or reliable internet connections remains an unrealistic expense, severely limiting access to digital tools (Mani, 2024). This economic barrier prevents many from gaining exposure to and proficiency in technology, widening the digital divide.

Addressing the digital divide is critical for realizing the Sustainable Development Goals, particularly SDG 4 and SDG 8. The disparities in digital access and literacy hinder equitable education limit economic opportunities, and create barriers to inclusive growth and sustainable development. Therefore, in order to achieve the SDG targets within the timeframe, focusing on the digital divide should be one of the fundamental concerns.

5. Future Directions

To effectively address the digital divide and accelerate progress towards achieving the SDGs in Bangladesh, it is essential to implement a comprehensive strategy that targets both digital access and digital literacy. The following discussion focuses on the strategies that should be undertaken immediately-

Access to Internet and digital devices: The government and relevant stakeholders must ensure that uninterrupted Internet connectivity, affordable digital devices, and essential services are accessible to all, especially in rural and underserved areas. The cheap rate of internet should be introduced to bridge the gap between the socio-economic disparities. The digital tools essential for availing the services should also be affordable for those who lag behind. The first priority in reducing the digital divide, therefore, should be on ensuring access to essential digital services.

Digital Literacy Programs: Robust digital literacy programs should be introduced across the country, regardless the geographical location and socio-economic background for inclusive education that accommodates all. The students, teachers, professionals, and the general people should be incorporated into these training programs to build a digitally literate workforce. By investing in digital skills education and infrastructure, Bangladesh can overcome the barriers posed by the digital divide, and foster greater inclusion that enable citizens to fully participate in the digital economy. This will ultimately create a more equitable society, enhance economic growth, and contribute significantly to the realization of the Sustainable Development Goals.

Expanding inclusion of ICT in the curriculum: The government has already introduced the ICT in national curriculum. However, the effectiveness of this remains skeptical as a significant number of students lack the required digital skills. Therefore, the implementation of the curriculum is crucial to increase the digital skills among the students. In order to do that, the infrastructural development must become a priority. Without the proper digital infrastructure, educational institutions cannot ensure the effectiveness of the curriculum. The schools must be heavily equipped with digital devices along with highly trained teachers to ensure that the students benefit from the curriculum.

6. Conclusion

The paper underscores that the prevailing digital divide in Bangladesh contributes to delaying the path of achieving the SDGs. It also points out the nuances of the digital divide that impact the education sector and economic growth of the country. It highlights that without addressing the digital divide, the efforts to achieve sustainable growth would not be effective much. The country therefore must focus on reducing the existing gap of digital divide. The dual focus on access to uninterrupted internet, digital devices, and services along with digital literacy should be taken into consideration. The government, therefore, must focus across the country to ensure the inclusion of all regardless the gender, socio-economic background, and geographical location to solve the digital divide and smooth the pathways towards achieving Sustainable Development Goals.

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ORIGINAL RESEARCH ARTICLE

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Impact of withdrawal of cash incentive as export subsidy on export earning in Bangladesh upon LDC graduation

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Keywords: Cash Incentive, export Subsidy, export Earning, LDC graduation, FTA.

Abstract

Bangladesh is poised to graduate into a developing economy later in 2026 according to the UN declaration as all criteria were met. However, the new economic environment will bring up new challenges, especially for export-oriented industries. Our critical economic catalyst export will encounter facility loss, business loss and tariff hike above all local fiscal benefits which solidified our export business like cash incentive and lowered tax rate and benefits. This study aimed to analyse whether major export friendly factor incentives can reduce and cut export earnings or now with negative impacts. Above all, how graduating and developing economies coped and offset export loss while they graduated. Based on primary survey data the relevance of cash incentive could not be quantitatively proved in the two variables regression test. It indicates that there is virtually no significant relationship between cash incentives and export earnings of Bangladesh. Alongside, this study also found on qualitative and quantitative assessment based on Likert scale result that Developing a business environment and reducing doing business cost are the most important alternative to cash incentive loss for sustaining export market competitiveness.

1. Introduction

Bangladesh's stride towards graduation from Least Developed Countries (LDC) is a great pride for the nation. Bangladesh is the first country to meet all the three criteria [i.e., national income per capita, human asset index (HAI), economic vulnerability index (EVI) for graduating from LDC status having some implication on economy. Upon LDC graduation of Bangladesh, many export-oriented industries of Bangladesh, the lifeline of Bangladesh economy, will face various challenges including loss of International Support Measures (ISM) and withdrawals of cash incentives. These will definitely put the export-oriented industries of Bangladesh in a little disadvantaged state. On the other hand, Duty Free Quota Free (DFQF) facilities will also be gradually phased out. Therefore, Bangladesh needs to ensure export competitiveness following her graduation in 2026. It is seen that cash incentive has become an influential factor to expedite the exports of the country. But, in the post LDC graduation time we need to ensure strategies, which will replace the existing cash incentive system and yet have the potential to sustain export potential of Bangladesh in the post LDC graduation era. It is presumed that export earnings will be lost due to the fact that our counterparts will charge higher tariffs than before. Hence, to ensure overall export competitiveness, post cash incentive regime is critical for export sustenance of the country.

After LDC graduation, we will lose some preferential treatments which we are enjoying now. This new regime won't allow us to provide export subsidies like cash incentive and tax exemption to the export of traditional and non-traditional items in export basket. Bangladesh government is supporting export growth through cash incentive/export subsidies based on realized export proceeds. Approximately 42 items, including five sub- sectors of textile goods, are currently eligible for cash incentives ranging from 2% to 20% which will not be available after graduation unless graduating LDCs are given specific consideration by members. In a word, phasing-out of preferences like cash incentive may substantially impact on our export growth. Core sectors in export basket apart from RMG, Leather, Jute goods, Pharmaceutical, Agro-processing, Light engineering, ITES may be affected. Since export earnings are instrumental for our local industrialisation and economic growth for upcoming economic transformation, we need to see whether loss of incentive and export earnings are closely associated in core 5 sectors.

The link between a financial incentive and increased exports is somewhat tenuous. Textile goods made from local yarn received a 25% cash incentive in the 1980s. Apart from RMG sector, other export items like Jute, Pharmaceuticals, Agro processing, Light-Engineering, leather goods, IT & ITES will also face the consequences of subsidy loss. To sustain our export-oriented industrialization and investment in post LDC graduation time, we need to assess the impact on export market and sustenance of export market while cash incentive will phase-out. Huge competition combined with a lack of financial incentives discourages entrepreneurs from investing in this field. For this, it is very important from the private sector perspective as well as for the national economy to determine the export loss we will face after losing this preferential treatment which may help us to make a smoother transition.

The main objective of this research is to examine the potential loss in export earnings resulting from the withdrawal of export subsidies (cash incentives) following Bangladesh's graduation from LDC status, analyzing the potential contraction of various sectors and the broader economy if this facility is discontinued, and exploring strategies adopted by other graduated countries to address similar challenges, focusing on the extent of export earnings loss and approaches to managing benefit erosion.

2. Literature review

A country attempting to retaliate against a trade partner's export subsidies by adopting its own export subsidies will only injure itself under perfect competition (Panagariya, 2003). In Bangladesh, Cash incentive facilities have been available at a 15% rate since 1986 to stimulate exports and build backward linkages (Hossain, 2019). Taxes are another problem in receiving the cash subsidies, as tax offices calculate directly as profit, and cut corporate tax on it (Hossain, 2019). The high production cost of products such as local yarn, most exporters are no longer interested in and some have even stated that they lose money after getting the Cash Incentive facility. As a result, the Cash Incentive Facility will not be able to compensate these losses (Hossain, 2019). Deriving information from national authorities, it appears that, with the exception of Bangladesh and Nepal, graduating LDCs do not have export subsidy programmes in force (Trade Impacts of LDC Graduation, 2020).

Export subsidies and their impact on the exports of different countries have been thoroughly studied by several prior researchers. A review of the prior literature suggests that there are mixed effects of fiscal incentives on export earnings of different countries. As found by one of the research studies conducted by the World Bank Group in the Nepalese context, export subsidies do not significantly affect exports (Defever et al., 2018).

However, there is a significant positive impact of such an incentive program for ensuring export diversification (Defever et al., 2018). Moreover, Panagariya (2000) implied that the export subsidies of India do not have any significant impact on its exports. It rather magnifies the cost of the already costly subsidy programs aimed at achieving export diversification. The same reality is evident in the case of Brazil (Panagariya, 2000). These findings raise questions regarding the justifications of offering export subsidies. However, the opposite of these findings is also available in several other studies. For example, another research study on Nepal found that export subsidies, when extended to selected firms for exporting countries other than India, positively influenced export (Roy, 1993).

Furthermore, dissimilarities of the impact of export subsidy among industries in the Bangladeshi context had been found by Deb & Bairagi (2009). They found that cash incentives positively influenced the exports of frozen shrimp/prawn, frozen fish and vegetable products (Deb & Bairagi, 2009). They also found that the income of fish and shrimp farmers significantly magnified due to cash incentives (Deb & Bairagi, 2009).

These facts were found when the earnings of the aforesaid sectors were compared against their pre-incentive earnings. It is also important to mention here that export is not only influenced by subsidies. Other variables, such as exchange rate, relative price, export performance benefit, rate of interest, foreign income, custom duty, sales tax, excise taxes, and refunds also influence exports in the expected directions (Roy, 1993). However, studies to explore the relationship between cash incentives and export performance in the major thrust sectors of the country are still scarce. Moreover, export subsidies are considered to trade distortive. Therefore, except for a few selected developing countries and the LDCs, other countries are not allowed to offer this sort of incentive to the exporters to ensure the continuation of the free flow of goods (Hegde & Wouters, 2021). Bangladesh is poised to graduate from the LDC group of countries in 2026. Hence, cash incentives are bound to gradually phase-out. In view of the LDC graduation and the aforementioned evidence gap, it is only rationale to conduct some studies to see the impact of the loss of export subsidies on potential export earnings and for identifying viable alternatives to cash incentives in the post-LDC graduation era in which Bangladesh is soon to enter. This study fulfills both of these objectives.

3. Research Methodology:

This study is exploratory in nature, designed to gain an in-depth understanding of the effectiveness of cash incentives as export subsidies. The government introduced cash incentives with the goal of boosting the country's export earnings. However, the effectiveness of this initiative remains uncertain. Given that no cash incentives will be available in the post-LDC era, the study focused on current incentives, their role in covering business expenses, and the potential revenue loss following their withdrawal.

The report provides unique insights into the cash incentives provided to export-oriented businesses in Bangladesh. To achieve this, primary data were collected from 176 businesses across sectors including Textile & Readymade Garments, Agro-processing, Pharmaceuticals, Jute & Jute Goods, Leather & Leather Goods, IT & IT-enabled services, and Light Engineering. For qualitative data, KIIs were conducted with 3 representatives from RMG, 1 from IT, 1 from Leather, and 2 each from Agro, Pharmaceuticals, Light Engineering, and Jute sectors. A structured questionnaire was developed for the study, and relevant agencies and sector associations were approached to encourage participation. Additionally, DCCI members involved in international business were invited to participate in the survey.

A non-probability convenience sampling technique was used to select 176 samples from a population of approximately 6,146 listed goods exporters and around 400 IT & ITES service exporters (BASIS, 2017; Export Promotion Bureau, Government of Bangladesh). The choice of non-probability sampling was driven by time and resource constraints, as well as the impact of COVID-19, which limited the researchers' ability to reach randomly selected businesses. Data were collected virtually using Kobo Toolbox, and MS Excel and SPSS were used for data analysis.

This study employed mixed (both qualitative and quantitative) research approach. The first phase involved a primary survey of 176 businesses and complemented KIIs by purposive sampling that explored the challenges and potential strategies associated with the withdrawal of cash incentives/export subsidies. Respondents were asked to rank alternative support measures using a 5-point Likert scale. Their responses were analyzed to identify viable alternatives to cash incentives from the perspective of affected businesses. The findings are summarized in the 'Analysis and Findings' section of the report. The study was completed in approximately 2.5 months.

4. Analysis and Findings

A total of 176 respondents answered this question. Among them, 68.2% feel that their cash incentives will be withdrawn after LDC graduation and 31.8% said that they do not know about it.

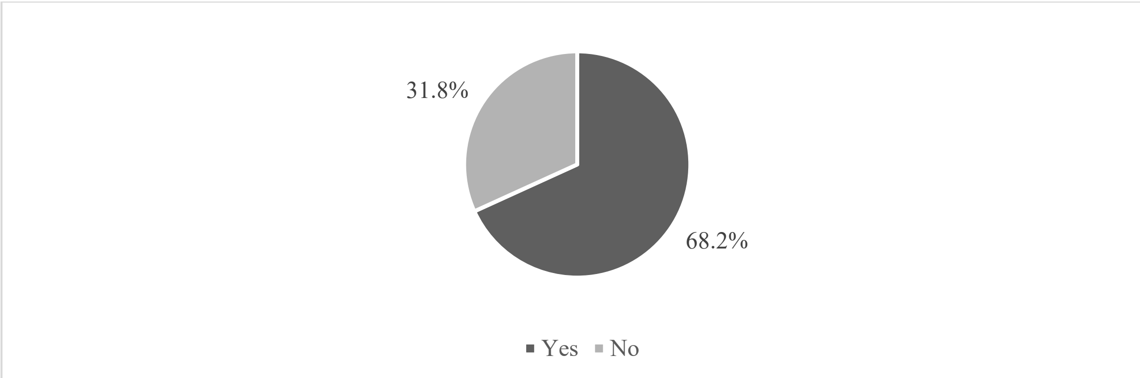

Figure 1: Perception on withdrawn cash incentive after LDC Graduation.

Source: Field Survey, 2022

Among the respondents, 27.3% are export businesses in the Leather & Leather goods sector, 22.7% are in the Textile & Readymade Garments sector, 19.3% Agro-processing sector, 11.9% Pharmaceuticals sector, 9.1% Jute & Jute Goods sector, 6.3% IT & IT enabled service sector and 3.4% Light Engineering sector.

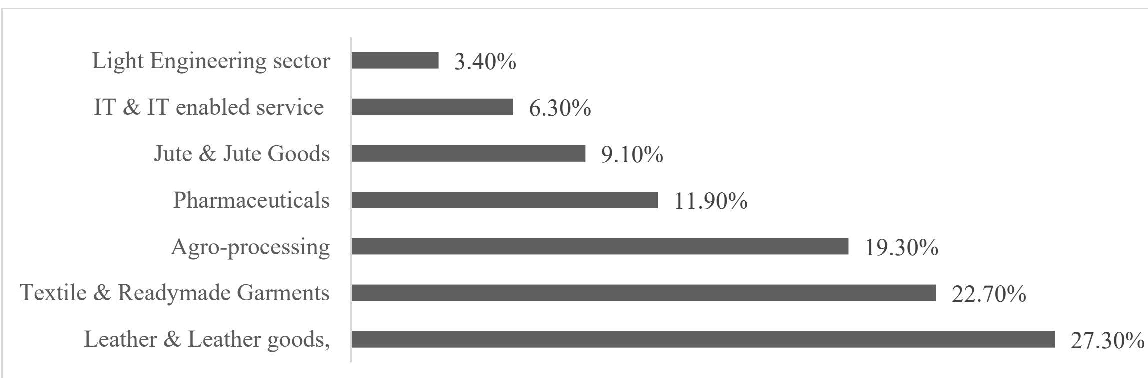

Figure 2: Export Sector of Business Operation

Source: Field Survey, 2022

Regarding total export earnings in a year (USD), respondents said that 63.1% export earnings are below 5 million, 29.5% are 5 million to 100 million, 4% are 100 million to 200 million, 1.7% are 200 million to 300 million, 1.1% is 300 million to 400 million and0.6% is 1 billion to 5 billion.

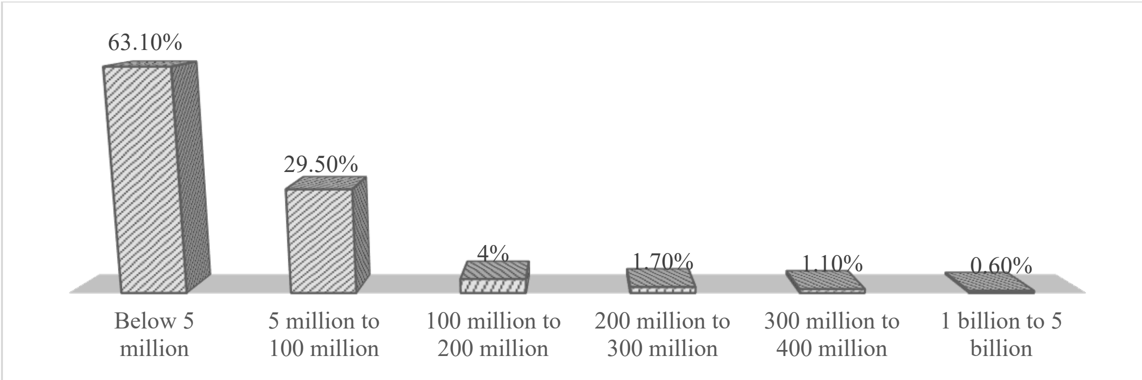

Figure 3: Total yearly export earnings (USD)

Source: Field Survey, 2022

74.4% respondents said that they are getting cash incentives against export earnings whereas 25.6% informed that they are not getting any cash incentives.

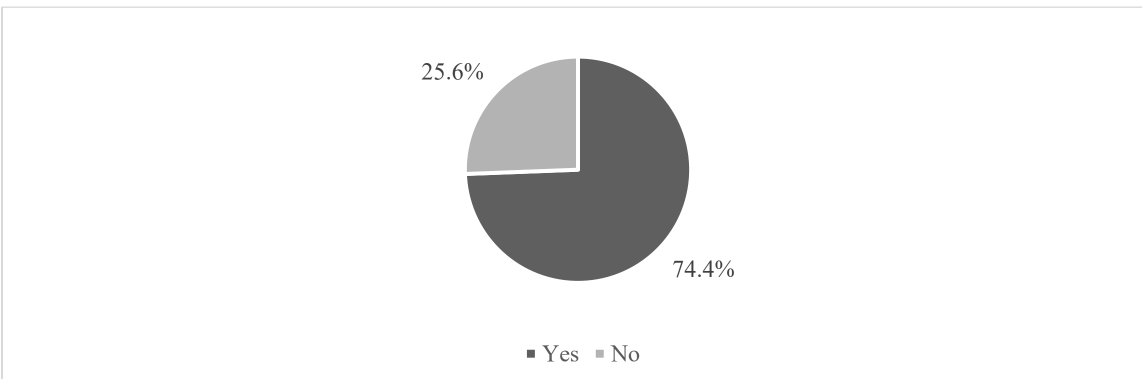

Figure 4: Getting cash incentives against export earnings

Source: Field Survey, 2022

A total of 131 respondents informed that they are getting cash incentives against export earnings. Among them 71.8% are getting cash incentives below 1 million against export earnings, 27.5% are getting 1 million to 100 million and 0.8% are getting 300 million to 400 million.

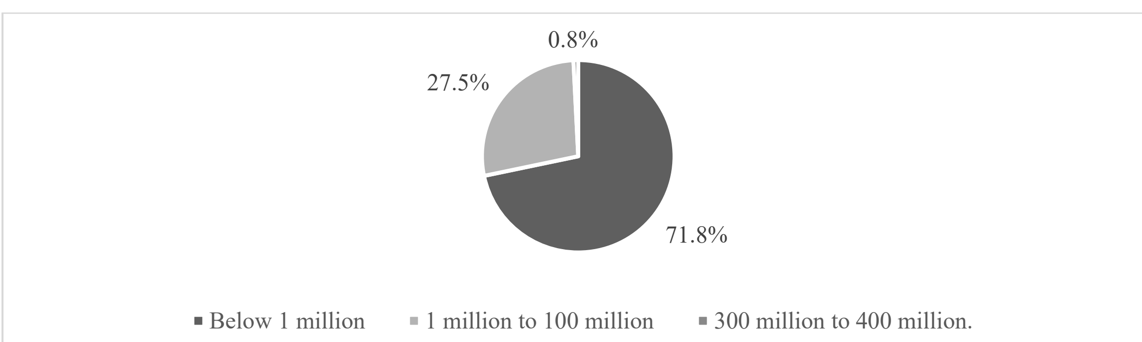

Figure 5: Getting cash incentives in a year

Source: Field Survey, 2022

In response to the need for cash incentive program for reducing the production cost, most (53.4%) of the respondents have opined that cash incentive program is reducing their production cost by 1-5%. whereas, 24.4% of the respondents have reported that it reduced by 5-10%, 5.3%, 3.8% 2.3% and 0.8% respondents have reported that their production cost reduced by 10-15%, 20-25% and 25-30% respectively. 9.9% of the respondents said that cash incentive program does not reduce their production cost at all.

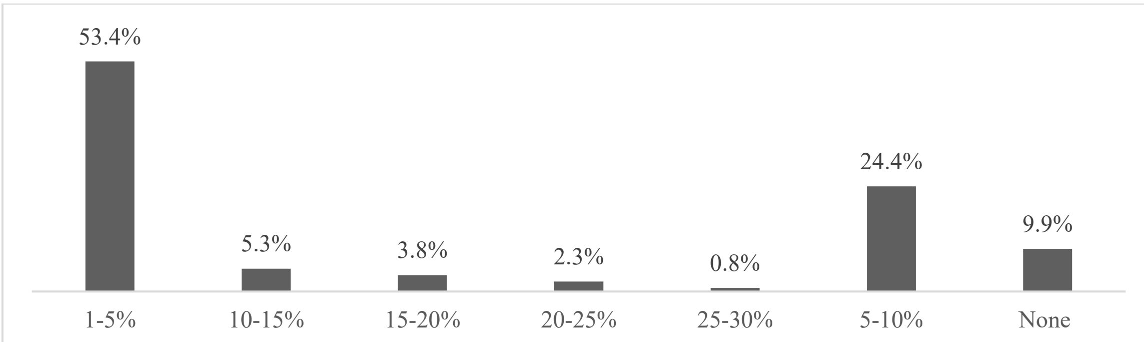

Figure 6: Percentage of production cost reduced by cash incentive programme

Source: Field Survey, 2022

Among the respondents, 57.3% stated that they export would decrease by less than $1 mn in a year. 31.3% respondents said that export would decrease by $1-5 mn. 6.9% respondent reported that it would decrease by $5-$10mn, 3.1% respondents said that export would decrease by above 20mn and 1.5% respondents said that export would decrease by less than $15-$20 mn in a year.

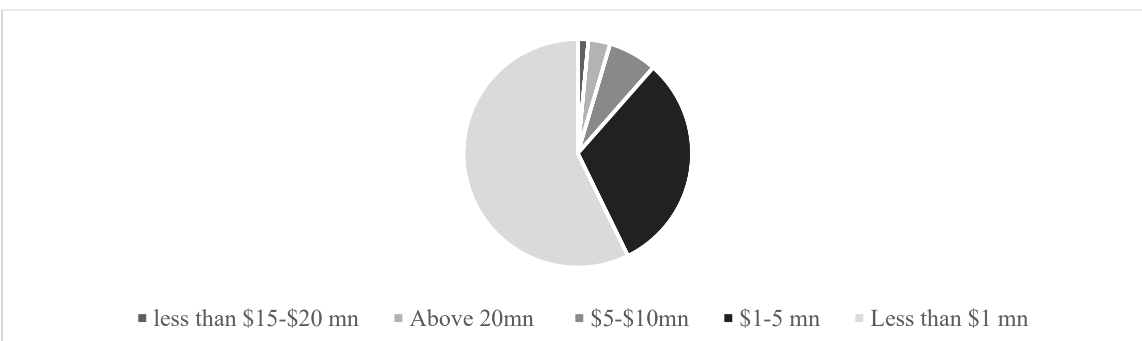

Figure 7: The decreased export earnings due to stopping the cash incentives

Source: Field Survey, 2022

Among the respondents, 87.8% stated that business will lose the competitiveness in the world export market due to withdrawn of cash incentive and 12.2% respondents said opposite view on in absence of cash incentives.

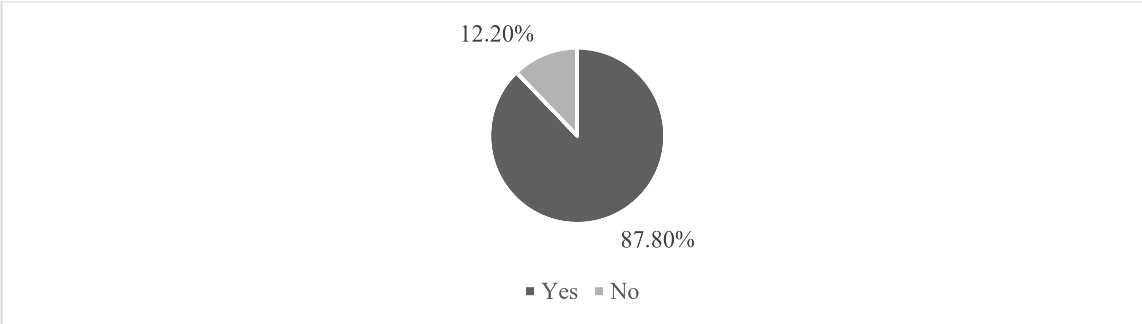

Figure 8: Competitiveness loses due to withdraw of cash incentive

Source: Field Survey, 2022

Regarding easy access to Low-cost financing from govt and developed countries including EDF Factors, 73.3% responded that Low-cost financing and others is highly important in response to the withdrawn of cash incentive. 19.8% respondents said that low-cost financing and others is important in response to the withdrawn of cash incentive. 3.1% respondents reported that it's neither important nor unimportant. 3.1% respondents said that Low-cost financing and others are unimportant and 0.8% said that it's totally unimportant.

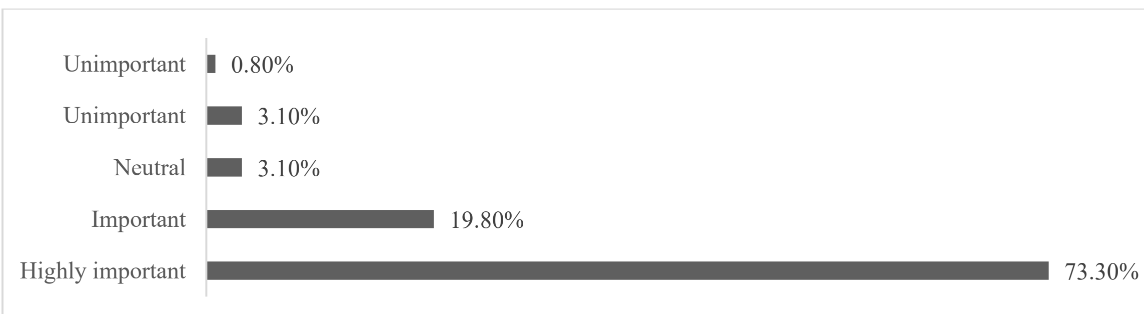

Figure 9: Easy access to low-cost financing from govt, and others

Source: Field Survey, 2022

When the respondents were asked about the level of importance of reduction of corporate tax rate and Easing Administrative Process to cash incentive as the alternative to cash incentive, most of the respondents (71.8%) opined that this is highly important. 24.4% of respondents said that this is important. 3.1% respondents were neutral about this alternative. On the other hand, only 0.8% of respondents said that this alternative is highly unimportant.

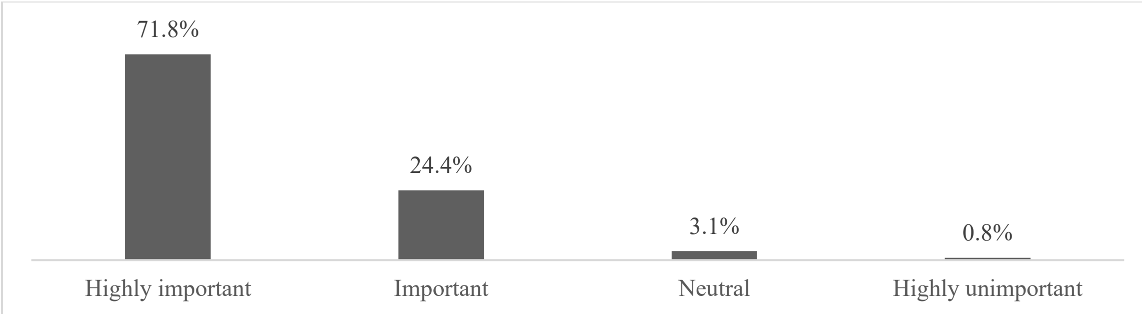

Figure 10: Reduction of corporate tax rate and easing administrative process

Source: Field Survey, 2022

As the alternative to cash incentive, easy access to Disaster Risk Management insurance from the international disaster fund is important to most of the respondents (44.3%). 32.8% of respondents opined that this is highly important. Interestingly, 10.7% of respondents said that this is unimportant. Neutral responses came from 9.2% of respondents. Another interesting finding is that 3.1% of respondents expressed their opinion that this alternative is highly unimportant to them.

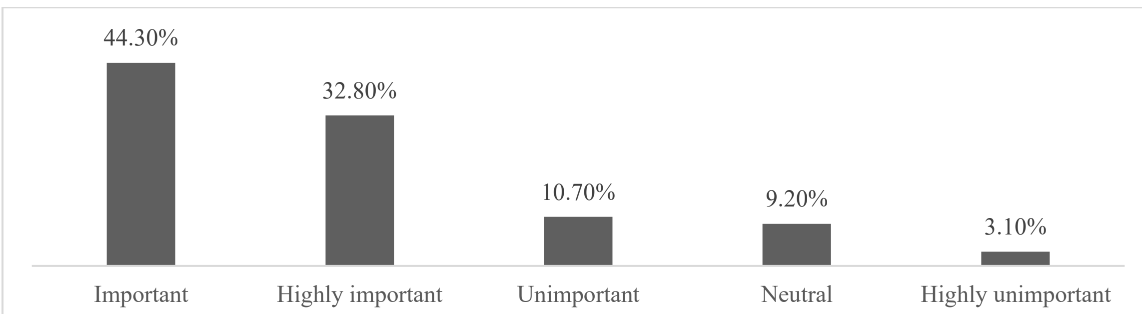

Figure 11: Easy access to disaster risk management insurance from international disaster fund

Source: Field Survey, 2022

Most of the respondents (45%) expressed their opinion that signing FTA/PTA/RTAs is highly important as the alternative to a cash incentive. On the other hand, this alternative is important to 39.7% of respondents. 10.7% of respondents were neutral about this alternative. 3.8% and 0.8% of respondents opined that this alternative is unimportant and highly unimportant respectively.

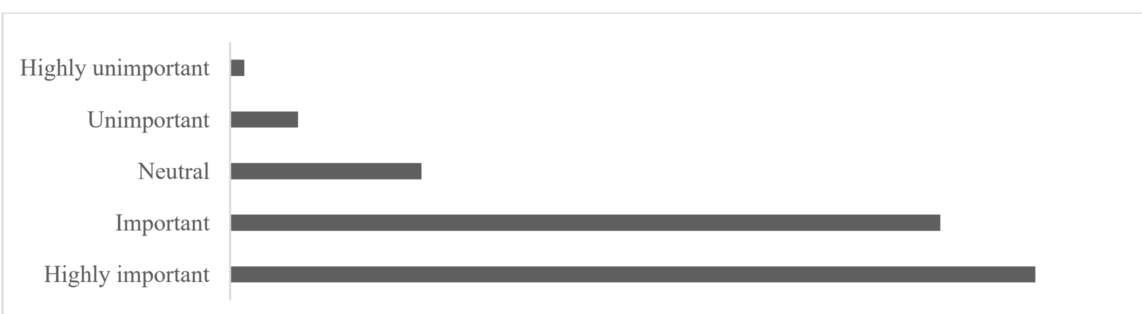

Figure 12: Signing FTA/PTA/RTAs

Source: Field Survey, 2022

Regarding Market Development Most of the respondents (75.6%) opined that this is highly important as the alternative to a cash incentive whereas, this alternative is important to 22.9% of respondents. On the other hand, 0.8% of respondents said that Market Development is highly unimportant as an alternative. Another 0.8% of respondents were neutral about this alternative.

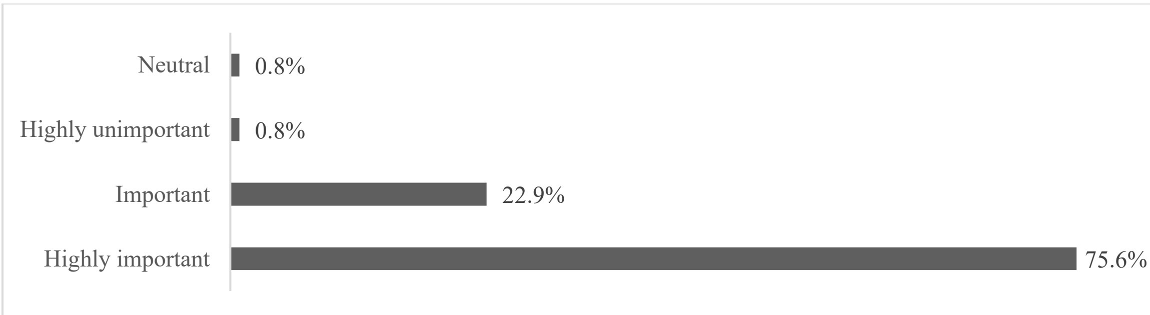

Figure 13: Market Development

Source: Field Survey, 2022

Most of the respondents (59.5%) expressed their opinion that this is a highly important alternative to a cash incentive. 38.2% of respondents said that this alternative is important. 1.5% of respondents were neutral about this alternative. Only 0.8% of respondents opined that this is a highly unimportant alternative to a cash incentive.

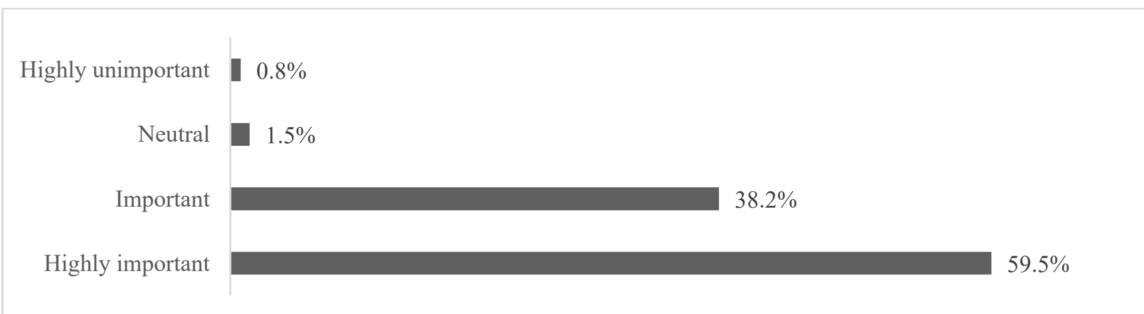

Figure 14: Supporting product diversification, Automation and quality assurance activities

Source: Field Survey, 2022

Regarding this alternative to a cash incentive, most of the respondents (47.3%) said that this is highly important. 39.7% of respondents opined that this alternative is important. Neutral responses came from 11.5% of respondents. Only 0.8% of respondents opined that this is a highly unimportant alternative to a cash incentive. On the other hand, 0.8% of respondents said that this is highly unimportant as an alternative. Another 0.8% of respondents expressed their opinion that this is unimportant.

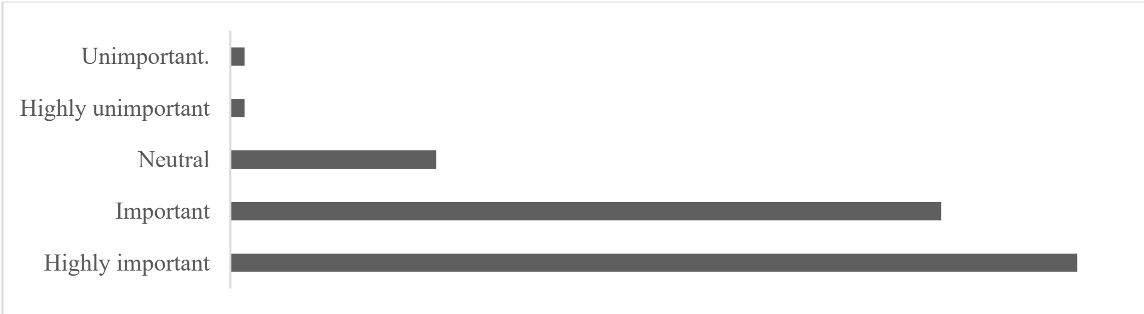

Figure 15: Strengthening backward and forward linkage Industry

Source: Field Survey, 2022

Most of the respondents (71%) opined that this is a highly important alternative to a cash incentive. 14.5% of respondents said that this alternative is important. 9.9% of respondents were neutral about this alternative. 3.8% and 0.8% responded as unimportant and highly unimportant alternatives to a cash incentive respectively.

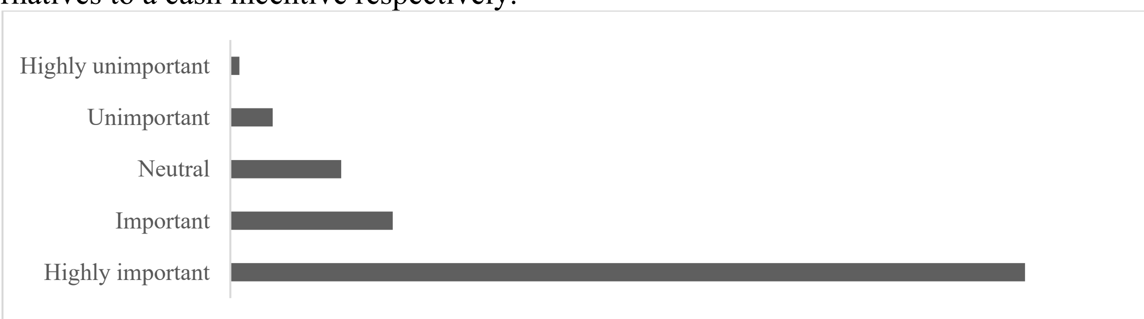

Figure 16: Developing transportation facility to connect global market

Source: Field Survey, 2022

When the respondents were asked about this alternative to a cash incentive, most of the respondents (73.3%) said that this is a highly important alternative to a cash incentive. 22.9% of respondents expressed their opinion that this alternative is important. Neutral responses came from 2.3% of respondents. Only 1.5% of respondents opined that this is highly unimportant alternative to a cash incentive.

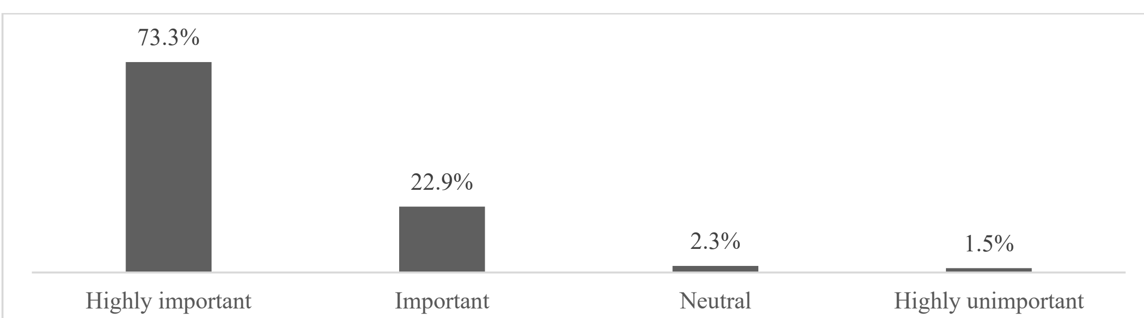

Figure 17: Capacity development assistance

Source: Field Survey, 2022

Most of the respondents (78.6%) opined that this is a highly important alternative to a cash incentive. 20.6% of respondents expressed their opinion that this alternative is important. Only 0.8% of respondents said that this is highly unimportant alternative to a cash incentive.

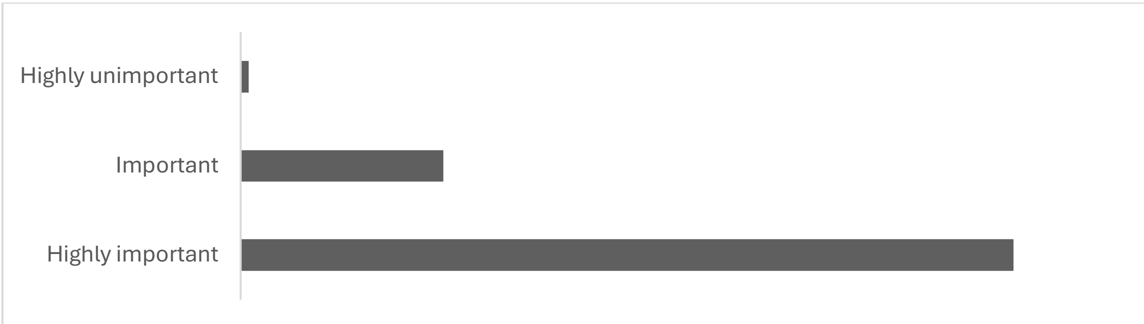

Figure 18: Developing business environment and reducing doing business cost

Source: Field Survey, 2022

One of the most important dimensions of this study is to identify the alternatives to cash incentives in the post LDC era. A list of alternatives has been given to the respondents to assess their attractiveness as viable alternatives to export subsidy. The list contains 5-point Likert Scale responses.

Findings from these responses are as follows:

Table: 1 Summary of Responses for different alternatives to cash incentives

Sl.	Variable	Obs	Mean	Sum	Std. Dev.	Min	Max	Sum of Maximum Value	Sum of Minimum Value
1	Easy access to Low-cost financing from govt, and developed countries including EDF	131	4.62	605.00	0.7591	1	5	655	131
2	Reduction of corporate tax rate and Easing Administrative Process	131	4.66	611.00	0.6153	1	5	655	131
3	Easy access to Disaster Risk Manageme	131	3.93	515.00	1.0611	1	5	655	131

	nt insurance from international disaster fund								
4	Signing FTA/PTA/RTAs	131	4.24	556.00	0.8512	1	5	655	131
5	Market Development	131	4.73	619.00	0.5554	1	5	655	131
6	Supporting product diversification, Automation and quality assurance activities	131	4.56	597.00	0.6097	1	5	655	131
7	Strengthening backward and forward linkage Industry	131	4.32	566.00	0.7673	1	5	655	131
8	Developing transportation facility to connect global market	131	4.51	591.00	0.8803	1	5	655	131
9	Capacity development assistance	131	4.66	611.00	0.6749	1	5	655	131
10	Developing business environment and reducing doing business cost	131	4.76	624.00	0.5238	1	5	655	131
	Overall			5895.00				6550	1310

Table: 2 Summary of Responses for different alternatives to DFQF facility

Issues	Highly Important (%)	Important (%)	Total (%)
Ease of doing business	78.60	20.60	99.20
Corporate tax reduction	71.80	27.40	99.20
Market development	75.60	22.90	98.50
Product diversification, automation and quality assurance	59.50	38.20	97.70
Capacity development	73.30	22.90	96.20

Easy access to low-cost financing	73.30	19.80	93.10
Backward and forward linkage	47.30	39.70	87.00
Transportation facility	71.00	14.50	85.50

As table 2 shows, “Ease of doing business” has the highest percentage in term of “Highly Important” and “Important”. In other words, among the listed alternatives, “Ease of doing business” has the highest priority among the exporters. More importantly, if Bangladesh can ensure these through relevant policies, cash incentives will not be required. It is, however, important to remember that this is not the only alternative to cash incentives. The respondents identified “Corporate tax reduction”, “Market development”, “Product diversification, automation and quality assurance”, “Capacity development”, “Easy access to low-cost financing”, “Backward and forward linkage”, “Transportation facility” as the alternatives based on their importance. However, it must be mentioned here that this study only contains information and alternatives related to the cash incentive or export subsidy policies of the Government. Individual and firm-level variables are not studied here. Therefore, the findings of the study will offer policy recommendations and guidelines for the Government, not individual businesses.

4.1. Qualitative Analysis:

On RMG and Textile, agro-processing industry, light engineering, leather and leather goods, pharmaceuticals, jute and jute goods, IT and IETS, KIIs opined different views. Major opinions from the KIIs are represented in a tabular form below:

Table:3 Major findings from KIIS

Sectors	Findings
RMG and Textile	▪ Primary concern for the RMG & Textile sectors is the taxation system. It is highly recommended that the government streamlines the taxation systems in a manner which reduces any opportunity of double or triple taxation on same earnings (for example, AIT, VAT, Turnover tax, income tax on same income) in the post-LDC graduation period. Otherwise, businesses will lose their competitiveness at the world stage. ▪ This sector is frequently held down by bureaucratic complexities and inefficiencies. These must be improved. ▪ Efficient supply chain management and resource utilization are another key area of concern. ▪ Weaknesses in contractual agreements among global commercial partners have been identified and legislative reforms are required to resolve insolvency and protect companies as well as investments. ▪ It is vital to investigate the possibilities of negotiating free trade agreements with countries those provide preferential treatments to Bangladesh. ▪ Product diversification inside RMG and textile sector along with diversification into further export industries will be vital strategies to Bangladesh’s RMG and textile sectors to continue industrial progress.

Agro-processing industry	▪ It is critical to cultivate high-value, export-ready crops through diversification. ▪ Government's extension services should be improved at the grassroot level. ▪ Plan for varied crop production and increase the commercialization of agriculture, including its sub-sectors are equally important tasks for survival in the post LDC graduation era. ▪ Developing a strategy for navigating the worldwide market for agro-processed foods. ▪ Increasing investment in research for agriculture, agricultural extension, and human resource development for promoting technology creation and growth. ▪ Making essential reforms to the export-import policies to create an export-friendly policy regime.
Light engineering	▪ A sensible taxation approach is essential for this burgeoning industry to improve even further as a promising sector. ▪ A lack of planned industrial zones and regulations for promoting its expansion is already evident. ▪ Scarcity of skilled and competitive labour force has also pushed this industry backward. ▪ Customs duties on raw materials used in LE machines are higher than ideal, and they must be reduced. ▪ Effectively assisting light engineering industry, and its backward and forward linkages would be extremely cost - efficient for the primary industries, and would also be appropriate import substitutions.
Leather and leather goods	▪ Post-LDC competition will be really fierce. ▪ The value added tax (VAT) on raw materials should be cut in half for survival. ▪ Improving port delivery, handling and processing procedure will boost this sector's potential; ▪ Deep sea port transshipment is desperately needed for export and import.
Pharmaceuticals	▪ This sector is currently one of the most advanced industries of the country. Abilities and competences of the Human resources of this sector as well as innovative ideas are critical aspects of business growth. ▪ Once the ongoing TRIPS waiver is lost, businesses must ensure TRIPS compliance, and invest more in research and innovation to ensure growth through innovation and compliance. ▪ Total originality, ever-greening, and a high level of openness are necessary to avoid bio- piracy. ▪ Port complexities for product release should be eliminated. ▪ Corporate tax should be cut in a sensible manner to retain competitiveness of this emerging sector.

Jute and Jute Goods	▪ The government should guarantee timely implementation of flexible policies and agreements in order to preserve international market access, maintain production quality, reduce costs, and maximize trade gains. ▪ Ensure equitable treatment to the Jute industries (similar to the RMG sectors) in order to keep the country's competitiveness in exporting Jute and Jute Goods once it graduates from the LDC. Branding, marketing and product promotion activities must be enhanced. It is to be remembered that the reliance of the consumers on greener products in the world market has significantly increased. Focus on product and market diversity are among the top priorities of this sector. ▪ Billion Dollar in global climate change and sustainable development pledges can be earned from this industry alone. ▪ There is a significant demand for Jute items in Asia, Africa, and North America. Bangladeshi Jute industries have the opportunity to get access to Asian and African markets. However, ensuring access to other markets require improved product quality. Survival and growth of this sector demands that product quality is improved.
IT and ITES	▪ If adequate measures are not put in place, the IT sector would lose market competitiveness upon LDC graduation. ▪ Research and development funding, with an emphasis on the information technology industry, should be introduced. ▪ A government-recognized authority for IT valuation should be established, many neighbouring countries have already done so. ▪ Appropriate education and training program should be implemented. ▪ Other businesses, such as agro-processing and light engineering, are receiving financing assistance. Easy access to Finance is also essential for the ICT industry.

4.2 Quantitative Analysis

A simple linear regression between the two variables- yearly export earnings and Cash incentive has been run. As Cash Incentives is offered against the export earnings, in our regression model, we have considered the former as dependent and the latter as the independent variable. We find that the value of Adjusted R-Square of the model is only 0.004 or 0.4%. It indicates that the model can explain only 0.4% of the variations in Cash incentives.

The unstandardized BETA is 0.015 and the standardized BETA of the model is 0.109. Constant or Coefficient is 16033984.728. The BETA of the model indicates that if Export Earning increases by 1 USD, Cash Incentive increases by 0.015 USD. However, as per the statistical standard, the P value results higher than .05 which is insignificant ($p = 0.217$). We cannot reject the Null hypothesis of the study and cannot show any relationship between cash incentive and export earnings *(Please see Tables A2 – A4 for details)*.

The relevance of cash incentives could not be quantitatively proved. It indicates that there is virtually no significant relationship between cash incentives and export earnings in Bangladesh.

Developing a business environment and reducing doing business costs has found to be the most important alternative to cash incentives or, export subsidies. All the alternatives listed in this research are important.

As far as sectoral major findings are concerned, it can be said that, RMG sector's prime concern is the taxation system. Leather sector's primary concern is the post-LDC international competition. Agriculture and processing sector's major concern is the challenge to cultivate high- value, export-ready crops through diversification. Other side scarcity of skilled and competitive labour force added with customs duty on raw materials for LE machine are major concerns for the Light Engineering sector. Loss of TRIPS waiver is one of the major challenges of the pharmaceutical industries. Lack of adequate measures to promote the interests of the IT and ITES business is a major worry for the competitiveness of firms in this sector. Lack of acceptable quality is a major concern for the Jute industry to access Asian, African and North American markets.

5. Experience of graduated Economies for export market competitiveness

Several developing countries, while graduated from LDC tag, have taken significant measures or steps for their export market competitiveness. For example, India has already concluded 37 agreements like FTA, PTA, CEPA, MOU and General Trade agreement. Merchandise Exports from India Scheme (MEIS) offers freely transferable duty credit scrips on realized FOB value of exports in free foreign exchange at a specified rate. Such duty credit scrips can be used for payment of basic custom duties for import of inputs or goods to notified markets. A new Scheme called Remission of Duties and Taxes on Exported Products (RoDTEP) has been introduced which shall refund the embedded duties suffered in export goods. Units undertaking to export their entire production of goods and services may be set up under the EOU/EHTP/STP & BTP scheme for import/procurement domestically without Duty payment. Under the Market Access Initiative (MAI) Scheme, financial assistance is provided for export promotion activities on focus country, Industry & Trade Associations, etc. The activities are like market studies, setting up showroom/warehouse, participation in international trade fairs, publicity campaigns, brand promotion, reimbursement of registration charges for pharmaceuticals, testing charges for engineering products abroad, etc. Facilities like 24X7 customs clearance, single window in customs, self-assessment of customs duty, prior filing facility of shipping bills etc. are available to facilitate exports.

Vietnam partners to 11 FTAs and Bilateral and multilateral negotiations for expanding markets of Vietnamese commodities. Organizing effective and synchronous information for activities on goods predictions of domestic and world market and information about laws, policies and business practices of these markets so that enterprises can improve their competitiveness and success in market penetration. Giving credit and capital priorities to production, agriculture, export and supporting industries. Promoting credit insurance for exporters to create favorable conditions for taking loans from credit organizations in order to increase exports. Flexibly applying monetary and foreign exchange management policies and reviewing investment policies to attract domestic and foreign investments in export production. Investing and upgrading transportation infrastructure, warehouses, and wharfs at seaports and customs clearance sites for imports and exports.

In Philippines Businesses operating in Special Economic Zones (SEZs) or free port zones are not required to pay taxes and tariffs. Philippines is a member of six regional free trade agreements (FTAs) as well as one bilateral FTA with Japan apart from being a member of the ASEAN. PEZA offers both fiscal and non-fiscal incentives as well as ready to occupy business locations, in excellent Economic zones as well as IT parks and buildings. Fiscal incentives include income tax holidays for a certain number of years, which translates to 100 percent exemption from corporate income tax and duty-free import of raw materials, capital machineries and spare parts, exemption from wharfage dues and export tax, import or related fees, zero VAT of local purchases, exemption from payment of any and all local government, fees, license, exemption from withholding tax.

Malaysia has 13 Free Industrial Zones (FIZs) and 12 Free Commercial Zones (FCZs). Companies operating in FIZs and FCZs may import raw material and equipment without tariffs. Malaysia is a partner to 7 bilateral free trade agreements (FTAs) with Australia; Chile; India; Japan; New Zealand; Pakistan; and Turkey and six regional FTAs. Malaysia is a partner to the ASEAN Trade in Goods Agreement and a member of five regional FTAs through the ASEAN with Australia, China, India, Japan and Korea. Malaysia continues to liberalize its customs regulations and improve the ease of importing and exporting out of the country.

Thailand offers the rewards of tariff-free trade with 18 different nations, including major global economies such as Australia, China, New Zealand and South Korea and ASEAN community. Thailand has signed 14 FTAs including the Regional Comprehensive Economic Partnership (RCEP). The government of Thailand has been emphasizing its digital development through its focus on the Thailand 4.0 economic model which seeks to transform Thailand into a value and innovation based digital economy through combination of promoting industrial transformation. Government develops the Eastern Economic Corridor (EEC) to become the ASEAN- leading economic zone for industrial, infrastructure and urban development prioritizing connectivity.

Based on the quantitative and qualitative findings, following recommendations can be offered Developing business environment and reducing doing business cost, Offering Capacity development assistance, Developing transportation facility to connect global market, Strengthening backward and forward linkage Industry, Supporting product diversification, Automation and quality assurance activities, Offering Market Development assistance and taking initiatives to do the same, Signing FTA/PTA/RTAs with important trade partners, Ensuring Easy access to Disaster Risk Management insurance from international disaster fund, Reduction of corporate tax rate and Easing Administrative Process, Ensuring Easy access to low-cost financing from the government and developed countries including EDF.

Beside required essential reforms to the export-import policies to promote an export-friendly policy regime, Reduction of indirect tax such as the value-added tax (VAT) on raw materials purchase, Removal of port complexities, Ensuring equitable treatment for major export industries (the sectors mentioned in the study), Emphasizing R&D funding and initiatives, Several schemes from international instances, such as Thailand’s 4.0 economic model, India’s Merchandise, Exports from India Scheme (MEIS); Market Access Initiative (MAI) Scheme of India; liberalizing customs regulations (Malaysia) and giving credit and capital priorities to production, agriculture, export and supporting industries are some of the major policy measures of other nations which can be tested in Bangladesh for promoting export earnings. It can be expected that once these recommendations are implemented, the country will be able to create and sustain competitiveness in the global export market for attaining a sizable export market share.

6. Conclusion

The main objective of this research is to find out the probable loss of export earnings upon withdrawal of Export subsidy (cash incentive) after graduation. To find out how the sectors along with the economy may shrink if we lose the facility. To learn how the other graduated countries cope with this situation.

Against of this context, it can be said that the amount of cash incentives offered to the exporter were really insignificant although secondary data shows that there is correlation between cash incentives and export earnings. However, it helped the businesses to reduce costs, maintain competitiveness and motivated them to continue exporting despite difficult competition from their international counterparts. Extraordinary economic achievement of the country brought about the pride of LDC Graduation of Bangladesh to the nation. This graduation, however, has come at a cost for the businesses. Export subsidies or cash incentives following exports are offered to Bangladeshi exporters to ensure competitiveness and sustainability of the export market of the country. LDC graduation will force the government to gradually phase out/ withdraw this benefit completely. Therefore, it is imperative that the relationship between incentives and exports is explored. Moreover, a list of alternatives to the existing export subsidy or, cash incentive system is also required to be prepared. In addition, international instances are also to be studied to summarize major policies that the recently graduated LDCs/ developing countries have adopted to make the aforementioned list of alternatives to subsidies even more extensive. This study is conducted on 176 export-oriented businesses to fulfill all of these objectives. The findings suggest that exports and subsidies are not related in Bangladeshi context. Moreover, lack of skilled manpower, inappropriate taxation system, port complexities, increased competition following LDC graduation, low/no investment in R&D, lack of enabling nosiness environment are among some of the major challenges of the country.

A list of effective alternatives including creating an enabling business environment and reduction of cost of doing business, reduction of tax (direct and indirect), signing trade agreements, removing port complexities, strengthening backward and Forward Linkage industries, initiating R&D activities, etc. is created. Moreover, a few international instances such as Merchandise Exports from India Scheme (MEIS), Market Access Initiative (MAI) Scheme, offering financial assistance for export promotion activities, promoting credit insurance for exporters, liberalized customs regulations are some of instances that Thailand has been emphasizing its digital development through its focus on the Thailand 4.0 economic model which seeks to transform Thailand into a value and innovation based digital economy. This can be lessons for Bangladesh to develop export market sustainability and competitiveness of the country.

It is, however, important to note here that post effect (Ex-post) analysis is required to verify if the perceptions of the Government and the private sectors are correct about effectiveness of the alternatives of cash incentives and if the solutions listed here are feasible to be applied in the country.

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Appendix

Table: A1 Thresholds

for overall scores at different levels of important		ce for (131 respondents and 10 variables)
Degree of Importance	Threshold of Scores for each variable	Threshold for all 10 variables
Highly Important	525-655	5241-6550
Important	394-524	3931-5240
Neutral	263-393	2621-3930
Unimportant	132-262	1311-2620
Highly unimportant	Below 131	Below 1310

Table: A2 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.109[a]	.012	.004	36809851.796

a. Predictors: (Constant), Question_3_New

Table: A3 ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2089891353855512.000	1	2089891353855512.000	1.542	.217[b]
	Residual	174790509409502688.000	129	1354965189220951.000		
	Total	176880400763358208.000	130			

a. Dependent Variable: Question_5_New
b. Predictors: (Constant), Question_3_New

Table: A4 Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	16033984.728	3292258.526		4.870	.000
	Question_3_New	.015	.012	.109	1.242	.217

a. Dependent Variable: Question_5_New

Question 1: Do you know that Cash incentive will be withdrawn after LDC Graduation of Bangladesh?

A5	Number	*Percent*
No	56	*31.8*
Yes	120	*68.2*
Total	*176*	*100.0*

Question 2: Which export sector does your business belong to?

A6	*Number*	*Percent*
Textile & RMG	40	*22.7*
Agro-Processing	34	*19.3*
Light Engineering	6	*3.4*
Leather & Leather goods	48	*27.3*
Pharmaceuticals	21	*11.9*
Jute & Jute Goods	16	*9.1*
IT & ITES	11	*6.3*
Total	*176*	*100.0*

Question3: What are your total yearly export earnings? (In USD)

A7	*Number*	*Percent*
Below 5 million	111	*63.1*
5 Mn to 100 Mn	52	*29.5*
100 Mn to 200 Mn	7	*4.0*
200 Mn to 300 Mn	3	*1.7*
300 Mn to 400 Mn	2	*1.1*
1 Bn to 5 Bn	1	*.6*
Total	*176*	*100.0*

Question 4: Are you getting any cash incentives against your export?

A8	*Number*	*Percent*
No	45	*25.6*
Yes	131	*74.4*
Total	*176*	*100.0*

Question 5: If yes, how much cash incentive do you get in a year (in USD)?

A9	*Number*	*Percent*
below 1 mn	94	*71.8*
1-100 mn	36	*27.5*
300-400 mn	1	*.8*
Total	*131*	*100.0*

Question 6: What percentage of production cost reduction is supported by this cash incentive program?

A10	*Number*	*Percent*
None	13	*9.9*
1%-5%	70	*53.4*
5%-10%	32	*24.4*
10%-15%	7	*5.3*
15%-20%	5	*3.8*
20%-25%	3	*2.3*
25%-30%	1	*.8*
Total	*131*	*100.0*

Question 7: How much export earnings will decrease, in a year, if the cash incentive stops (in USD)?

A11	*Number*	*Percent*
less than 1 mn	75	*57.3*
1-5 mn	41	*31.3*
5-10 mn	9	*6.9*
15-20 mn	2	*1.5*
above 20 mn	4	*3.1*
Total	*131*	*100.0*

Question 8: "If cash incentive is withdrawn, my business will lose competitiveness in the world export market". Do you agree with this statement?

A12	*Number*	*Percent*
No	16	*12.2*
Yes	115	*87.8*
Total	*131*	*100.0*

Question 9: Easy access to Low-cost financing from govt, and developed countries including EDF

A13	*Number*	*Percent*
Highly unimportant	1	*.8*
Unimportant	4	*3.1*
Neutral	4	*3.1*
Important	26	*19.8*
Highly important	96	*73.3*
Total	*131*	*100.0*

Question 9: Reduction of corporate tax rate and Easing Administrative Process

A14	*Number*	*Percent*
Highly unimportant	1	*.8*
Neutral	4	*3.1*
Important	32	*24.4*
Highly important	94	*71.8*
Total	*131*	*100.0*

Question 9: Easy access to Disaster Risk Management insurance from international disaster fund

A15	*Number*	*Percent*
Highly unimportant	4	*3.1*
Unimportant	14	*10.7*
Neutral	12	*9.2*
Important	58	*44.3*
Highly important	43	*32.8*
Total	*131*	*100.0*

Question 9: Signing FTA/PTA/RTAs

A16	*Number*	*Percent*
Highly unimportant	1	*.8*
Unimportant	5	*3.8*
Neutral	14	*10.7*
Important	52	*39.7*
Highly important	59	*45.0*
Total	*131*	*100.0*

Question 9: Market Development

A17	*Number*	*Percent*
Highly unimportant	1	*.8*
Neutral	1	*.8*
Important	30	*22.9*
Highly important	99	*75.6*
Total	*131*	*100.0*

Question 9: Supporting product diversification, Automation and quality assurance activities

A18	*Number*	*Percent*
Highly unimportant	1	*.8*
Neutral	2	*1.5*
Important	50	*38.2*
Highly important	78	*59.5*
Total	*131*	*100.0*

Question 9: Strengthening backward and forward linkage Industry

A19	*Number*	*Percent*
Highly unimportant	1	*.8*
Unimportant	1	*.8*
Neutral	15	*11.5*
Important	52	*39.7*
Highly important	62	*47.3*
Total	*131*	*100.0*

Question 9: Developing transportation facility to connect global market

A20	*Number*	*Percent*
Highly unimportant	1	*.8*
Unimportant	5	*3.8*
Neutral	13	*9.9*
Important	19	*14.5*
Highly important	93	*71.0*
Total	*131*	*100.0*

Question 9: Capacity development assistance

A21	*Number*	*Percent*
Highly unimportant	2	*1.5*
Neutral	3	*2.3*
Important	30	*22.9*
Highly important	96	*73.3*
Total	*131*	*100.0*

Question 9: Developing business environment and reducing doing business cost

A22	*Number*	*Percent*
Highly unimportant	1	*.8*
Important	27	*20.6*
Highly important	103	*78.6*
Total	*131*	*100.0*

[Crosstab] Question 2: Which export sector does your business belong to? by Question-5: If yes, how much cash incentive do you get in a year (in USD)?

A23	*below 1 mn*		*1-100 mn*		*300-400 mn*		*Total*	
	Number	Percent	Number	Percent	Number	Percent	Number	*Percent*
Textile & RMG	13	54.2%	10	41.7%	1	4.2%	24	*100.0%*
Agro-Processing	19	76.0%	6	24.0%	0	0.0%	25	*100.0%*
Light Engineering	1	50.0%	1	50.0%	0	0.0%	2	*100.0%*
Leather & Leather goods	36	81.8%	8	18.2%	0	0.0%	44	*100.0%*

Pharmaceuticals	11	61.1%	7	38.9%	0	0.0%	18	*100.0%*
Jute & Jute Goods	11	78.6%	3	21.4%	0	0.0%	14	*100.0%*
IT & ITES	3	75.0 %	1	25.0%	0	0.0%	4	*100.0%*
Total	*94*	*71.8%*	*36*	*27.5%*	*1*	*0.8%*	*131*	*100.0%*

[Crosstab] Question 2: Which export sector does your business belong to? by Question-8: “If cash incentive is withdrawn, my business will lose competitiveness in the world export market”. Do you agree with this statement?

A24	*No*		*Yes*		*Total*	
	Number	Percent	Number	Percent	Number	*Percent*
Textile & RMG	5	20.8%	19	79.2%	24	*100.0%*
Agro-Processing	1	4.0%	24	96.0%	25	*100.0%*
Light Engineering	0	0.0%	2	100.0%	2	*100.0%*
Leather & Leather goods	4	9.1%	40	90.9%	44	*100.0%*
Pharmaceuticals	5	27.8%	13	72.2%	18	*100.0%*
Jute & Jute Goods	1	7.1%	13	92.9%	14	*100.0%*
IT & ITES	0	0.0%	4	100.0%	4	*100.0%*
Total	*16*	*12.2%*	*115*	*87.8%*	*131*	*100.0%*

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The Way forward for identified promising and sustainable export-oriented industries following LDC Graduation

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Abstract

Bangladesh is going to graduate into a developing economy by 2026. This graduation may affect the local and export market of our country. Our export-oriented industries including leather, jute and jute products, agriculture and Agro-processing, IT & IT enabled Services (ITES) and pharmaceuticals and Light-engineering besides RMG sector will lose cash incentives after 2026. Apart from this, Bangladesh as a graduating country will face some economic challenges due to the loss of LDC-specific International Support Measures (ISMs), such as preferential market access, loss of LDC-specific ISMs. Taking these challenges into consideration, this study based on survey and KIIs aims to find way forward and alternatives to follow for export market sustenance. The study finds that various laws such as company law, bankruptcy law, partnership law, and taxation law need to be reformed. Besides, it is important to emphasize negotiation for easing the requirements of Rules of Origin (RoO) and capacity building for remaining competitive in the global export market. Furthermore, we also referred how developing countries like Vietnam, Korea, Thailand absorbed new incentive schemes and supports to sustain the export market upon their graduation in line with the WTO standards.

Keywords: LDC graduation, Export-oriented industries, Economic challenges, Legal reforms, Global export market.

1. Introduction

Bangladesh is going to be graduated from LDC in 2026. This LDC graduation may affect the local and export market of our country. Our export-oriented industries including leather, jute and jute products, agriculture and Agro-processing, IT & IT enabled Services (ITES) and pharmaceuticals and Light engineering besides RMG would no longer be eligible for monetary incentives after 2026. Apart from this, Bangladesh as a graduating country will face some economic challenges due to the loss of LDC-specific international support measures (ISMs), such as preferential market access, loss of LDC-specific ISMs. Currently, Government allows cash incentive to export of 42 products and services in different export destination and this incentive no longer can be given to exporters to scale up export (Bangladesh Bank, 2022). Due to the loss of incentives, Bangladesh requires relevant and effective strategies, supports in order to resurrect the export market for these export-oriented businesses.

The transition of LDC graduation will bring in wide-ranging challenges upon LDC graduation. Bangladesh will no longer be eligible for LDC-specific special and differential treatment, which aims to facilitate LDCs to increase participation in international trade, under the WTO agreement. The cash incentives are going to phase out after 2026 and in order to sustain the export market of the six major sectors of the export basket. Against this backdrop, this study seeks to find out some policy indications and some focused-solutions that will help these export-oriented industries to sustain their export market and competitive export share in the post- graduation era. It is estimated that Bangladesh may experience a shortfall of 8-10 percent of its gross export revenue amounting to almost USD 3.5 billion annually once export tariff will be enforced later graduation. Considering the situation, this is a high priority to identify a way forward for a sustainable export market of the above-mentioned major export- oriented industries upon LDC graduation. In this regard, we have identified key and export-oriented industries which are considered as high-priority major export sectors as their export value remains usually top among the export baskets. The scope of work includes RMG, Leather & Leather goods, Jute & Jute Products, Light Engineering, Agro-Processing, Pharmaceuticals and ITES. Since exporters need to sustain in the new and competitive export market, they can be oriented and supported with new policy guidance and non-cash incentives. Moreover, findings and likely alternatives can help the Government and private sector to identify and prefer relevant options in this regard. The study intends to learn the best alternatives do we have to overcome the loss of cash & other incentives and LDC-specific ISMs to enhance export market of Bangladesh. The overall objective of the study is to identify the way forward for selected industries like Leather & Leather goods, Jute & Jute Products, Light Engineering, Agro-Processing, Pharmaceuticals and ITES upon LDC graduation in terms of sustaining their export market and competitive export share in the post-graduation era. The specific objectives of the study are as follows:

- To identify the WTO-compliant support measures needed to address the challenges of the export-oriented industries upon LDC graduation to sustain the export market.
- To develop alternatives to current incentives and strategies that will help to strengthen the country's export business environment.

2. Literature review

The literature shows that LDC graduation, generally, affects some preferential treatments in trade and subsidies, including access to certain LDC-specific funds (Rahman, 2021). The loss of preferential treatments under LDC schemes of developed and developing country members has been one of the major concerns of graduating LDCs, though the impact on market access for a large majority of graduating LDCs is rather limited (WTO, 2021).

A national employment-generating strategy at the domestic level has to be formulated upon LDC graduation of Bangladesh (Bhattacharya & Borgatti, 2012). Bangladesh should consider proper administrative arrangement, as graduation brings with it a variety of new opportunities and challenges. After graduation, as LDC-specific support measures including financial assistance, international trade, and other general support measures will be withdrawn, the country might fall at great risk without the current facilities. In this regard, proactive engagement with major development partners from the beginning to negotiate ad-hoc provisional arrangements will help Bangladesh to reduce graduation costs and to face both the opportunities and challenges of Graduation. On the other hand, Bangladesh should also carefully address all the issues to strengthen its economy. Among them, export diversification is of great concern, as the success in diversifying exports has been a setback. This is to be mentioned that the export basket is so much concentrated in the RMG sector. Moreover, Bangladesh will lose quota-free and duty-free facilities after LDC graduation. As a result, there is a major chance that the RMG sector will face increased tariffs. Therefore, diversification is necessary along with the enhancement of strategies (Rahman et al., 2020).

To face the challenges upon LDC graduation, a number of policy initiatives have been proposed including strengthening market access and competitive capacities, coping with an emerging global trading scenario, getting ready for the new aid regime and structural transformation of the economy (Rahman & Bari, 2018).

To increase the inflow of remittances, Bangladesh should continuously focus on the skills of potential migrants, facilitating and supporting the migration process, making better arrangements with host countries, facilitating better use of migrants' earnings, and supporting the foreign exchange market. In addition, the industrial sector needs supportive measures, including fiscal policies and technical support, to boost employment generation and productivity. Moreover, the other measures including broadening the tax base, curtailing tax evasion, strengthening institutions and ensuring good governance should be taken (Khatun et al., 2018).

A post-graduation trade strategy must be considered to fix the effective ways of promoting firm-level competitiveness. These include raising labor productivity, technological upgradation, moving up the value chain and attracting foreign direct investment. Cost of doing business reduction along with making improvements in infrastructural facilities and trade logistics. The external competitiveness of private sector enterprises will be enhanced by the aforementioned areas (Razzaque et al., 2020).

2.1 Export Subsidy Alternatives from Best Practices

The WTO Agreement on Subsidies and Countervailing Measures disciplines the use of subsidies, and it regulates the actions countries can take to counter the effects of subsidies. Under the agreement, any country can use the WTO's dispute-settlement procedure to seek the withdrawal of the subsidy or the removal of its adverse effects or the country can launch its own investigation and ultimately charge extra duty ("countervailing duty") on subsidized imports that are found to be hurting domestic producers (WTO, 2023).

Export subsidies have contributed positively to the expansion of export in some countries like China, Korea and Brazil. But, export subsidies do not seem to have benefitted export growth in a range of other countries including India and several Latin American countries. In Korea and China, export subsidies were a part of a well-thought-out export promotion and economic development strategy that emphasized prudent macroeconomic management, sound management of the real exchange rate and moderate levels of trade protection that reduced the anti-export bias.

In Brazil, export subsidies were a part of a broader package of export incentives including sound real exchange rate policy and import liberalization. There is no evidence that export subsidies can offset the adverse effects of large trade protection or an appreciation of the real exchange rate (Ahmed, 2020).

According to the UN list of graduating economies, only 6 countries have graduated till 2020. Courtiers include Botswana, Cobo Verde, Maldives, Samoa, Euatorial Guinea and Vanuatu. Since these countries are different from Bangladesh in terms of industrial state and export strength, there are no remarkable lessons and strategies that Bangladesh can follow for export market development (UN, 2022). Therefore, we extracted and referred some learning and practices of Vietnam, South Korea and Thailand in terms of their various policies and incentives used instead of cash incentive to promote export-led industrial growth are discussed below:

Vietnam: Vietnam has increased their export capacity through FTAs. Vietnam has signed 18 FTAs till date. Moreover, Vietnam provides tax incentives for businesses on four bases – sector, location, size of investment, and exemption from import duty. Certain sectors in Vietnam are encouraged and include industries that the government wants to incentivize, facilitate investments for, or those which are beneficial for society: (1) High-tech industries; (2) Supporting products used in high-tech industries; (3) Software products; (4) Research and development; (5) Select agricultural and allied sectors; (5) Infrastructure development; (6) Renewable energy; (7) Education; (8) Health care; and (9) Sports and culture. Firms operating in these sectors are given following tax incentives:

- Firms making new investments in technology related sectors, garments, footwear, automobiles, goods that are not produced domestically and investments where the products meet the European Union (EU) quality standard – these are taxed at 10% for 15 years. This period also includes a tax holiday for the first 4 years and 50% reduction in the CIT rate for 9 subsequent years.
- Companies operating in sectors of education and training, health care, sports, culture and environment have a tax rate of 10% for their entire lifetime.

- Companies earning their income from prescribed agricultural and allied activities are eligible for 15% tax rate for their entire lifetime.
- Firms producing the equipment for the above prescribed agricultural sectors also receive a tax incentive in the form of 17% tax rate for their entire lifetime.

Depending on the level of infrastructure development labour conditions, and the geography of the area, Vietnam is categorized into three groups – areas with difficult socio-economic conditions, areas with especially difficult socio-economic conditions, and remaining areas. Firms operating in difficult and especially difficult socio-economic conditions are generally offered tax incentives. Along with these areas, firms operating in Special Economic Zones (SEZs), High-Tech Zones (HTZs) and Information Technology Parks (ITPs) are also eligible for tax incentives. Tax incentives based on locations are as follows:

- Firms operating in especially difficult areas, SEZs or HTZs are taxed at 10% for the first 15 years of revenue generation. This period also includes a tax holiday for the first 4 years followed by 50% reduction for the subsequent 9 years.
- Firms operating in difficult areas are taxed at 17% for 10 years of revenue generation. This period also includes a tax holiday for the first 2 years followed by 50% reduction for the subsequent 4 years.
- Firms operating in industrial parks are eligible for 2 years of tax holidays followed by 50% corporate tax reduction for the subsequent 4 years.

Size of Project is another basis of Tax incentive which is also available for large manufacturing projects. Businesses can also avail exemptions from import duty, if they meet one of the following criteria:

- Goods are imported to form fixed assets of select projects prescribed under the law and implementing export processing contracts with foreign parties.
- Goods which are imported for use in scientific research and technological development, and which cannot be produced domestically.

South Korea: Korea continued to maintain the option to restrict or monitor certain exports to ensure adequate domestic supplies, thereby possibly assisting downstream processing of these products. Korea did not impose quantitative export restrictions for rice or any other agricultural products during Covid-19.

- Korea provides direct export subsidies to reduce marketing cost for certain agricultural products which will be eliminated by 2023.
- A drawback scheme continues to provide refunds of border taxes on raw materials used in exports. Internal indirect taxes are reimbursed on exports. No new corporation tax relief to foreign enterprises located in free trade zones has been granted since 2019.
- Exports continue to benefit from government finance, insurance and guarantees as well as the promotional activities provided by state-owned institutions.

Thailand: Thailand is committed to trade and investment liberalization as a means of improving competitiveness and thereby promoting sustainable economic growth.

- WTO Trade policy review on Thailand (2020) reveals a number of policies and incentives to promote exports.

- The Government has adopted a "dual track" development approach to strengthen the domestic economy while also facilitating trade and investment. Trade-related laws including the Anti-Dumping and Countervailing Duty Act (1999) have been enacted and implemented. Thailand accords at least MFN treatment to all WTO Members, but not necessarily to non-Members.
- Thailand has made a number of notifications to the WTO including Anti-dumping, Safeguards, Subsidies and Countervailing Measure, Technical Barriers to Trade, TRIMs, TRIPs etc.

2.2 Research Gap

Upon LDC graduation, Bangladesh will lose preferential trade benefits with various countries, especially losing a competitive edge in numerous products (Hossain, 2019). Addressing this challenge requires proactive steps to ensure a smooth transition without suffering substantial economic losses. The country's potential decline in export earnings post-2026 must be mitigated through targeted strategies. One of the overlooked aspects is the need for Bangladesh to expand its Ready-Made Garment (RMG) exports into new international markets (Ehsan, 2021). However, similar measures need to be identified and applied to other key export-oriented industries.

The post-graduation context presents unexplored challenges for Bangladesh, particularly in finding viable alternatives to the DFQF facility currently enjoyed by LDCs. Despite the urgency, there remains a significant gap in both empirical and theoretical research on these issues. With limited scholarly attention on Bangladesh's path to maintain competitiveness in global trade, this area requires thorough investigation. Therefore, there is a pressing research gap in identifying promising and sustainable industries that can thrive in the post-graduation scenario, along with feasible solutions to sustain growth beyond the loss of preferential benefits.

3. Research Methodology

3.1.Nature of Research

This study is exploratory research in nature. In addition to Key Informant interviews (KIIs), a survey was conducted with a structured questionnaire among the export businesses to identify the way forward after LDC graduation for a number of selected industries e.g., Leather & Leather goods, Jute & Jute Products, Light Engineering, Agro-Processing, Pharmaceuticals and ITES. As mentioned earlier, upon LDC graduation, Bangladesh will no longer be eligible for LDC-specific special and differential treatments, aimed to facilitate LDCs to increase participation in international trade. Despite the critical nature of this shift, there has been a lack of focused research on how to counterbalance the impending loss of SDT benefits.

3.2 Sampling Technique

Non-probability convenience sampling technique was employed in this research. 121 respondents for the quantitative survey and the 13 key informants for the qualitative interviews were selected virtually from relevant sectors to ensure a diverse representation of industries. These samples were collected from a population of about 6,146 listed exporters of goods and around 400 IT&ITES exporters of services in the country (BASIS, 2018; EPB, 2022) and exporters member base of DCCI.

The non-probability convenience sampling technique was chosen because of time and resource constraints along with the COVID impact, which barred the researchers to reach randomly selected businesses for data collection. Therefore, only virtually collected data were used for this study.

3.3 Data Collection

Data collection followed a two-phase approach. In the first phase, a quantitative survey was conducted with 121 businesses selected from approximately 6,146 goods exporters and 400 IT & ITES service providers. A structured questionnaire was distributed via email using the KoBo Collect platform, targeting relevant industry associations and DCCI members engaged in international trade. In the second phase, qualitative insights were gathered through 13 Key Informant Interviews (KIIs) with a key informant interview (KII) schedule comprising 2 from RMG, Leather, Agro, Pharmaceutical, Light Engineering and Jute sectors and 1 from IT.

3.4 Methods

This study employed a mixed-method approach, combining both quantitative and qualitative methods to offer a comprehensive analysis of the challenges and opportunities facing businesses in Bangladesh after LDC graduation. By integrating these methods, the research captures both statistical trends and the nuanced perspectives of industry stakeholders, providing a holistic view of the post-LDC landscape.

To identify the degree of importance on the alternatives if the DFQF facility is not available, the latent structure of the responses was examined using Principal Axis Factoring (PAF) with Varimax rotation (Mabel & Olayemi, 2020). This statistical technique was applied to identify underlying factors that explain the relationships among the observed variables. PAF was chosen because it focuses on the shared variance among variables, which is essential for understanding the underlying patterns in the respondents' perceptions of alternative strategies after LDC graduation. The Varimax rotation was applied to achieve a simpler and more interpretable factor structure by maximizing the variance of squared loadings of a factor across variables, thus facilitating a clearer distinction between the factors.

The factor analysis begins by calculating the correlation matrix R of the observed variables, where R is a square matrix containing the correlations between each pair of variables. The communalities h_i^2, representing the proportion of variance in each variable explained by the factors, were extracted from this matrix. The PAF method estimates the factor loadings matrix L, where each element L_{ij} represents the correlation between the i^{th} variable and the j^{th} factor. The equation for the factor model can be expressed as:

$$\mathbf{X=LF+E}$$

Where:
X is the matrix of observed variables,
L is the matrix of factor loadings,
F is the matrix of factor scores,
E represents the error terms or unique variances.

Once the factors were extracted, the Varimax rotation was performed to redistribute the variance across the factors for clearer interpretation. Rotation seeks to minimize the number of variables with high loadings on each factor, leading to more interpretable clusters of variables that represent distinct strategic areas, such as legal reforms, market access, and capacity building. The rotated factor loadings L_{ij}^{rot} are recalculated to maximize the separation between factors.

In addition to the quantitative analysis, the study incorporated qualitative data to offer a deeper understanding of sector-specific strategies and responses to the loss of LDC-specific benefits. Key Informant Interviews (KIIs) were conducted with stakeholders including industry experts, government officials, business leaders, and trade association representatives. These interviews were semi-structured, allowing for both guided questions and open-ended discussions, which provided rich insights into the practical challenges businesses expect to face and their proposed solutions.

The qualitative data from the KIIs were analyzed thematically, following a process of coding and categorizing responses. Recurring themes were identified, such as concerns about the loss of preferential trade agreements, the need for policy reforms, and industry-specific strategies for market diversification. This qualitative perspective added depth to the study by capturing the complexities of the transition process, providing insights that quantitative data alone could not offer.

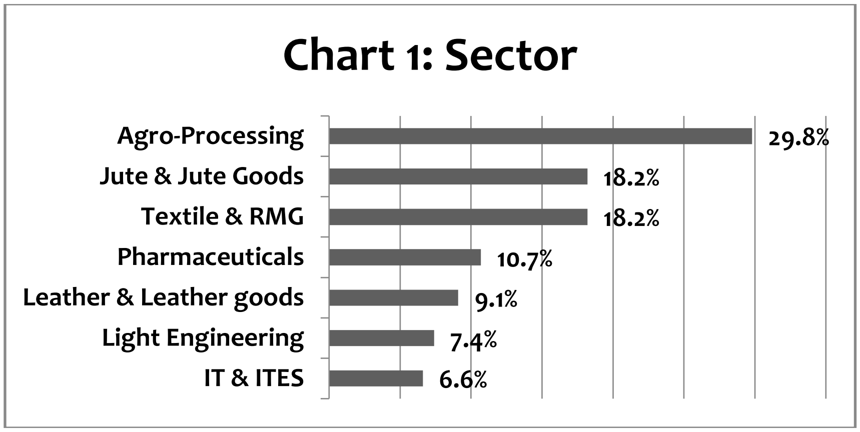
The integration of both quantitative and qualitative findings was essential in developing a comprehensive understanding of the post-LDC business environment. While the quantitative analysis provided a broad picture of potential economic impacts, the qualitative insights from the KIIs offered more nuanced perspectives on how different sectors plan to navigate these challenges. The combined findings are discussed in the 'Analysis and Findings' section, where quantitative data highlight trends such as potential export declines or shifts in market access. Meanwhile, qualitative data contextualize these trends, illustrating how specific industries, such as RMG or pharmaceuticals, are preparing to address the challenges. This mixed-method approach not only provides a comprehensive understanding of the challenges posed by LDC graduation but also offers actionable insights into strategies for sustainable growth in the post-graduation context.

4. Results and Discussions

4.1 Descriptive Analysis

4.1.1 Respondents' Share of Business ownership in the export sector

Out of 121 respondents participated in the survey, most (29.8%) of the respondents were from the Agro-Processing sector and least (6.6%) were from IT & ITES sector. The share of participants from both Textile & RMG and Jute & Jute Goods sectors was equal to 18.2%. Moreover, 10.7%, 9.1%, and 7.4%, of respondents participated from Pharmaceuticals, Leather & Leather goods and Light Engineering sectors respectively.



4.1.2. Respondents' Knowledge about the deprival of ISMs like the DFQF facility after LDC graduation

The respondents were asked whether they know that they may be deprived of International Support Measures (ISMs) like the DFQF facility after LDC graduation. While most of them (65.3%) answered in affirmative, 34.7% answered "no".

4.1.3. Respondents' Opinions on the problems they may face after LDC graduation

4.1.3.A: Lack of supportive legal framework

When the participants were asked about their level of importance on the lack of a supportive legal framework, the highest percentage (61.2%) said that the problem was highly important. Another 33.9% of respondents opined that the problem was important. Interestingly, 4.1% of respondents were neutral about this problem and 0.8% of respondents said that the problem was unimportant.

4.1.3.B: Lack of preferential market access

As the participants were asked about their level of importance on the lack of preferential market access, most of them (52.1%) opined that the problem was highly important. Another 38.8% of respondents rated the problem as important. Whereas 8.3% of respondents were neutral about this problem. Interestingly, 0.8% of respondents mentioned the problem was unimportant.

4.1.3.C: Cost of doing business

Regarding the cost of doing business, most of the respondents (75.2%) were of the opinion that the problem was highly important. 19% of respondents told the problem was important. However, 5% of respondents were neutral about this problem. Interestingly, 0.8% of respondents told the problem was unimportant.

4.1.3.D: Lack of competitiveness

When the respondents were asked about the level of importance on the lack of capacity of competition, most of them (68.6%) said the problem was highly important. 26.4% of respondents opined that the problem was important. Interestingly, 5% of respondents were neutral about this problem.

4.1.4 The Respondents' Feedback on the importance of alternatives to the DFQF facility after LDC graduation

4.1.4.A. Reform of various laws

When the participants were asked if the DFQF facility is not available, what would be the degree of importance of reforming various laws such as company law, bankruptcy law, partnership law, taxation law, most of them (59.5%) said that the alternative was highly important. 28.9% of respondents opined that the alternative was important. 9.9% of respondents were neutral about this alternative. 1.7% of respondents said that the alternative was highly unimportant.

4.1.4.B. Drafting/formulating of new laws

Regarding the alternative about drafting/formulating of new laws such as the Privacy Act, Intellectual Property Act, etc., most of the respondents (53.7%) expressed their opinion that the alternative was highly important. 40.5% of respondents said that the alternative was important. 4.1% of respondents were neutral about this alternative. Interestingly, 1.7% of respondents said that the alternative was unimportant.

4.1.4.C. Negotiation for easing the requirements of Rules of Origin (RoO)

As the respondents were asked about the alternative about negotiation for easing the requirements of Rules of Origin (ROO), most of the respondents (51.2%) opined that the alternative was important whereas, 28.9% of respondents said that the alternative was highly important. However, 19% of respondents were neutral about this alternative. 0.8% of respondents said that the alternative was unimportant.

4.1.4.D. Negotiation in international market for tariff liberalization

When the respondents were asked about the alternative about negotiation in the international market for tariff liberalization, most of the respondents' opinion (47.1%) was that the alternative was important. However, 32.2% of respondents said that the alternative was highly important. 19.8% of respondents were neutral about this alternative whereas, 0.8% of respondents said that the alternative was highly unimportant.

4.1.4.E. Signing FTA and PTA with Major Trade Partners and Blocs

Regarding to sign FTA, PTA with major trade partners and blocks, 45.5% responded that signing FTA and PTA with major trade partners and blocs are important in response to the DFQF facility is not available after LDC graduation. 33.1% of respondents opined that this is highly important and Neutral responses came from 21.5% of respondents.

4.1.4.E. Rationalization of Non-tariff Barriers

If DFQF facility is not available after LDC graduation, the rationalization of non-tariff barriers (NTBs) like sanitary and phytosanitary (SPS) measures, and para tariffs in various countries is important to the most of the respondents (60.3%). 25.6% of respondents opined that this is highly important. Neutral responses came from 13.2% of respondents and remaining 0.8 % respondents said that this is unimportant.

4.1.4.F. Rationalization of Land Acquisition cost or rent

Among the respondents, 66.9% responded that land acquisition cost or rent rationalization is highly important in response to DFQF facility is not available after LDC graduation. 25.6% of respondents opined that this is important. Neutral responses came from 4.1% of respondents and remaining 3.3 % respondents said that this is unimportant.

4.1.4.G. Easy access to finance

If DFQF facility is not available after LDC graduation, the easy access to finance is highly important to the most of the respondents (81%). 14.9% of respondents opined that this is important and neutral responses came from 4.1% of respondents.

4.1.4.H. Ensuring supply of skilled manpower

Among the respondents, 69.4% responded that ensuring supply of skilled manpower is highly important in response to DFQF facility is not available after LDC graduation. 29.8% of respondents opined that this is important and neutral responses came from 0.8% of respondents.

4.1.4.I. Improvement of Efficiency of Backward and Forward Linkage industries

Among the respondents, 51.2% responded that improving efficiency of backward and forward linkage industries is important in response to DFQF facility is not available after LDC graduation. 40.5% of respondents opined that this is highly important, neutral responses came from 7.4% of respondents and remaining 0.8% responded it unimportant.

4.1.4.J. Support from relevant Govt agencies

Regarding support from relevant people of the Government to ensure sustainable environment, most of the respondents (64.5%) opined that this is highly important if DFQF facility is not available whereas, 31.4% of respondents opined that this is important and remaining 4.1% respondents said that this is neutral.

4.1.4.K. Ensuring rights of access to information at affordable cost

Regarding ensuring rights of access to information at affordable cost, most of the respondents (70.2%) opined that this is highly important if DFQF facility is not available whereas, 26.4% of respondents opined that this is important and remaining 3.3% responded as a neutral on these issues.

4.1.4.L. Improvement of overall logistic and infrastructure facilities

Among the respondents, 79.3% responded that improvement of overall logistic and infrastructure facilities is highly important in response to DFQF facility is not available after LDC graduation. 18.2% of respondents opined that this is important and neutral responses came from 2.5% of respondents.

4.1.4.M. Increasing managerial capacity

If DFQF facility is not available after LDC graduation, increasing managerial capacity is highly important to 60.3% of the respondents. 43.8% of respondents opined that this is important and neutral responses came from 5% of respondents.

4.1.4.N. Capacity Building on Proper Investment Appraisal

Investment appraisal refers to a systematic evaluation using which an investor can gauge the profitability of the new venture. This is considered a routine task in advanced countries, whereas in our country only 30.6% of the industry representatives think that capacity building on proper investment appraisal is highly important or necessary. 57.9% of the respondents reported this as an important criterion in the post-LDC period as capacity development in this area can help entrepreneurs to minimize risk. Another 11.6% of respondents were neutral or indifferent about this.

4.1.4.O. To ensure compliance for achieving international standards

In international trade, aligning products and service quality with international standards holds paramount importance. Complying with international standards and attaining relevant certification will not only facilitate international trade but also enable small and medium-sized enterprises (SMEs) to obtain access to the international market (National Trade Estimate Report on Foreign Trade Barriers, 2017). The respondents also emphasized on the significance of this issue. 52.1% of the respondents consider that ensuring compliance with international standards is important when there will not be any Duty-Free Quota Free (DFQF) access in the international market after 2026. Only 0.8% considers this as unimportant while 41.3% of the respondents think ensuring compliance with international standards is highly important. However, 5.8% of the respondents were neutral on this.

4.1.4.P. Improvement of negotiation capability

Effective negotiation can bring out the best outcome from any trade agreement. The majority of the respondents of the study also believe that the improved negotiation capability can help the country secure the best trade deals to face the challenges when there will be no DFQF access. 58.7% of the respondents said that improving negotiation capability is highly important and 38.8% of respondents considered this important, whereas only 2.5% remained neutral or indifferent regarding improving negotiation skills. This response indicates how intently the business community of our country wants better trade deals that can open avenues of business opportunities in the foreign market.

4.1.4.Q. Country branding activities

Country branding refers to a strategic marketing system that guides a country to promote its unique identity and competitiveness (Akotia, 2005). In the era of globalization, country branding has become very pertinent within the developing countries. Around 70.2% of the respondents of our study consider country branding highly important. Similarly, 25.6% of the respondents consider this important whereas only a small number of respondents, only 3.3%, remained indifferent. Only 0.8% of the respondents opined this as unimportant. Hence, various strategic steps should be taken to position or promote our country as a business-friendly country so that the respondents can easily attract investment and increase export in the post LDC period.

4.1.4.R. Enhancement of R&D-led innovation

In the era of rapidly changing business environment and technological advancement, it is imperative for business entities to emphasize on R&D-led innovation. 56.2% of the industry representatives have stated that enhancement of R&D is highly important and 41.3% of the same have considered this important. Only 2.5% of the respondents were neutral on this. Hence, the enhancement of R&D cannot be ignored if the business entities want to diversify their production. However, it is incumbent on entrepreneurs to start investing in R&D not only to face the challenges related to LDC graduation but also to remain competitive in the changing business environment.

4.1.4.S. Global Partnership Development

Global Strategic Partnership can offer unparalleled opportunities to business entities of developing countries like Bangladesh, such as investment, technology transfer and skills development, etc. However, only 27.3% of the respondents from various industries said that developing global partnerships is highly important. Though 53.7% respondents consider this important, 19% of the same remained neutral or indifferent regarding this.

4.1.4.T. Manufacturing high-end diversified products

51.2% of the representatives of various industries said that manufacturing high-end diversified product is highly important when the DFQF facility will not be available. 38.8% of the respondents consider this important whereas only 9.1% of the same were indifferent or neutral regarding this. However, 0.8% of the respondents opined this as unimportant. This is evident from the responses that the industry representatives are concerned about shifting from manufacturing low-end products to high-end products.

4.1.4.U. Adaptation with 4IR & other state of the art technologies

The Bangladesh government has already started to encourage business entities and entrepreneurs to adapt to 4IR and other state-of-the-art technologies. The business community participated in our study also conveyed their concerns regarding adaptation to 4IR to face the challenges of LDC graduation. 62.8% of the respondents think that adopting 4IR and other state-of-the-art technology will help them to cope with the new business environment after LDC graduation. 28.9% of the respondents stated that this is important whereas only around 0.8% of the respondents found this is unimportant. However, 7.4% of the respondents were neutral on this.

4.1.4.V. Re-skilling & up-skilling of the existing workforce

In the changing business ambiance, re-skilling and up-skilling are highly relevant. According to World Economic Forum, it is estimated that a certain share of core skills will change by the year 2025 and 50% of all employees will need reskilling (World Economic Forum, 2020). Similarly, the rapidly increasing skill gap in the workforce has become a serious concern among the industry representatives of Bangladesh. However, 42.1% of the industry representatives surveyed stated that re-skilling and up-skilling of existing workforce are highly important. Around 52.9% of the respondents consider this important while only 5% of the respondent were indifferent.

4.1.4.W. Facilitation of the export of non-conventional products

RMG industry holds the major share of the export basket of Bangladesh. However, the dependency on one single product in terms of export earnings makes a country vulnerable to any external shocks in the changing geo-economic context. Hence, policymakers have put immense importance on diversifying the export basket by producing more non-conventional products that have export potentials. The industry representatives we surveyed also believe that facilitating the export of non-conventional products should be given importance immediately, particularly to face the challenges that arise after LDC graduation. 40.5% of industry representatives stated that it is highly important to facilitate the export of non-conventional products. A significant 55.4% of the respondent considered this important. However, 4.1% of the respondents were neutral on this. Hence, facilitating the export of non-conventional products should be given paramount importance to diversify the export basket and increase export earnings.

4.1.5 Way forward for a sustainable export market

One of the most important dimensions of this study is to identify what best alternatives we have for overcoming the loss of cash & other incentives and LDC-specific ISMs to boost Bangladesh's export market. A list of alternatives was given to the respondents to assess their degree of importance as viable alternatives to DFQF facility. Findings from these responses that were reordered on a 5-point Likert Scale are summarized as follows:

Table: 1 Summary of Responses for different alternatives to DFQF facility

Degree of importance of the alternatives to DFQF facility
5 = Highly Important

	Percent
Easy access to finance	81.0
Improvement of overall logistic and infrastructure facilities	79.3
To ensure rights of access to information at affordable cost	70.2
Country branding activities	70.2
Ensuring supply of skilled manpower	69.4
Land Acquisition cost or rent needs to be rationalized	66.9
Support from relevant people of the Govt. to ensure sustainable environment	64.5
Adaptation with 4IR & other state of the art technologies	62.8
Reform of various laws such as company law, bankruptcy law, partnership law, taxation law, etc.	59.5
Improving negotiation capability	58.7
Enhancement of R&D led innovation	56.2
Drafting/formulating of new laws such as Privacy Act, Intellectual Property Act, etc.	53.7
Increase managerial capacity	51.2
Manufacturing high-end diversified products	51.2
Re-skilling & up-skilling of the existing work force	42.1
To ensure compliance for achieving international standards	41.3
Improving Efficiency of Backward and Forward Linkage industries	40.5
To facilitate export of non-conventional products	40.5
To sign FTA, PTA with Major Trade Partners and Blocs	33.1
Negotiation in international market for tariff liberalization	32.2

Capacity building for proper investment appraisal	30.6
Negotiation for easing the requirements of Rules of Origin (Roo)	28.9
Global partnership development	27.3
Rationalization of Non-tariff Barriers like Sanitary and Phytosanitary (SPS) Measures, and Para Tariffs in various	25.6

Table: 2 Summary of Responses for different alternatives to DFQF facility

Degree of importance of the following alternatives to DFQF facility
5 = Highly Important, 4 = Important, 3 = Neutral, 2 = Unimportant, 1 = Highly Unimportant

Sl.	Variable	Obs	Sum	Mean	Min	Max	Sum of Maximum Value	Sum of Minimum Value
1	*Reform of various laws such as company law, bankruptcy law, partnership law, taxation law, etc.*	121	538	4.45	1	5	605	121
2	*Drafting/formulating of new laws such as Privacy Act, Intellectual Property Act, etc.*	121	540	4.46	1	5	605	121
3	*Negotiation for easing the requirements of Rules of Origin (Roo).*	121	494	4.08	1	5	605	121
4	*Negotiation in international market for tariff liberalization.*	121	496	4.10	1	5	605	121
5	*To sign FTA, PTA with Major Trade Partners and Blocs.*	121	498	4.12	1	5	605	121
6	*Rationalization of Non-tariff Barriers like Sanitary and Phytosanitary (SPS) Measures, and Para Tariffs in various Countries.*	121	497	4.11	1	5	605	121
7	*Land Acquisition cost or rent needs to be rationalized.*	121	552	4.56	1	5	605	121
8	*Easy access to finance.*	121	577	4.77	1	5	605	121
9	*Ensuring supply of skilled manpower.*	121	567	4.69	1	5	605	121
10	*Improving Efficiency of Backward and Forward Linkage industries.*	121	522	4.31	1	5	605	121
11	*Support from relevant people of the Govt. to ensure sustainable environment.*	121	557	4.60	1	5	605	121
12	*To ensure rights of access to information at affordable cost.*	121	565	4.67	1	5	605	121
13	*Improvement of overall logistic and infrastructure facilities.*	121	577	4.77	1	5	605	121
14	*Increase managerial capacity.*	121	540	4.46	1	5	605	121
15	*Capacity building for proper investment appraisal.*	121	507	4.19	1	5	605	121
16	*To ensure compliance for achieving international standards.*	121	525	4.34	1	5	605	121
17	*Improving negotiation capability.*	121	552	4.56	1	5	605	121
18	*Country branding activities.*	121	563	4.65	1	5	605	121
19	*Enhancement of R&D led innovation.*	121	549	4.54	1	5	605	121
20	*Global partnership development.*	121	494	4.08	1	5	605	121

21	*Manufacturing high-end diversified products.*	121	533	4.40	1	5	605	121
22	*Adaptation with 4IR & other state of the art technologies.*	121	549	4.54	1	5	605	121
23	*Re-skilling & up-skilling of the existing work force.*	121	529	4.37	1	5	605	121
24	*To facilitate export of non-conventional products.*	121	528	4.36	1	5	605	121

Table: 3 Rank and Degree of Importance of different variables

Sl.	**Variable**	**Sum**	**Mean**	**Rank**	**Degree of Importance**
8	*Easy access to finance.*	577	4.77	1	Highly Important
13	*Improvement of overall logistic and infrastructure facilities.*	577	4.77	2	Highly Important
9	*Ensuring supply of skilled manpower.*	567	4.69	3	Highly Important
12	*To ensure rights of access to information at affordable cost.*	565	4.67	4	Highly Important
18	*Country branding activities.*	563	4.65	5	Highly Important
11	*Support from relevant people of the Govt. to ensure sustainable environment.*	557	4.60	6	Highly Important
7	*Land Acquisition cost or rent needs to be rationalized.*	552	4.56	7	Highly Important
17	*Improving negotiation capability.*	552	4.56	8	Highly Important
19	*Enhancement of R&D led innovation.*	549	4.54	9	Highly Important
22	*Adaptation with 4IR & other state of the art technologies.*	549	4.54	10	Highly Important
2	*Drafting/formulating of new laws such as Privacy Act, Intellectual Property Act, etc.*	540	4.46	11	Important
14	*Increase managerial capacity.*	540	4.46	12	Important
1	*Reform of various laws such as company law, bankruptcy law, partnership law, taxation law, etc.*	538	4.45	13	Important
21	*Manufacturing high-end diversified products.*	533	4.40	14	Important
23	*Re-skilling & up-skilling of the existing work force.*	529	4.37	15	Important
24	*To facilitate export of non-conventional products.*	528	4.36	16	Important
16	*To ensure compliance for achieving international standards.*	525	4.34	17	Important
10	*Improving Efficiency of Backward and Forward Linkage industries.*	522	4.31	18	Important
15	*Capacity building for proper investment appraisal.*	507	4.19	19	Important
5	*To sign FTA, PTA with Major Trade Partners and Blocs.*	498	4.12	20	Important
6	*Rationalization of Non-tariff Barriers like Sanitary and Phytosanitary (SPS) Measures, and Para Tariffs in various Countries.*	497	4.11	21	Important
4	*Negotiation in international market for tariff liberalization.*	496	4.10	22	Important
3	*Negotiation for easing the requirements of Rules of Origin (Roo).*	494	4.08	23	Important

20	*Global partnership development.*	494	4.08	24	Important

Table 2 and Table 3 show item of "Easy access to finance" has the highest overall score. In other words, among the listed alternatives, easy access to finance have the highest priority among the exporters. More specifically, if Bangladesh can ensure these through relevant policies, DFQF facility will not be required. However, this is also important to note that "Easy access to finance" is not the only alternative to DFQF facility. The respondents identified ten alternatives as "Highly Important". More interestingly, the remaining fourteen alternatives which are not "Highly Important", still fall in the category of "Important". Therefore, it can be inferred that ALL the alternatives to DFQF facility, which are listed in this study, are somehow important.

4.2 Factor Analysis

To identify the degree of importance on the alternatives, if DFQF facility is not available, the latent structure was examined using Principal Axis Factoring (PAF) with Varimax rotation. The minimum factor loading criteria was set to 0.50. Initially, we did not get the desired results as some of the items were loaded on other factors. Some items were removed step by step to present the final result (Please see Table: A3 for details). The removed items are as follows:

1. Rationalization of Non-tariff Barriers like Sanitary and Phytosanitary (SPS) Measures, and Para Tariffs in various countries
2. Ensuring supply of skilled manpower
3. Improving efficiency of Backward and Forward Linkage industries
4. Support from relevant people of the Govt. to ensure sustainable environment
5. To ensure rights of access to information at affordable cost
6. Improvement of overall logistic and infrastructure facilities
7. Increase managerial capacity
8. Enhancement of R&D led innovation
9. Global partnership development
10. Manufacturing high-end diversified products
11. Re-skilling & up-skilling of the existing work force
12. To facilitate export of non-conventional products

In the final result, the Kaiser-Meyer-Olkin (KMO) index was 0.74, exceeding the recommended value of 0.6 (Kaiser, 1970) and Bartlett's Test of Sphericity (Bartlett, 1954) reached statistical significance (Chi-Square=503.71, $p<0.001$), indicating that our data were suitable for factor analysis. The results of the final analysis revealed three factors with Eigenvalue over 1, explaining 49.06% variance of the total variance. The results of the exploratory factor analysis (EFA) show that our factors have good level of validity (Please see Table: A2 for details).

The three factors containing the items are as follows:

First factor

1. Reform of various laws such as company law, bankruptcy law, partnership law, taxation law, etc.
2. Drafting/formulating of new laws such as Privacy Act, Intellectual Property Act, etc.
3. Land Acquisition cost or rent needs to be rationalized

4. Easy access to finance
5. Improving negotiation capability
6. Country branding activities
7. Adaptation with 4IR & other state of the art technologies

Second factor

1. Negotiation for easing the requirements of Rules of Origin (Roo)
2. Negotiation in international market for tariff liberalization
3. To sign FTA and PTA with Major Trade Partners and Blocs

Third factor

1. Capacity building for proper investment appraisal
2. To ensure compliance for achieving international standards

This three-factor solution means that the degree of importance of the reduced twelve alternatives from a total of twenty-four alternatives is high If DFQF facility is not available.

4.3 Qualitative Analysis

4.3.1 Findings from the KIIs

The readymade garments (RMG) sector is currently grappling with the skyrocketing prices of raw materials, which is proving to be a significant challenge, particularly for small and medium enterprises (SMEs). Additionally, businesses in this sector face challenges in navigating the complex tax and VAT structure, which the government should rationalize to prevent the sector from losing its competitive edge on the global map. Furthermore, the export and import-related policies are not streamlined, and these need to be reformed to align with the current market conditions and to better facilitate local industries. Strengthening the supply chain system is also crucial, as this would open up new opportunities for the sector.

In the light engineering sector, the absence of proper guidelines and standards for maintenance is a primary concern. Therefore, formulating a comprehensive guideline to maintain industry standards is necessary. While the country possesses adequate facilities to produce quality control devices locally, this capacity is underutilized. Additionally, a uniform VAT and taxation system should be maintained to support the sector. Preparing an efficient workforce is essential for the sector's growth, alongside liberalizing policies that harmonize public and private sector efforts. Moreover, creating an incentive package for exporting industries, similar to the 13% benefit China provides its exporters, could significantly increase Bangladesh's export volume. The sector also needs to reform its marketing strategies to tap into diverse opportunities.

Bangladesh's pharmaceutical sector holds significant potential, with a growing demand for world-class medicines. However, the sector suffers from a lack of ethical marketing practices, which calls for the creation of proper guidelines for business development and promotion. Additionally, laboratory facilities and quality control units face operational challenges, and businessmen often suffer from insufficient working capital coupled with high financing costs. To address this, Bangladesh Bank should adopt more liberal policies to increase access to low-cost working capital. A strong and integrated policy is also needed to secure intellectual property rights within this sector, ensuring sustainable growth.

In the Agro-processing industry, export logistics costs need to revert to pre-COVID-19 levels. The recent hikes in fuel prices must be halted, and the government should adopt a long-term, predictable, and affordable fuel pricing strategy. Moreover, the import process of raw materials is hindered by delays in unloading goods, which should be streamlined by implementing quicker import facilities. Businesses in this sector are currently facing capital losses and a shortage of experienced staff, which can be alleviated by providing low-interest loans to bridge the capital deficit.

The leather and leather products sector requires immediate action to ensure compliance through the implementation of a Common Effluent Treatment Plant (CETP). To maintain its position in the European market, Bangladesh needs to take strategic measures to re-enter with a stronger presence; otherwise, China may capture its market share. Even if production increases, profit margins will remain minimal unless logistics improve locally. Rationalizing the import processing time is also vital for the sector's growth.

The IT and IT-enabled services (ITES) sector should see the recognition of IT freelancing as a profession, and low-cost lending options on easy terms are essential for fostering new entrepreneurs. Suitable regulations must be developed for the IT and ITES sectors to boost export development. Additionally, enhancing the digital skills of employees and the capacity of industries is critical. The sector also needs short, medium, and long-term plans to implement Fourth Industrial Revolution (4IR) technologies. To increase exports, it is necessary to strengthen copyright laws and enforce the Data Protection Act.

The jute and jute diversified products sector requires a skilled workforce to introduce innovative products and compete with neighboring countries. Businesses need to take steps to obtain social compliance certifications to attract more buyers. Incorporating advanced technology is also essential to offset the rising cost of labor. Companies must invest in research and development to understand market demand and improve product quality. Moreover, existing businesses should focus on producing value-added products rather than limiting themselves to a few traditional items for export.

4.4 Alternatives to Cash Incentives on Export Receipts for Bangladesh in line with WTO standards:

The graduating countries used to policies, programs and initiatives to develop their export sector maintaining WTO standards that includes Trade facilitation, Tax incentive and simplification of financing, state loan, guarantees, subsidized interest, setting up sector-based central warehouses, providing assistance to digitalization, policy supports for the production and export of intermediate goods, skill upgradation, agricultural export subsidies, subsidized trade financing etc.

According to WTO (2022) most of the recorded subsidy programs are in the largest trading economies of China, the EU and the United States account for over half of all global subsidy measures. The top five most frequent subsidies were seen financial grants subsidized trade financing, state loans, guarantees or subsidized interest payment.

Based on the practices and initiatives of the countries under this case study, Bangladesh can take a range of policy measures and initiatives as alternatives to cash incentives on export receipts which are listed below:

i. ***Subsidized Trade Financing:*** Trade finance represents the financial instruments and products that are used by companies to facilitate international trade and commerce and protect against international trade's unique inherent risks. A few of the financial instruments used in trade finance are line of credit, factoring, export credit or working capital and insurance. The government can use these instruments to the business community at subsidized rates through the financial institutions.

ii. ***Strengthening the business base:*** Need to strengthen the business base by diversifying exports, increasing productivity, finding new markets and value addition to make export competitive.

iii. ***Self-reliant export-oriented industries:*** the government in consultation with the stakeholders needs to set out a roadmap to make self-reliant export-oriented industries.

iv. ***Trade Facilitation:*** Government and industry stakeholders may earn more revenue by promoting exports through country and product branding, exhibition and adding more valuable products to the export basket.

v. ***Tax incentive and simplification of financing:*** Tax incentives (such as tax credits or reduced tax rate), equity infusions, soft loan, government provision of goods and services and procurement on favorable terms and price supports can be alternative to the export subsidies. The actions may be taken at both local and national levels, either directly by the government or by another entity (through a state-owned enterprise).

vi. ***Subsidized interest payments:*** Low-cost lending or subsidized interest can be given to the local businesses including SMEs by the banks and NBFIs for their uninterrupted smooth business operations.

vii. ***Setting up sector-based central warehouse:*** To maintain the availability of raw materials for export-oriented industries' setting up sector-based central warehouse is needed to keep the supply chain uninterrupted.

viii. ***Setting up warehouses abroad:*** Government needs to provide necessary policy support for setting up warehouses in different parts of the world to expand Bangladeshi product market in the global market.

ix. ***Conducting Research on Industry Modernization Fund:*** Joint research study can be done in consultation with the private and public sectors to identify the potential areas for industry modernization Fund alternative to subsidies.

x. ***Providing assistance to digitalization:*** The government needs to provide infrastructural support to exporters in adopting modern technology and logistics for creating digital &

smart platforms and virtual marketplaces. And, Tax and duty may be waived for investment and capital machinery required for digitalization.

xi. ***Policy supports for the production and export of intermediate goods:*** To build a strong position in the global value chain, the government would extend necessary policy support for the production and export of intermediate goods.

xii. ***Designating a special economic zone:*** Designating sector and country based special economic zone to attract foreign investment as Export Policy Order for 2021-24 designates special economic zones.

xiii. ***Establishment of testing labs:*** Establish testing labs in different parts of the country on urgent basis to ensure international-standard compliance for simplifying the export process.

xiv. ***Agricultural export subsidies:*** In case of the phasing out of agricultural export subsidies under WTO Agreement on Agriculture (AoA), Bangladesh as a net food importing developing country (NFIDC) can postpone full compliance with the provisions of the AoA and agricultural subsidies under Agreement on Subsidies and Countervailing Measures “SCM Agreement” till 2030. In the interim, an in-depth analysis on agricultural support policies in Bangladesh and the implications of AoA and SCM agreements will be needed to rationalize these support schemes to be WTO-compliant.

xv. ***Technical assistance:*** Any form of technical assistance and technical know-how transfer to enhance cost- efficient production and export.

xvi. ***Skills upgradation:*** Following the model of Vietnam and China, Bangladesh can introduce financial benefits for the necessary soft and hard skills upgradation for more efficient productivity in local industries.

5. Conclusion and Policy recommendations

Over the last two years, Bangladesh, along with other graduating LDCs, has been lobbying for the extension of trade benefits for six to nine years post-LDC graduation. At the 12th Ministerial Conference (MC12) of the World Trade Organization (WTO), a decision was made to facilitate a smooth and sustainable transition for these LDC members after their graduation. This decision indicates that Bangladesh may continue to enjoy certain LDC trade benefits even after it transitions to a developing country status in 2026. However, further negotiations are required to finalize the details of this extension. Additionally, MC12 addressed the Trade-Related Aspects of Intellectual Property Rights (TRIPS), allowing Bangladesh the possibility of continuing its patent waivers on generic medicines for a certain period post-graduation.

To create a sustainable export market for Bangladesh’s promising industries post-LDC graduation, the government should prioritize key actions. These include "Easy access to finance," which is critical for sustaining growth in export-oriented industries. Furthermore, reforming various laws such as company law, bankruptcy law, partnership law, and taxation law is essential, alongside drafting new laws like the Privacy Act and Intellectual Property Act. Rationalizing land acquisition costs or rents, improving negotiation capabilities, engaging in country branding activities, and adapting to Fourth Industrial Revolution (4IR) technologies should also be prioritized. In the international arena, Bangladesh needs to negotiate for easing the Rules of Origin (RoO) requirements, push for tariff liberalization, and sign Free Trade Agreements (FTAs) and Preferential Trade Agreements (PTAs) with key trade partners and blocs.

The government must also focus on capacity building for proper investment appraisal and ensure compliance to achieve international standards. Bangladesh can look to proven strategies implemented by other developing countries, such as offering subsidized interest payments, tax incentives, subsidized trade financing, and trade facilitation measures, to steer the country's export sector in the new business reality post-2026.

In alignment with the study's quantitative and qualitative findings, several key recommendations emerge to further strengthen Bangladesh's export-oriented industries. First, the government should encourage projects that promote self-sufficiency in raw material production, such as cotton cultivation and the domestic production of spare parts for the Ready-Made Garments (RMG) sector. Incentivizing businesses involved in the production of these spare parts will enhance local production capacity. In the light-engineering sector, it is essential to locally produce quality control devices, as Bangladesh has sufficient facilities to manufacture these items.

The pharmaceuticals sector, which holds considerable promise, can benefit from greater government facilitation, particularly in securing intellectual property rights and improving access to low-cost working capital. For the leather and leather products sector, efforts should focus on increasing exports to Asian markets to capitalize on regional demand and offset potential declines in European market access. The technology sector, particularly IT and hardware industries, must prioritize the construction of high-tech parks and adopt long-term strategies to remain competitive in the global tech market.

Moreover, the government should help jute and jute-diversified product companies tap into new markets through bilateral agreements, thereby increasing export opportunities. Improving logistics and infrastructure across sectors is also essential to boost the country's overall competitiveness. Finally, ensuring strong support from government stakeholders is crucial for creating a sustainable business environment. Additionally, the efficiency of both backward and forward linkage industries must be enhanced to fortify supply chains and boost export performance in the post-LDC era.

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Appendix

Table: A1 Thresholds for overall scores at different levels of importance for (121 respondents and 24 variables)	
Degree of Importance	**Threshold of Scores for each variable**
Highly Important	544-605
Important	423-543
Neutral	302-422
Unimportant	181-301
Highly unimportant	Below 181

Table: A2 KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.742
Bartlett's Test of Sphericity	Approx. Chi-Square	503.707
	df	66
	Sig.	.000

Table: A3 Rotated Factor Matrix[a]			
	Factor		
	1	2	3
Reform of various laws such as company law, bankruptcy law, partnership law, taxation law, etc.	.721		
Drafting/formulating of new laws such as Privacy Act, Intellectual Property Act, etc.	.608		
Land Acquisition cost or rent needs to be rationalized	.591		
Easy access to finance	.637		
Improving negotiation capability	.611		
Country branding activities	.538		
Adaptation with 4IR & other state of the art technologies	.729		
Negotiation for easing the requirements of Rules of Origin (Roo)		.638	
Negotiation in international market for tariff liberalization		.882	
To sign FTA, PTA with Major Trade Partners and Blocs		.626	
Capacity building for proper investment appraisal			.742
To ensure compliance for achieving international standards			.599

Extraction Method: Principal Axis Factoring. Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

Question1: Which export sector does your business belong to?

Table: A4	**Number**	**Percent**
Agro-Processing	36	29.8
Textile & RMG	22	18.2
Jute & Jute Goods	22	18.2
Pharmaceuticals	13	10.7
Leather & Leather goods	11	9.1
Light Engineering	9	7.4
IT & ITES	8	6.6
Total	121	100.0

Question2: Do you know that you may be deprived of International Support Measures like DFQF facility after LDC graduation?

Table: A5	**Number**	**Percent**
Yes	79	65.3
No	42	34.7
Total	121	100.0

Question3A: Lack of supportive legal framework

Table: A6	**Number**	**Percent**
Highly Important	74	61.2
Important	41	33.9
Neutral	5	4.1
Unimportant	1	.8

Total	121	100.0

Question3B: Lack of preferential market access

Table: A7	Number	Percent
Highly Important	63	52.1
Important	47	38.8
Neutral	10	8.3
Unimportant	1	.8
Total	121	100.0

Question3C: Cost of doing business

Table: A8	Number	Percent
Highly Important	91	75.2
Important	23	19.0
Neutral	6	5.0
Unimportant	1	.8
Total	121	100.0

Question3D: Lack of capacity of competition

Table: A9	Number	Percent
Highly Important	83	68.6
Important	32	26.4
Neutral	6	5.0
Total	121	100.0

Question4A: Reform of various laws such as company law, bankruptcy law, partnership law, taxation law, etc.

Table: A10	Number	Percent
Highly Important	72	59.5
Important	35	28.9
Neutral	12	9.9
Highly Unimportant	2	1.7
Total	121	100.0

Question4B: Drafting/formulating of new laws such as Privacy Act, Intellectual Property Act, etc.

Table: A11	Number	Percent
Highly Important	65	53.7
Important	49	40.5
Neutral	5	4.1
Unimportant	2	1.7
Total	121	100.0

Question4C: Negotiation for easing the requirements of Rules of Origin (Roo)

Table: A12	Number	Percent
Important	62	51.2
Highly Important	35	28.9
Neutral	23	19.0
Unimportant	1	.8
Total	121	100.0

Question4D: Negotiation in international market for tariff liberalization

Table: A13	Number	Percent
Important	57	47.1
Highly Important	39	32.2
Neutral	24	19.8
Highly Unimportant	1	.8
Total	121	100.0

Question4E: To sign FTA, PTA with Major Trade Partners and Blocs

Table: A14	Number	Percent
Important	55	45.5
Highly Important	40	33.1
Neutral	26	21.5
Total	121	100.0

Question4F: Rationalization of Non-tariff Barriers like Sanitary and Phytosanitary (SPS) Measures, and Para Tariffs in various

Table: A15	Number	Percent
Important	73	60.3
Highly Important	31	25.6
Neutral	16	13.2
Unimportant	1	.8
Total	121	100.0

Question4G: Land Acquisition cost or rent needs to be rationalized

Table: A16	Number	Percent
Highly Important	81	66.9
Important	31	25.6
Neutral	5	4.1
Unimportant	4	3.3
Total	121	100.0

Question4H: Easy access to finance

Table: A17	Number	Percent
Highly Important	98	81.0
Important	18	14.9
Neutral	5	4.1
Total	121	100.0

Question4I: Ensuring supply of skilled manpower

Table: A18	Number	Percent
Highly Important	84	69.4
Important	36	29.8
Neutral	1	.8
Total	121	100.0

Question4J: Improving Efficiency of Backward and Forward Linkage industries

Table: A19	Number	Percent
Important	62	51.2
Highly Important	49	40.5
Neutral	9	7.4
Unimportant	1	.8
Total	121	100.0

Question4K: Support from relevant people of the Govt. to ensure sustainable environment

Table: A20	Number	Percent
Highly Important	78	64.5
Important	38	31.4
Neutral	5	4.1
Total	121	100.0

Question4L: To ensure rights of access to information at affordable cost

Table: A21	Number	Percent
Highly Important	85	70.2
Important	32	26.4
Neutral	4	3.3
Total	121	100.0

Question4M: Improvement of overall logistic and infrastructure facilities

Table: A22	Number	Percent
Highly Important	96	79.3
Important	22	18.2
Neutral	3	2.5
Total	121	100.0

Question4N: Increase managerial capacity

Table: A23	Number	Percent
Highly Important	62	51.2
Important	53	43.8
Neutral	6	5.0
Total	121	100.0

Question4O: Capacity building for proper investment appraisal

Table: A24	Number	Percent
Important	70	57.9
Highly Important	37	30.6
Neutral	14	11.6
Total	121	100.0

Question4P: To ensure compliance for achieving international standards

Table: A25	Number	Percent
Important	63	52.1
Highly Important	50	41.3
Neutral	7	5.8
Unimportant	1	.8
Total	121	100.0

Question4Q: Improving negotiation capability

Table: A26	Number	Percent
Highly Important	71	58.7
Important	47	38.8
Neutral	3	2.5
Total	121	100.0

Question4R: Country branding activities

Table: A27	Number	Percent
Highly Important	85	70.2
Important	31	25.6
Neutral	4	3.3
Unimportant	1	.8
Total	121	100.0

Question4S: Enhancement of R&D led innovation

Table: A28	Number	Percent
Highly Important	68	56.2
Important	50	41.3
Neutral	3	2.5
Total	121	100.0

Question4T: Global partnership development

Table: A29	Number	Percent
Important	65	53.7
Highly Important	33	27.3
Neutral	23	19.0
Total	121	100.0

Question4U: Manufacturing high-end diversified products

Table: A30	Number	Percent
Highly Important	62	51.2
Important	47	38.8
Neutral	11	9.1
Unimportant	1	.8
Total	121	100.0

Question4V: Adaptation with 4IR & other state of the art technologies

Table: A31	Number	Percent
Highly Important	76	62.8
Important	35	28.9
Neutral	9	7.4
Unimportant	1	.8

Total	121	100.0

Question4W: Re-skilling & up-skilling of the existing work force

Table: A32	Number	Percent
Important	64	52.9
Highly Important	51	42.1
Neutral	6	5.0
Total	121	100.0

Question4X: To facilitate export of non-conventional products

Table: A33	Number	Percent
Important	67	55.4
Highly Important	49	40.5
Neutral	5	4.1
Total	121	100.0

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Attracting FDI in Bangladesh Challenges & Way Forward upon LDC Graduation

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Abstract

As Bangladesh approaches its graduation from Least Developed Country (LDC) status in near future, the nation faces critical economic transitions that will shape its future growth trajectory. As FDI currently contributes less than one percent to the GDP, understanding the barriers and opportunities for improving this inflow is critical for sustaining economic growth post-graduation. This study aimed to analyze the factors hindering FDI in Bangladesh and explore potential strategies for improvement. The research identified bureaucratic complexity, high business costs, and inadequate infrastructure as the primary challenges impeding FDI. Moreover, it highlighted the adoption of technological advancements, enhanced transparency, and improved managerial capabilities as the most significant measures to attract foreign investments. Based on primary survey data from 120 industry representatives and 16 key informant interviews (KIIs), this study found that while bureaucratic hurdles remain a significant barrier, there are viable pathways for reform. The findings underscore the necessity of adopting a multifaceted approach to enhance the investment environment in Bangladesh, ensuring that the country can maintain its economic momentum post-LDC graduation.

Keywords: FDI, LDC Graduation, Economic Reform, Investment Barriers.

1. Introduction

Since independence in 1971, Bangladesh has undergone an amazing transformation to become one of the fastest growing economies in the world, averaging 6% plus growth over the past decade until pandemic hits and 7.10% growth in FY2022. Per capita income has increased from below $100 in FY1973 to $ 2,793 in FY2022. A major contributor to this performance is exports, rising from below $0.4 billion in 1973 to $52.8 billion in FY2022. Touching the milestone of 100% electrification is another major achievement of Bangladesh in FY2022. Meanwhile, Bangladesh has met all three criteria for LDC (Least Developed Country) graduation in the first review in March 2018 and in the second review in 2021[1].

Research, however, shows that to transform Bangladesh into a developed country, investment-to-GDP ratio needs to be raised to around 40-44% of GDP (Haider, 2023). Currently the investment-to-GDP ratio in Bangladesh is hovering around 30%. The public investment-to-GDP ratio was 7.53% in FY22, up from 7.32% in FY2021, and 6.96% in FY2019. On the other hand, the private investment-GDP ratio was 25.25 percent in FY2019, which fell to 23.70 % in FY 2021, and then rose to 24.52% in FY2022 (BBS, 2022). It is expected that LDC graduation will result in an improved country-image and higher rating for investment by international rating agencies, enabling Bangladesh to attract larger FDI) (Bhattacharya, 2021).

It is also remembered that there is a number of risk factors for Bangladesh associated with its LDC graduation. After LDC graduation, the country will lose the preferences in the market of the European Union, Canada, Australia, Japan, India, and China in 2029. Economists predict that total exports of Bangladesh might fall due to loss of preferential treatment. The country will no longer be eligible for loans on easy terms which may lead to balance-of-payments problems. Official Development Assistance (ODA) and other concessional financing may significantly decline (SANEM, 2018). For meeting the LDC graduation challenges, economists suggest that the country needs to attract large volume of the private sector investment and FDI by taking proactive measures to improve its trade competitiveness, physical and social infrastructures, and quality of economic and political institutions, reform in trade policy, monetary and fiscal policies, industrial policy and ensure quality service delivery by the public (SANEM, 2018).

Graduation from the LDC status in 2026 amidst the onslaught of the Covid pandemic and the impacts of the Russia-Ukraine War is going to be an incredible achievement in the history of Bangladesh. It also will usher in a new set of challenges with which we have to grapple to maintain the economic prosperity of the country. If Bangladesh graduates from the list of LDCs, the benefits it currently has under WTO rules will be discontinued from 2026. Exporters will have to endure tough competition after Bangladesh graduates from LDC as export products will face more tariff on average when entering international markets. According to recent report, Bangladesh's export earnings can fall by $537 billion a year if it loses duty-free facilities. To meet these challenges,

[1] The most recent triennial review by the Committee for Development Policy (CDP) has confirmed that Bangladesh is eligible to exit from the LDC category having crossed the threshold of three defining criteria namely per capita GNI, Economic and Environmental Vulnerability Index (EVI) and Human Assets Index (HAI). In the 2021 review, Bangladesh stands strongly in all three criteria with a per capita GNI of 1827 USD (requirement being USD 1222), EVI of 27 (requirement being 32 or below), and HAI of 75.4 (requirement being 66 or above).

FDI can be a vital external private source of financing in Bangladesh. To attract FDI, Bangladesh government has taken initiatives to develop its domestic physical infrastructure and financial markets and promote a business-friendly ‘enabling environment’. In the late 1980s and the 1990s, Bangladesh announced a series of measures and liberalized its FDI policy framework. In recent years, Bangladesh has significantly improved its investment and regulatory environment, including the liberalization of the industrial policy, abolition of performance requirements and allowance of full foreign-owned joint ventures. Since 1996, new sectors have been opened up for foreign investment, including the telecommunications sector.

As a result, Bangladesh is quite successful in attracting FDI inflows since the inception of economic reform in 1995. The inflow of FDI has contributed significantly to the economic development of Bangladesh. Cumulative Net FDI inflows in Bangladesh stood at $ 28.40 billion from 2006 to 2021, of which net equity capital was $10.25 billion (Bangladesh Bank, 2021). Despite the success in attracting FDI in recent years, FDI flow is still visibly low in Bangladesh compared to major developing countries. Since 2015, Bangladesh has been attracting an average of $2.5 billion in FDI per year, reaching a peak of $3.6 billion in 2018. Whereas, India is attracting $40 billion FDI per year. Therefore, economists identify that Bangladesh’s inability to attract FDI at a scale and pace consistent with the investment needs of the economy is the single most important challenge in its economic management (Mansur, 2012, p. 39).

Against this backdrop, the Research & Development Department (R&D) of the Dhaka Chamber of Commerce & Industry (DCCI) aims to conduct a study to identify the challenges and way forward in attracting FDI in Bangladesh upon LDC graduation. This study will also attempt to offer some policy recommendations on facilitating increased foreign direct investment and diversifying the export market.

Bangladesh, a densely populated country located at South Asia, is passing through the phase of demographic dividend that emerged in 2007 having more than 65% of our population is of working age, between 15 and 64. However, the economic growth has also failed to create enough jobs for the millions of young Bangladeshis joining the workforce every year. Providing employment opportunity to such a huge population is quite difficult task for the government as well as local private sector. Therefore, government is welcoming foreign investment into Bangladesh to facilitate employment opportunity, foster economic growth and poverty alleviation. The government is offering many fiscal and non-fiscal incentives to the FDI investors. The government also took many initiatives to attract FDI into the country through international road show, special tax holiday, 100% repatriation of dividend and invested capital, resident ship, citizenship and many more lucrative offers are available for the foreign direct investors in Bangladesh. Factor of production like land, labor etc. are available at a competitive rate here. But rate of FDI investment into Bangladesh is not getting momentum. To address this problem, this study aims to analyze how Bangladesh could increase FDI inflow to facilitate employment generation, increase GDP growth rate, technology transfer and finally poverty alleviation.

The specific objectives of the study are to identify the challenges of attracting foreign direct investment (FDI) upon LDC graduation and to find a strategic way forward to prepare Bangladesh to attract FDI by enabling sustainable growth of local industries.

The research findings of this study are expected to be of interest to the business community, as well as professionals including policy makers as it offers valuable insights and policy directions on attracting FDI in Bangladesh to address the post-LDC graduation challenges. The rest of the study has been structured as follows. Section 2 briefly reviews relevant theoretical and empirical literature related to the economic significance of attracting FDI. Section 3 explains the methodology employed to conduct the study. Section 4 reports the quantitative and qualitative findings of the study while Section 5 presents the way forward based on the opinions of the respondents on a set of recommendations. Section 6 provides concluding remarks.

2. Literature review

Until the mid1980s, developing countries worldwide had a negative attitude towards foreign direct investment (FDI) and a large number of developing countries adopted closed macroeconomic policies i.e., import substitution industrialization. However, since the late 1980s the conception started to shift in favor of FDI inflows into developing countries, due to the potential positive contribution of FDI to growth through capital formation and technology transfer. The policymakers began to realize from a macro perspective that FDI has high potential to generate employment and enhance productivity, competitiveness, and technology spillovers. Though attracting FDI, a country can achieve higher exports and get access to international markets and international currencies (Denisia, 2010).

As part of developing countries, major South Asian economies including Bangladesh, India, Nepal, Pakistan and Sri Lanka moved to liberalize their trade and investment policies to include various investment incentives, particularly, to attract FDI for foreign investors (Mortaza & Das, 2007). Riding on a growing domestic market, a large number of low-paid workers with growing number of skilled personnel and a more favorable investment climate, South Asia, as a group, has been successful in attracting a significant amount of FDI and raising its volume of trade (export plus import) as percentage of GDP since 1990s (Mortaza & Das, 2007). This leads to a body of empirical evidence that FDI inflows contributes to economic growth (Lim, 2001). FDI has played a vital role in growth and development in Asia Pacific region (Bangladesh Bank, 2022).

Attracting FDI has been a key feature of economic policymaking over the last few decades especially in countries graduating from LDCs[2]. FDI as an important element of economic development FDI performs a multidimensional role in the overall development of these economies. Selelo (2012) analyses determinants of fixed FDI in Botswana for the period 1980-2007. The study used the accelerator theory of investment to uncover the effects of FDI on the national economy and finds that economic growth rates better explain FDI flows in Botswana. Siphambe (2008) identifies the following factors that have put Botswana in an advantageous position and strengthened FDI in the process: a stable political environment; and stable macroeconomic policy,

[2] The concept of the least developed countries (LDCs) originated in the late 1960s by the United Nations and the first group of LDCs was listed in November 1971. LDCs include countries exhibiting lower achievements in socioeconomic development. After the listing of LDCs, six countries graduated between 1994 and 2020. Botswana was the first country to graduate from LDCs in 1994, followed by Cabo Verde in 2007, Maldives in 2011, Samoa in 2014, Equatorial Guinea in 2017, and Vanuatu in 2020 (UN, 2023b). Out of 46 LDCs, seven (7) countries are set to graduate from LDCs between 2023 and 2026. Bhutan will graduate in 2023, Angola, Sao Tome and Principe, and Solomon Islands in 2024, and Bangladesh, the Lao Republic and Nepal in 2026 (UN, 2023a).

competitive exchange rate relative to the South African rand, low crime level, good human capital development, and good labor relations. Cabo Verde is a high-cost economy with few economies of scale because of its low proportion of arable land, lack of natural resources, small population, and overdependence on foreign investment, imports, development aid, and remittances. Despite the challenges, in 2007, Cabo Verde graduated from least developed country status as the first and only country in the first decade of the 21st century. In addition, the country has met most of its Millennium Development Goals by 2015 (US Department of State, 2022).

Duarte, Kedong, & Xuemei, (2017) examines the relationship between foreign direct investment (FDI), economic growth and financial development in Cabo Verde for the period 1987-2014 and found a positive effect of FDI on the economic growth. They concluded that higher levels of FDI inflow can ensure higher levels of economic growth and vice versa for the economy of Cabo Verde. Furthermore, they found that both economic growth and domestic credit to private sector are important factors in stimulating the FDI into the country. These results found are important for the country policymakers to take appropriate measures to enhance and improve the condition for FDI inflow in Cabo Verde.

In the Maldives, foreign investment is governed by the Foreign Investment Act (25/79) and after LDC graduation in 2011, Maldives enacted the Special Economic Zones Act (Law 24/2014) in 2014 which allows market access for all major sectors of the economy expect few sectors to shield local investors like Photography and related activities, retail trade, ownership, operation, and management of travel agencies, guest-houses, tour guiding and tour operating facilities etc. Maldives was able to attract FDI in recent years among small island developing states (SIDS) being the third top FDI recipient having received USD 565 million thanks to investment in the tourism industry (Najeeb, 2020).

Since the mid-1980s, Bangladesh has implemented trade related reforms and measures which included a significant decline in quantitative restrictions, opening up of trade in many restricted items, rationalization of import tariffs, and liberalization of the foreign exchange regime (Razzaque, et al. 2003). For this reason, since the beginning of 1990s, Bangladesh has emerged as the most systematic foreign investment regime in South Asia. Due to various facilitating steps to attract FDI, net FDI inflow stood at $ 3439.63 million in FY 2021-22 (Bangladesh Bank, 2022) from just over $300 million in 2000 and about $692 million in 2005. Mortaza and Das (2007) empirically show that FDI and trade liberalization causes economic growth in the case of Bangladesh. They also found that FDI has a dynamic and positive impact on the domestic investment of Bangladesh with positive and dynamic impact of domestic investment itself (Mortaza and Das, 2007). Despite this positive impact of FDI on the economy, Bangladesh has lagged behind and received low FDI inflow compared to other South Asian countries.

Now looking at the sector-specific Net FDI Inflows in the year 2021, we find that the highest amount of $1013.08 million or 35.0% of FDI came in the manufacturing sector. Of which textiles & wearing drew $ 553.74 million or 19.1% of the total FDI. Power, gas and petroleum is second highest with 707.24 million or 24.4% of the total FDI. Trade and commerce accounts for $ 621.12 million or 21.5% of the total FDI, the banking sector $ 239.09 million or 8.3%, services with $ 235.37 million or 8.1% of the total FDI, and transport, storage & communication with $191.03 million or 6.6% of the total FDI is positioned as the third, fourth and fifth highest sectors of FDI attractions respectively. On the other hand, looking at country-wise net FDI inflows in 2021, we find that Bangladesh attracted the highest FDI from U.S.A, at $585.88 million or 20.2% of the total FDI, followed by China at $407.88 million or 14.1% of the total FDI, Singapore at $298.69 million or 10.3% of the total FDI, U.K. at $296.01 million or 10.2% of the total FDI.

From the preceding discussion, it can be said that the current status of net FDI inflow to Bangladesh is not satisfactory. Despite this, over the past decade, Bangladesh has been among the fastest growing economies supported by a robust demographic dividend, strong RMG exports, resilient remittance inflows, and stable macroeconomic conditions. However, any development model with low FDI inflows may not be sustainable in the long term and low FDI inflows may be a hindrance to achieving the desired level of development, especially achieving the upper-middle income county status by 2031 and a developed country by 2041. Therefore, the respective authorities need to put efforts in attracting more FDI inflows to Bangladesh taking the upcoming challenges of LDC graduation into consideration. Bangladesh should create a brand in the world stages as a booming market so that foreign investors feel confident to invest in Bangladesh. On the way to transition from LDC, we have performed satisfactorily in the Economic Fragility Index criteria. It means Bangladesh economy is less risky. These factors will have a positive impact on the perception of investors. These possibilities should be exploited.

Bangladesh is increasingly becoming a lucrative destination for Japanese FDI because of the rising cost of labour in China and other ASEAN countries and the US-China trade war. In 2018, Japan was the single largest investor country in Bangladesh. At present, more than 320 Japanese companies operate here. While the economic zone in Araihazar is likely to attract $1 billion investment from Japan and create one lakh employments, JICA is conducting a feasibility assessment of the Mirsarai economic zone and intends to examine the possibility of another economic zone in the Matarbari-Maheshkhali area. The dividend of Japanese FDIs can significantly contribute in achieving the targets of the 8th Five-Year Plan, the Sustainable Development Goals and Vision 2041 (Al-Mamun, 2022).

3. Research Methodology

This study is exploratory in nature, designed to gain an in-depth understanding of the challenges and opportunities related to FDI in Bangladesh. The research sought to investigate the perceptions and opinions of key private sector industries on the factors influencing FDI attraction. Given the exploratory nature of the study, both quantitative and qualitative research techniques were employed to identify and analyze the primary barriers to FDI, as well as potential strategies for improvement.

The study gathered primary data from 120 industry representatives across various sectors, including pharmaceuticals, jute, leather, light engineering, agribusiness, cement, steel, and RMG & textiles. A structured questionnaire was developed in both Bengali and English to ensure inclusivity and accessibility for participants. The questionnaires were distributed via email, with data collection facilitated through KoBoCollect, a widely recognized open-source toolkit for data collection and analysis. This approach allowed for efficient, paperless data gathering, capturing both numeric and descriptive data. Additionally, 16 Key Informant Interviews (KIIs) were conducted with three academicians and 13 industry representatives to validate and enrich the findings from the survey.

A non-probability (purposive) sampling technique was employed to select 120 participants from key industries within the private sector. This non-probability sampling method was chosen to ensure that the study focused on industry representatives who possess substantial knowledge and experience related to FDI in Bangladesh. The targeted approach allowed the research to gather relevant insights from those directly impacted by FDI-related issues. The structured questionnaire was disseminated electronically, and participants were continuously followed up for two weeks to enhance response rates.

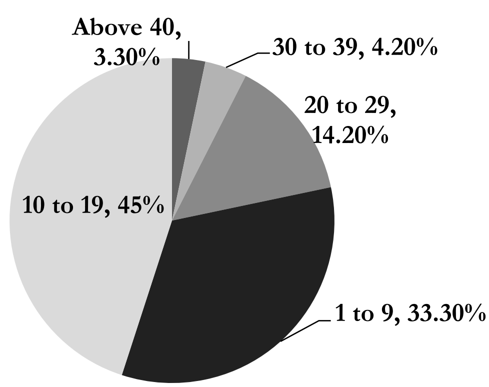
The study utilized a mixed-methods approach, combining both quantitative and qualitative research techniques to provide a comprehensive analysis of the factors affecting FDI in Bangladesh. The primary survey data were analyzed using descriptive statistics, while the qualitative data from the KIIs were thematically analyzed to identify key challenges and opportunities. The research process spanned around 1.5 months, during which the data were collected, analyzed, and synthesized to present a coherent understanding of the FDI scenario in Bangladesh.

4. Analysis and Findings

4.1 Descriptive Analysis

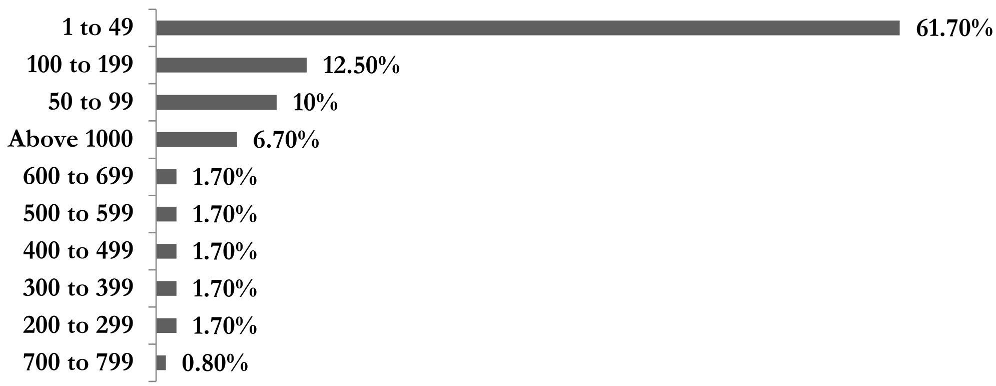
Chart 1 shows, 45% of respondents stated their business tenure is 10 to 19 years while 33.3% said that their business tenure is 1 to 9 years. 14.2% of respondents opined that their business tenure is 20 to 29 years whereas 4.2% claimed that their business tenure is 30 to 39 years. 3.3% of respondents stated that their business tenure is above 40 years.

Chart 1: Tenure of Businesses



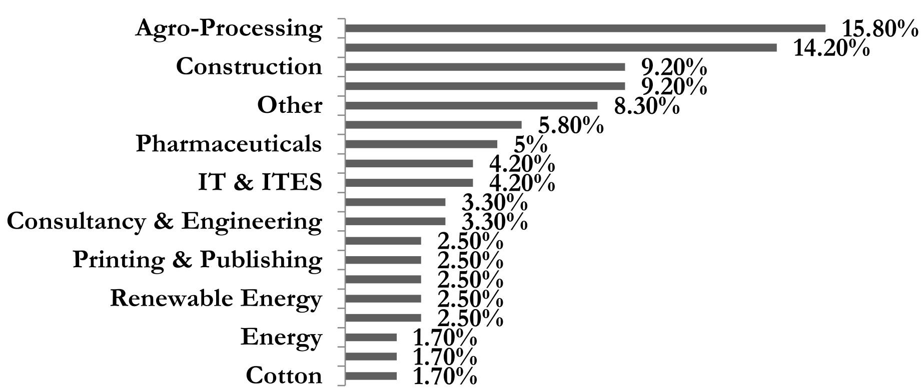
As shown in Chart 2, 61.7% respondents stated that the number of employees in their businesses is 1 to 49; 12.5% respondents said that the number of employees in their businesses is 100 to 199; 10% respondents said that the number of employees in their businesses is 50 to 99; 6.7 % respondents said that the number of employees in their businesses is above 1000. Each of 1.7% of respondents stated that the number of employees in their businesses is ranging from 600 to 699, 500 to 599, 400 to 499, 300 to 399, and 200 to 299. On the other hand, 0.8% respondents said that the number of employees in their businesses is 700 to 799.

Chart 2: Number of employees



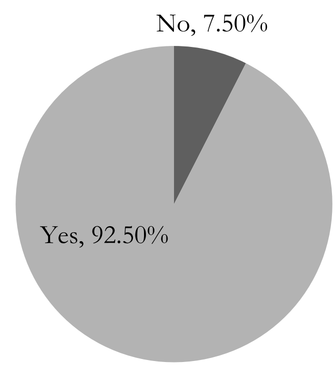
Among them, 58% of respondents represented the Small industry, 18% of respondents represented the Medium industry, 13% of respondents represented the Micro industry and 11% of respondents represented from Large Industry. Moreover, 15.8% respondents stated that their industry belongs to Agro-processing, and 14.2% said their industry belongs to RMG & Textile. Each of 9.2% of respondents said that their businesses belong to both Construction and Light Engineering. 5.8% of respondents stated that their businesses belong to the import and supply side, and 5% of respondents said that their businesses belong to Pharmaceuticals. Each of 4.2% of respondents stated that their industry belongs to both Jute & Jute Goods and IT&ITES. Each of 3.3% of respondents stated that their industry belongs to both Consultancy & Engineering and Medical equipment. Each of 2.5% of respondents stated that their industry belongs to Plastic, Renewable Energy, Shipbuilding, Printing & Publishing, and Packaging; 1.7% of respondents stated that their industry belongs to Cotton, cosmetics, and Energy. However, 8.3% of respondents stated that their industry belonged to other sectors such as Leather & Leather goods, Air Conditioning, Battery Industry, Electronics, Elevator, Fertilizer, Fire Fighting, Lubricants, Stainless, Steel, and Stone processing.

Chart 3: Type of Businesses



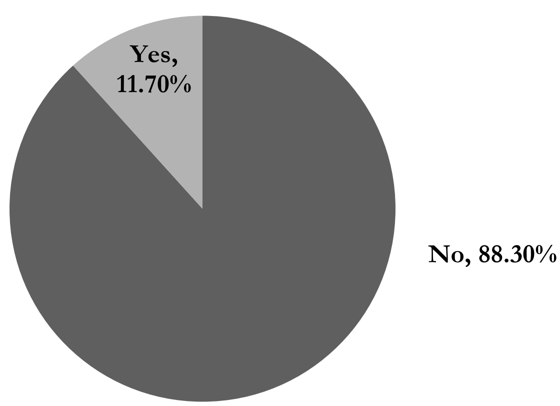
Bangladesh is set to graduate from the Least Developed Countries (LDCs) in 2026. Chart 4 shows, 92.5% of respondents stated that they are aware of this issue and only 7.5% respondents said that they are unaware.

Chart 4: Awareness regarding LDC graduation



Among them, 88.3% stated that they think attracting FDI can be a way to address the challenges in the post-LDC graduation era whereas 11.7% of respondents responded negatively to this question. Chart 5 shows, 83.3% of respondents stated that their businesses do not receive any form of Foreign Direct Investment (FDI) whereas 11.7% of respondents said that their businesses receive Foreign Direct Investment.

Chart 5: Whether receive any form of FDI



Only 14 respondents receive Foreign Direct Investment (FDI). Among the respondents who receive FDI, 85.7% stated that the amount of FDI is approximately 1 million to 250 million and 14.3% respondents said the amount of FDI is approximately 251 million to 500 million. Chart 6 shows, 12.50% respondents stated that China, India, UAE and Malaysia are their major destinations for FDI attraction. Each of 8.30% respondents stated that USA and Japan are the major destinations for their FDI attraction while each of 4.20 % respondents said that Canada, UK, South

Korea, Singapore, France, Germany, Netherlands and Turkey are their main destinations for FDI attraction.

Chart 6: Major destinations for FDI attraction

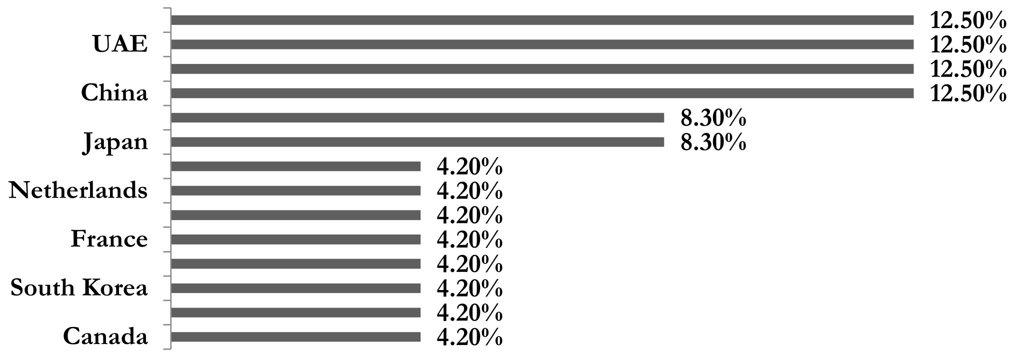
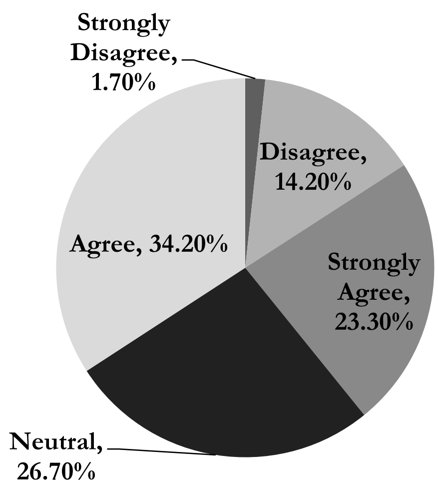


Chart 7 shows, 34.2% agreed that LDC Graduation can be a huge potential to attract FDI. However, neutral responses came from 26.7% of respondents. 23.3% of the respondents strongly agreed with this. But 14.2% of respondents disagreed and 1.7% of respondents strongly disagreed with the idea that LDC Graduation can be a huge potential to attract FDI. Among the response, 65.8% of respondents stated that their businesses are not able to attract FDI as per industries potential whereas 34.2% of respondents said that their businesses are able to attract FDI as per industries potential.

Chart 7: Huge potential to attract FDI after LDC graduation

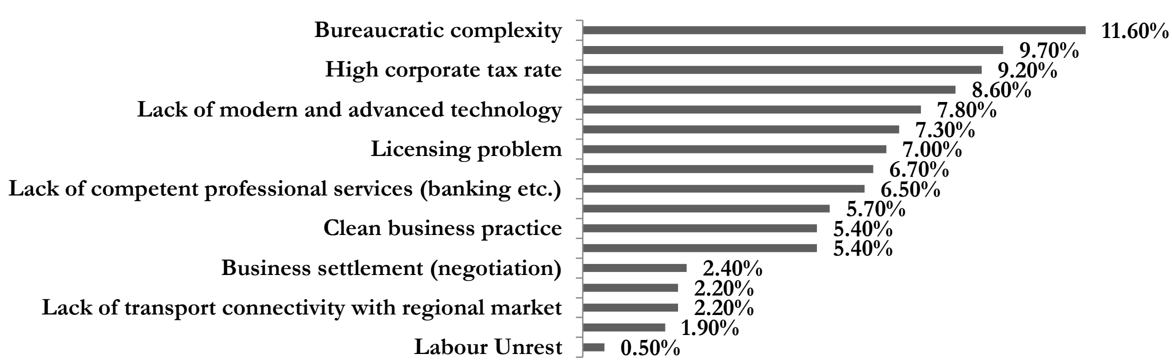


To continue the industries' trend of attracting FDI, 52.90% respondents recommended maintaining very competitive investment climate, 35.30% of respondents recommended impressive fiscal and non-fiscal incentives and 11.80% respondents recommended other such as easing the Bangladesh visa processing for the foreigners. It was also recommended to ensure full support from Govt. office to establish and run the business smoothly, Automation of government process, Transparent one stop services and cost-effectiveness, Stopping approval of licenses under political influences and addressing bureaucratic complication, Minimizing too much difference between Local and Foreign currency conversion rate, Maintaining smooth management system to provide all facilities, Sustainability in business as per international code of conduct.

In this survey, respondents' reactions were picked up about the 'Challenges of attracting FDI' in Bangladesh after LDC graduation. Chart 8 shows, 11.6%, 9.7%, 9.2%, 8.6%, 7.8%, 7.3%, 7.0%, 6.7% and 6.5% respondents considered, Bureaucratic complexity[3], Higher cost of doing business, High corporate tax rate, Weak supply chain and logistic facility, Lack of modern and advanced technology, Lack of Skilled labour, Licensing problem, Regulatory challenges (insolvency act, bankruptcy act foreign exchange regulation act, etc.) and Lack of competent professional services (banking etc.) respectively as the challenges to attract FDI in their industry. On the other hand, Lack of Utility services, Lack of ESG (Environmental, Social, and Governance) compliance, Clean business practice, Business settlement (negotiation), Lack of transport connectivity with regional market, Lack of IT and telecom services and Labour Unrest were reported by 5.7%, 5.4%, 5.4%, 2.4%, 2.2%, 1.9% and 0.5% respondents respectively considering as challenges to attract FDI in their industry.

Only 2.2% of respondents considered other factors as challenges to attract FDI as Not trying for FDI, Indifference of the government to ensure policy and legal support to increase the rate of foreign investment in small and medium enterprises, Indifference of the government to the overall development of the jute sector, Inefficient and mismanaged Ministry of Finance, Bangladesh Bank and Banking Sector, Doing whatever the unscrupulous big business wants and with no accountability, Legal complexities in the field of TAX & VAT, Reliability issue. Scarcity of quality materials of construction materials.

Chart 8: Challenges of attracting FDI



4.2 Factors that can attract FDI in Bangladesh after LDC graduation

[3] Bureaucratic complexity is the degree of complexity in a bureaucracy, which is an administrative system with many officials and multiple layers of processes. Bureaucratic complexity can be measured by the number of procedures required to start a business (Seim, & Søreide, 2009).

FDI demands acquisition and know-how of technology. When the respondents were asked about the 'Adoption of Technological know-how in production system' as the factor that can attract FDI in Bangladesh after LDC graduation. 44.2% agreed while 50% strongly agreed with this. However, 2.5% of respondents were neutral and also equal percentage of respondents disagreed (2.5%). Only .8% of respondents strongly disagreed regarding this factor.

Marketing capability is highly required by formulating relevant adaptive marketing strategies to create customer value for respectable profit and to attract more FDI. The respondents were asked how much they agree with the factor 'Marketing capability' that can attract FDI in Bangladesh after LDC graduation. Regarding this factor, 48.3% of respondents agreed and 39.2% strongly agreed. Whereas 8.3% were neutral, 3.3% disagreed and only 0.8% strongly disagreed.

Table 1: Factors affecting the FDI attraction in Bangladesh

Factors	Percentage of response				
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Adoption of Technological know-how	50	44.20	2.5	2.5	0.80
Marketing capability	39.20	48.30	8.30	3.30	0.80
Managerial capability	45	45	7.50	1.70	0.80
State of technology	40.80	45	8.30	3.30	2.50
Capital Market Development	39.20	37.50	15	5	3.30
Supply chain network connected with global value chain	42.50	41.70	8.30	4.20	3.30
Country branding	41.70	45	10.8	1.7	0.80
Diverse workforce	36.70	50.80	9.20	3.30	0
Low labour cost	31.70	46.70	12.50	5	4.20
Strong ICT service	45	42.5	8.30	4.20	0
Uninterrupted Utility services with competitive market price (gas, electricity etc.)	45	38.30	9.20	7.50	0
Low cost of doing business	40.80	41.70	10	7.50	0
Reduced tax regime	35.80	39.20	15.80	5	4.20
Competitive tariff structure	40	40.80	14.20	3.30	1.70
Automation of tax system, Business operations and public service facilities	44.20	38.30	8.30	6.70	2.50
The growing importance of the logistics sector in the economy	40	43.30	12.50	2.50	1.70
Enhance transparency and digitization	50.80	40	5	3.30	0.80

FDI desires good managerial skills to access highly qualified workforce. Regarding the factor 'Managerial capability' 45% of respondents strongly agreed and equal percentage (45%) of respondents also agreed about this factor. Whereas 7.5% of respondents were neutral, 1.7% disagreed and only .8% strongly disagreed.

Technology adoption is a key factor for globally competitive manufacturing and to attract more FDI. 40.8% of respondents strongly agreed and 45% agreed that ‘State of technology’ can attract FDI in Bangladesh after LDC graduation. On the other hand, 8.3% of respondents were neutral about this factor whereas 3.3% disagreed and 2.5% strongly disagreed.

An efficient capital market helps allocate capital to businesses efficiently and other side businesses in turn use the capital to generate new ideas and spread novel technologies. 39.2% of respondents strongly agreed and 37.5% agreed that ‘Capital Market Development’ can attract FDI in Bangladesh after LDC graduation. 15% of respondents were neutral about this factor while 5% disagreed and 3.3% strongly disagreed. As the supply chain network is one of the major challenges in attracting FDI in Bangladesh. 42.5% of respondents agreed and 41.7% strongly agreed that ‘Supply chain network connected with global value chain’ can attract FDI in Bangladesh. However, 8.3% of respondents were neutral about this factor while 4.2% disagreed and 3.3% strongly disagreed. Respondents were asked about ‘country branding’ as the factor that can attract FDI in Bangladesh after LDC graduation, 45% of respondents agreed while 41.7% strongly agreed. However, 10.8% of respondents were neutral about country branding. 1.7% and 0.8% of respondents disagreed and strongly disagreed respectively. Similarly, the respondents were asked how much they agree with the factor ‘Diverse workforce’ that can attract FDI in Bangladesh after LDC graduation. Regarding this factor, 50.8% of respondents agreed and 36.7% strongly agreed whereas, 9.2% were neutral and 3.3% disagreed.

Regarding the factor ‘Low labor cost’, 46.7% of respondents said that they agreed about this factor while 31.7% opined that they strongly agreed. A good number of respondents (12.5%) were neutral whereas 5% disagreed and 4.2% strongly disagreed. While the lack of adequate access to e-services has remained a challenge for digitalization in Bangladesh. 45% of respondents strongly agreed and 42.5% agreed that ‘Strong ICT service’ can attract FDI in Bangladesh after LDC graduation. On the other hand, 8.3% of respondents were neutral about this factor whereas 4.2% disagreed. As recent price hike may not secure uninterrupted energy and power supply. 45% of respondents strongly agreed and 38.3% agreed that uninterrupted utility services with competitive market price (gas, electricity etc.) can attract FDI in Bangladesh after LDC graduation. 9.2% of respondents were neutral about this factor while 7.5% disagreed.

As the cost of doing business is one of the major challenges in attracting FDI in Bangladesh, 41.7% of respondents agreed and 40.8% strongly agreed that ‘Low-cost of doing businesses’ can attract FDI in Bangladesh. However, 10% of respondents were neutral about this factor and 7.5% disagreed. The tax regime is another challenge in attracting FDI in Bangladesh. In this regard, 39.2% of respondents agreed and 35.8% strongly agreed that a ‘Reduced tax regime’ can attract FDI in Bangladesh. Although 15.8% of respondents were neutral about this factor, 5% disagreed and 4.2% strongly disagreed.

The tariff structure also plays an important role in attracting FDI for a country. In this regard, 40.8% of respondents agreed the factor ‘Competitive tariff structure’ can attract FDI in Bangladesh while 40% strongly agreed. On the other hand, 14.2% of respondents were neutral when they opined on this factor. 3.3% and 1.7% of respondents disagreed and strongly disagreed respectively while they expressed their opinion on this factor.

The lack of an efficient tax system, business operation, and public service facilities are impeding the attraction of FDI in our country. The respondents were asked about the 'Automation of tax system, Business operations, and public service facilities' as the factor that can attract FDI in Bangladesh after LDC graduation. 44.2% strongly agreed and 38.3% agreed that. On the other hand, 8.3% of respondents were neutral about this factor whereas 6.7% disagreed and 2.5% strongly disagreed.

The importance of the logistics sector in our economy is on the rise. In this point of view 43.3% of respondents agreed and 40% strongly agreed the factor 'The growing importance of the logistics sector in the economy' can attract FDI in Bangladesh. 12.5% of respondents were neutral about this factor whereas 2.5% and 1.7% expressed their opinion that they disagreed and strongly disagreed respectively regarding this. Most of the respondents (50.8%) strongly agreed about the factor 'Enhance transparency and digitization' regarding attracting FDI in Bangladesh after LDC graduation. 40% of respondents agreed while 5% were neutral on this. On the other hand, 3.3% and 0.8% expressed their disagreement and strong disagreement respectively.

In the aim of understanding the way forward to attract FDI, the respondents were asked how much do they agree with the following factors that can attract FDI in Bangladesh after LDC graduation. Table 1 depicts according to their combined response of agreement and strong agreement the top agreed factor is revealed as 'Adoption of Technological know-how in production system' followed by 'Enhance transparency and digitization', 'Managerial capability', 'Marketing capability', 'Diverse workforce', 'Strong ICT service', 'Country branding', 'State of technology', 'Supply chain network connected with global value chain', 'Uninterrupted Utility services with competitive market price (gas, electricity etc.)', 'The growing importance of the logistics sector in the economy', 'Low-cost of doing business', 'Automation of tax system, Business operations and public service facilities', 'Competitive tariff structure', 'Low labour cost', 'Capital Market Development', 'Reduced tax regime'.

Table 2: Way forward to attract FDI

Way forward to attract FDI	Agree	Strongly Agree	Sum
Adoption of Technological know-how in production system	44.20%	50%	94.20%
Enhance transparency and digitization	40%	50.80%	90.80%
Managerial capability	45%	45%	90.00%
Marketing capability	48.30%	39.20%	87.50%
Diverse workforce	50.80%	36.70%	87.50%
Strong ICT service	42.50%	45%	87.50%
Country branding	45%	41.70%	86.70%
State of technology	45%	40.80%	85.80%
Supply chain network connected with global value chain	41.70%	42.50%	84.20%
Uninterrupted Utility services with competitive market price (gas, electricity etc.).	38.30%	45%	83.30%
The growing importance of the logistics sector in the economy	43.30%	40%	83.30%
Low-cost of doing business	41.70%	40.80%	82.50%

Way forward to attract FDI	Agree	Strongly Agree	Sum
Automation of tax system, Business operations and public service facilities	38.30%	44.20%	82.50%
Competitive tariff structure	40.80%	40%	80.80%
Low labour cost	46.70%	31.70%	78.40%
Capital Market Development	37.50%	39.20%	76.70%
Reduced tax regime	39.20%	35.80%	75.00%

4.3 Qualitative Analysis

Representatives from Pharmaceutical, Jute, Leather, RMG, Agro processing, Light Engineering, Cement, Heavy Industrial sectors, Academician and Researchers participated in KIIs and opined different views. Major opinions from the KIIs are represented in a tabular form below.

Table 3: Major findings from KIIS

Sectors	Findings
Pharmaceutical sector	▪ Insufficient logistics and infrastructural facilities in port management. ▪ Insufficient financial instrument. Process for approval of funds is slow, which serves deterrent to attracting FDI. ▪ To change the policy, we should pinpoint the pressing concern like automation of the financial service, improved business environment and consider the opinions of all relevant stakeholders. ▪ Must think globally rather than locally and should follow the policies of developed countries to attract FDI. ▪ Should include skilled workforce, appropriate expertise, and technical know-how for the healthcare sector. ▪ For the pharmaceutical sector collective action plan should be more technologically driven. ▪ Proper API policy implementation is required to meet post-LDC challenges. ▪ Other sectors like RMG and Power sector, In pharmaceutical sector more incentive, should be provided. ▪ The business environment of country should be smoother for foreign investors.
Jute sector	▪ There are three key difficulties to attracting FDI: tax incidence, a smooth exit point for foreigners' profit, and political instability. ▪ Other primary challenges are dollar crisis, inflation and the unrest in global market. ▪ Withdrawal more money than the existing foreign direct investment. ▪ An integrated rate should be formulated on export and import dollar rate.

	▪ Capacity of BIDA is required to be improved to draw larger investment and need to modernize OSS as well. Without these facilities, FDI would transfer to other countries like India, Vietnam etc. ▪ To draw in more foreign investment, need to reduce bureaucratic red tape and strengthen negotiating skill. ▪ To diversify jute goods, need to strengthen workforce skills and enhance innovation capability. ▪ Should establish own service facility for the manufacturing and repairing of machinery.
Leather sector	▪ In FY21, the leather industry received 17.82 million FDI and in FY22, the number increased to 39.267 million. ▪ We are not getting foreign investment despite our potential opportunity. ▪ Expected foreign investment in this sector will not be derived If we do not maintain international standards accurately. ▪ All graduated LDCs have experienced a stronger inflow of FDI in the post-graduation era. Bangladesh is proactively seeking FDI from all countries of East and West. ▪ The steps including setting up 100 special economic zones (SEZs) will improve the business and investment environment. ▪ Bangladesh has buoyant private sector with strong entrepreneurial skills. The social fabric is dynamic and the formation of human capital has taken root. ▪ We have enough supply of raw materials, such as wet blue leather, skilled and semi-skilled workforce and age-old leather business but we are lack behind due to an uncompiled supply chain mechanism. ▪ Lack of compliance, non-compliance in the procurement of raw materials and inadequate capacity of CETP. ▪ Apart from compliance certificates and standards, the major challenge for the tannery industry is to complete the infrastructural development of Savar's leather industry city. ▪ Brand consciousness is another issue that requires attention. ▪ Absence of quality and production process, absence of central facility for production of finished leather and lack of backward linkages. ▪ Inadequate policy support to encourage value addition. ▪ Slow and limited foreign and domestic investment, limited market access.
RMG	▪ Only RMG is the most promising sector for FDI. ▪ The price of gas and electricity is gradually Increasing.

	▪ Labour cost is low but after 4 years considering the compliance of WTO the labour cost will be Increased and It will be difficult to produce product at low cost. ▪ Duty & Quota free and GSP facilities will no more exist. ▪ For losing GSP the cost of production will be increased. ▪ Geo-politics is affecting the overall fall of FDI. ▪ Incentive facility provided for the garments sector was respectable initiative from the government and to attract FDI will have further Impact after LDC graduation. ▪ Businessmen are facing bureaucratic complications though they are maintaining all rules and regulations but they are not getting sustainable business environment. ▪ There is less response from the government considering the LDC graduation. ▪ Considering future challenges many businessmen from RMG sector will migrate to other business. ▪ There is a possibility to lose the present promising global market of RMG. ▪ Investors will not be interested in FDI if the cost of production is much higher. ▪ Investors have alternative options and market to invest. ▪ Foreigners want hassle-free environment for doing business. ▪ Must have proper timebound action plan and direction from the government to attract FDI. ▪ Relevant ministries are not dynamic enough to solve the problems of foreign Investors. ▪ Investors are facing problem of taxation and double taxation. ▪ Exchange rate volatility. ▪ Absence of Brand ecosystem and technical know-how. ▪ We have 100 privet economic zones but lack of sufficient facilities and business environment.
Agro processing	▪ Foreign investors face barriers and challenges from Bangladesh bank to take the revenue to their country. ▪ Investors are not getting citizenship in this country. ▪ Policies are not simple and clear enough to understand for foreigners. ▪ One-stop service is not available. ▪ Political unrest is affecting FDI. ▪ Other countries e.g. UAE, Malaysia are getting FDI for providing much civic benefit. ▪ Corruption is a significant problem to attract FDI. ▪ Absence of Master plan to attract more FDI. ▪ Cheap labour cost but competitive global market.

	▪ Sometimes foreign Investors are not much comfortable coping with the socioeconomic culture of Bangladesh. ▪ Investors are facing challenges to export products. [e.g. Lack of port facility, Bureaucratic complication, Absence of automated system] ▪ Law should be much easier and simple. ▪ In Agro sector, we have potentiality but have to ensure Government facilities. ▪ Social securities and facilities for foreign Investors should be ensured. ▪ All sectors are not getting Bonded warehouse facilities and It should be ensured. ▪ For proper utilization of bond, there should have clear evidence of how much raw material is being used for industrial production. ▪ Required sufficient policy support and modern technology. ▪ Required loan facility with easy interest scheme and within five years payback guarantee.
Light Engineering	▪ Foreign Investors do not like to bear unnecessarily complicated surroundings. ▪ If foreigners get sound and sustainable environment they will invest. ▪ Relevant ministries are not functional enough to solve the problems of foreign investors. ▪ Foreign Investors are not feeling safe and secure to Investment for both economic and social crises. ▪ Foreign Investors face redundant harassment from the Investigator of NBR. ▪ One-stop service of BIDA is not active at all. ▪ Foreign Investors are repeatedly facing bureaucratic problems. ▪ Now Infrastructure for FDI is much better than before. ▪ We are facing temporary problems for energy crisis. With time being it will be overcome but Businesses will be collapsed if do not get uninterrupted supply of gas and electricity. ▪ For motorcycles in Bangladesh has local market demand so for this product there is the opportunity for FDI. ▪ Rules and Policies are much confusing to understand for foreigners and Less coordination is found from the relevant authorities to solve the problems of foreign Investors. ▪ Policies are not being implemented properly by the relevant authority.
Cement	▪ Higher FDI encourages the transfer of clean technologies and know-how, as well as the development of human

	capital in the form of more effective and efficient workflows. ▪ Connections with foreign investors directly improve international trade integrations and enable a more competitive economic environment in the nation. ▪ To promote the flow of foreign direct investment, the government has taken significant measures to raise its rating in the Ease of Doing Business Index (FDI). ▪ It is important to guarantee that regulations are friendly, regulatory practices are simplified, investment incentives are provided, and ineffective bureaucratic procedures are eliminated. ▪ Political stability, low wages, low production costs, simple communication, tax system, efficient port management, favourable currency rate, and the host nation's foreign investment policy are attracting factors for foreign investors. ▪ Need to address the issue like non-cooperation from relevant government agencies like, the Board of Investment, Police, National Board of Revenue, Environment Authority etc. ▪ More FDI will undoubtedly be attracted if major barriers in the physical infrastructure related to utilities, economy, and legal system were removed.
Heavy Industry	▪ Bangladesh will lose all the GSP facilities after 2026 and industrial production will be challenging to enter global markets at a lower cost. ▪ Steel industry is an import-dependent industry; hence the most important phase of our business process starts from the Port. ▪ Inefficient port and logistic facility require much time in port to release product for entangled condition. ▪ Steel industry is currently a booming one, there are several problems in port management related to releasing the goods used in this sector, which creates obstacles in the manufacturing process. ▪ Inefficient roads and lack of express highway linked to the port also create problems for the business. These often lead to an increase in the cost of doing business. ▪ Local companies cannot attract FDI as foreign investors consider these problems as weaknesses of their new projects. ▪ When any local company wants to go into a joint venture with a foreign company, then it has to show its partner that the country has an efficient regulatory and business

	environment which not only ensures smooth business operation but also a generous return on investment. ▪ Government has taken several steps to increase the efficiency of the port, but there is more requirement for development. ▪ It was declared by the government to provide a single OSS for all trade and business-related activities which has not been introduced yet. ▪ Local businesses often fail to show the credibility of the promises made by the government and fail to attract adequate foreign investment. ▪ Foreign businessmen are facing challenges to take their revenue to their country and gradually it has been growing. ▪ For Lack of duty and quota-free facilities, Investors will be more discouraged for FDI. ▪ Absence of Business automation process. ▪ Foreign businessmen are not getting social safety and security. ▪ Bureaucratic complication and harassment from relevant authorities.
Academician/Researcher	▪ Although we will lose market preference in a number of nations, including the European Union as well as exports are projected to decline following LDC graduation but will be able to attract more foreign direct investment after LDC graduation as this status will boost the country's reputation. ▪ Bangladesh has all the potential opportunity to attract FDI due to its macro-economic stability, strategic geographical location and low-cost workforce. ▪ Increased FDI will assist us to overcome the challenge of the post-LDC period. ▪ We have not been able to utilize locally obtained raw materials in the leather sector because the Savar tannery area is not completely operating. ▪ The steps initiated by the government of Bangladesh to construct 100 special economic zones (SEZ) and large infrastructure projects appear to solve some of the problems. ▪ Significant obstacles to attracting FDI are a range of supply-side restrictions such as inadequate infrastructure and excessive business costs. ▪ The most recent Doing Business ranking of the World Bank puts Bangladesh 168th out of 190 nations. ▪ In subcomponents of the Doing Business index Bangladesh performs the worst are - 'enforcing contracts,' 'obtaining electricity,' and registering property'.

	▪ The obstacles to attracting FDI in Bangladesh are the high cost of doing business, an unfavourable regulatory environment, bureaucratic red tape, uncertainty in the reform of the policy regime, lax enforcement of intellectual property rights, and the slow implementation of infrastructure projects, including SEZs.

5. Conclusion and Recommendations

Since the arrival of the COVID pandemic in 2019 and the start of country-by-country lockdowns, economists have been talking about fears of an economic recession. Economic growth has slowed in almost every country, from the developed countries to the least developed countries. LDCs have been hit harder than rich countries by the economic crisis caused by COVID. The Russia-Ukraine war has fueled the crisis. By early 2023, the IMF predicts that one-third of the world's countries will be in recession due to the impact of the COVID pandemic and the Russia-Ukraine war.

Meanwhile, Bangladesh is set to graduate from the Least Developed Countries (LDCs) in 2026. To meet the challenges upon LDC graduation, FDI can be a vital external private source of financing in Bangladesh. But it needs necessary reforms to attract foreign investment to maintain the trend of progress. Foreign direct investment (FDI) in Bangladesh is less than one percent of GDP. In the true sense, Bangladesh, such an attractive country, yet lags far behind in terms of FDI.

The study reveals that Bureaucratic complexity is the main challenge in Bangladesh to attract FDI followed by Higher cost of doing business, High corporate tax rate, Weak supply chain and logistic facility, Lack of modern and advanced technology, Lack of Skilled labour, Licensing problem, Regulatory challenges (insolvency act, bankruptcy act foreign exchange regulation act, etc.) and Lack of competent professional services (banking etc.).

However, the study also identifies the way forward to attract FDI. ‘Adoption of Technological know-how in production system’ is the major way forward according to the study findings followed by ‘Enhance transparency and digitization’, ‘Managerial capability’, ‘Marketing capability’, ‘Diverse workforce’, ‘Strong ICT service’, ‘Country branding’, ‘State of technology’, ‘Supply chain network connected with global value chain’, ‘Uninterrupted Utility services with competitive market price (gas, electricity etc.)’, ‘The growing importance of the logistics sector in the economy’, ‘Low-cost of doing business’, ‘Automation of tax system, Business operations and public service facilities’, ‘Competitive tariff structure’, ‘Low labour cost’, ‘Fintech and Capital Market Development’, ‘Reduced tax regime’.

Bangladesh, transitioning from an LDC, may leverage Official Development Assistance (ODA) and FDI to enhance national income and GDP share. Based on the study, some proposed recommendations for attracting FDI upon LDC graduation are Policy reforms and investments in human capital, technology, and institutions are crucial for a smooth transition to upper-middle-income status. So to ensure competitiveness in sectors like tannery, leather goods, and footwear, improvements in compliance with international standards are essential. Technical support for certification, such as from the Leather Working Group, may be prioritized. At the same time attracting FDI requires eliminating sector-specific barriers, particularly in garments, footwear, and ceramics, while enhancing the ease of doing business through infrastructure development and simplified regulatory processes.

Attracting Foreign Direct Investment (FDI) should diversify sources of foreign currency beyond remittances and exports is key, and substantial FDI can play a pivotal role. Besides, we should take initiative to enhance trade competitiveness, upgrading infrastructure, and improving economic and political institutions are vital for attracting FDI. Technology transfer for product and export diversification, especially in RMG, should be a focus area. Additionally, sector-specific policies and reforms in trade, monetary, and fiscal policies are necessary to boost private sector investment.

To attract FDI, Bangladesh must prioritize the implementation of existing policies outlined in national development plans, negotiate trade agreements, and explore new sectors beyond RMG. Reducing administrative complexity, resolving land-related issues, and ensuring disaster preparedness are essential steps. Additionally, region-specific strategies, advanced technology adoption, and creating opportunities for industrial relocation through FDI should be considered.

Infrastructure projects, particularly in logistics, need to be expedited. This includes the Dhaka-Chattogram express highway and port efficiency improvements. Ensuring facilities at EPZs, minimizing land disputes, and providing a seamless One-Stop Service (OSS) for the investors. Automated systems for VAT, tax deductions, and document renewals are necessary to attract foreign investors. Ensuring social safety, security, and dignity for foreign investors, along with offering incentive packages, will enhance FDI inflows.

Effective utilization of bond facilities, inclusion of chambers in FDI negotiations, and addressing investor demands are key to sustainable FDI attraction. To foster local demand, especially in sectors like light engineering, targeted production plans and branding initiatives, such as phasing out reconditioned cars for Bangladesh-branded vehicles, are recommended. Consistent policies, transparent regulations, and a holistic approach to structural changes will be essential to attract and retain foreign investors.

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Appendix

Tenure of business (in years)

	Number	Percent
1 to 9	40	33.3
10 to 19	54	45.0
20 to 29	17	14.2
30 to 39	5	4.2
Above 40	4	3.3
Total	120	100.0

Question 1: Which industry does your business belong to?

	Number	Percent
Agro-Processing	19	15.8
IT & ITES	5	4.2
Jute & Jute Goods	5	4.2
Light Engineering	11	9.2
Pharmaceuticals	6	5.0
Plastic	3	2.5
RMG & Textile	17	14.2
Construction	11	9.2
Consultancy & Engineering	4	3.3
Cotton	2	1.7
Import & Supply	7	5.8
Madical Equipment	4	3.3
Renewable Energy	3	2.5
Shipbuilding	3	2.5
Printing & Publishing	3	2.5
Packaging	3	2.5
Cosmetics	2	1.7
Energy	2	1.7
Other, please specify	10	8.3
Total	120	100.0

Question 2: Please tell us the number of employees working in your firm.

	Number	Percent
1 to 49	74	61.7
50 to 99	12	10.0
100 to 199	15	12.5
200 to 299	2	1.7
300 to 399	2	1.7
400 to 499	2	1.7
500 to 599	2	1.7
600 to 699	2	1.7
700 to 799	1	.8
Above 1000	8	6.7
Total	120	100.0

Question 3: Are you aware of the fact that Bangladesh is set to graduate from the Least Developed Countries (LDCs) in 2026?

	Number	Percent
No	9	7.5
Yes	111	92.5
Total	120	100.0

Question 4: Do you think that attracting Foreign Direct Investment (FDI) can be a way for Bangladesh to address the challenges in the post-LDC graduation era for low-cost financing?

	Number	Percent
No	14	11.7
Yes	106	88.3
Total	120	100.0

Question 5: Does your business receive any form of Foreign Direct Investment (FDI)?

	Number	Percent
No	106	88.3
Yes	14	11.7
Total	120	100.0

Question 6.1: The amount of FDI in USD (approximate):

	Number	Percent
1 million to 250 million	12	85.7
251 million to 500 million	2	14.3
Total	14	100.0

Question 6.2: From which destination(s) you are currently receiving FDI

	Percent
Canada	4.2%
China	12.5%
India	12.5%
Japan	8.3%
UAE	12.5%
UK	4.2%
USA	8.3%
South Korea	4.2%
Singapore	4.2%
France	4.2%
Germany	4.2%
Malaysia	12.5%
Netherlands	4.2%
Turkey	4.2%

Question 7: Do you agree that our industry has huge potential to attract FDI after LDC graduation.

	Number	Percent
Strongly Disagree	2	1.7
Disagree	17	14.2
Neutral	32	26.7
Agree	41	34.2
Strongly Agree	28	23.3
Total	120	100.0

Question 8: Do you think that your industry has been able to attract FDI as per its potential so far?

	Number	Percent
No	79	65.8
Yes	41	34.2
Total	120	100.0

Question 9: If "Yes" in Question 8, what are your suggestions to continue this trend of attracting FDI?

	Number	Percent
Very competitive investment climate	27	52.9%
Impressive fiscal and non-fiscal incentives	18	35.3%
Other, please specify:	6	11.8%

Question 10: If "No" in Question 8, what are the challenges of attracting FDI in your industry? You are requested to pick up multiple responses.

	Number	Percent
Lack of Skilled labour	27	7.3%
Labour Unrest	2	0.5%
Lack of competent professional services (banking etc.)	24	6.5%
Lack of IT and telecom services	7	1.9%
Lack of Utility services	21	5.7%
Lack of ESG (Environmental, Social, and Governance) compliance	20	5.4%
Licensing problem	26	7.0%
Bureaucratic complexity	43	11.6%
Higher cost of doing business	36	9.7%
Regulatory challenges (insolvency act, bankruptcy act, foreign exchange regulation act, etc.)	25	6.7%
Business settlement (negotiation)	9	2.4%
High corporate tax rate	34	9.2%
Weak supply chain and logistic facility	32	8.6%
Clean business practice	20	5.4%
Lack of transport connectivity with regional market	8	2.2%
Lack of modern and advanced technology	29	7.8%
Other, please specify:	8	2.2%

Question 11: How much do you agree with the following factors that can attract FDI in Bangladesh after LDC graduation?

Adoption of Technological know-how in production system

	Number	Percent
Strongly Disagree	1	.8
Disagree	3	2.5
Neutral	3	2.5
Agree	53	44.2
Strongly Agree	60	50.0
Total	120	100.0

Marketing capability

	Number	Percent
Strongly Disagree	1	.8
Disagree	4	3.3
Neutral	10	8.3
Agree	58	48.3
Strongly Agree	47	39.2
Total	120	100.0

Managerial capability

	Number	Percent
Strongly Disagree	1	.8
Disagree	2	1.7
Neutral	9	7.5
Agree	54	45.0
Strongly Agree	54	45.0
Total	120	100.0

State of technology

	Number	Percent
Strongly Disagree	3	2.5
Disagree	4	3.3
Neutral	10	8.3
Agree	54	45.0
Strongly Agree	49	40.8
Total	120	100.0

Capital Market Development

	Number	Percent
Strongly Disagree	4	3.3
Disagree	6	5.0
Neutral	18	15.0
Agree	45	37.5
Strongly Agree	47	39.2

Total	120	100.0

Supply chain network connected with global value chain

	Number	Percent
Strongly Disagree	4	3.3
Disagree	5	4.2
Neutral	10	8.3
Agree	50	41.7
Strongly Agree	51	42.5
Total	120	100.0

Country branding

	Number	Percent
Strongly Disagree	1	.8
Disagree	2	1.7
Neutral	13	10.8
Agree	54	45.0
Strongly Agree	50	41.7
Total	120	100.0

Diverse workforce

	Number	Percent
Disagree	4	3.3
Neutral	11	9.2
Agree	61	50.8
Strongly Agree	44	36.7
Total	120	100.0

Low labour cost

	Number	Percent
Strongly Disagree	5	4.2
Disagree	6	5.0
Neutral	15	12.5
Agree	56	46.7
Strongly Agree	38	31.7
Total	120	100.0

Strong ICT service

	Number	Percent
Disagree	5	4.2
Neutral	10	8.3
Agree	51	42.5
Strongly Agree	54	45.0
Total	120	100.0

Uninterrupted Utility services with competitive market price (gas, electricity etc.).

	Number	Percent
Disagree	9	7.5
Neutral	11	9.2
Agree	46	38.3
Strongly Agree	54	45.0
Total	120	100.0

Low-cost of doing business

	Number	Percent
Disagree	9	7.5
Neutral	12	10.0
Agree	50	41.7
Strongly Agree	49	40.8
Total	120	100.0

Reduced tax regime

	Number	Percent
Strongly Disagree	5	4.2
Disagree	6	5.0
Neutral	19	15.8
Agree	47	39.2
Strongly Agree	43	35.8
Total	120	100.0

Competitive tariff structure

	Number	Percent
Strongly Disagree	2	1.7
Disagree	4	3.3
Neutral	17	14.2
Agree	49	40.8
Strongly Agree	48	40.0
Total	120	100.0

Automation of tax system, Business operations and public service facilities

	Number	Percent
Strongly Disagree	3	2.5
Disagree	8	6.7
Neutral	10	8.3
Agree	46	38.3
Strongly Agree	53	44.2
Total	120	100.0

The growing importance of the logistics sector in the economy

	Number	Percent
Strongly Disagree	2	1.7
Disagree	3	2.5
Neutral	15	12.5
Agree	52	43.3
Strongly Agree	48	40.0
Total	120	100.0

Enhance transparency and digitization

	Number	Percent
Strongly Disagree	1	.8
Disagree	4	3.3
Neutral	6	5.0
Agree	48	40.0
Strongly Agree	61	50.8
Total	120	100.0

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CMSME Development in Bangladesh upon LDC Graduation: Challenges and Way Forward

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Abstract

Bangladesh is poised to graduate into a developing economy later 2026 according to UN declaration as all criteria were met. In this journey of development, Cottage, Micro, Small and Medium-Sized Enterprises (CMSMEs) have played a crucial role. Despite their significance in the economy, CMSMEs have not realized its maximum capacity yet, facing some constraints to reach its full potential. In addition, transitioning from Least Developed Country (LDC) status marks a milestone for Bangladesh economy, yet it brings forth a host of challenges for CMSMEs. Hindered by limited access to finance, intensified competition, deficient infrastructure, challenges to maintain operational efficiency etc. With this link, this study aimed to understand the impact of LDC graduation on the CMSMEs in Bangladesh and to explore the barriers that hinder their growth and development. The study also seeks to identify the opportunities available for CMSMEs in the post-LDC graduation era and to propose strategies for leveraging those opportunities. Alongside, this study found both quantitative and qualitative research techniques. For quantitative data collection, a purposive sampling technique is used with a structured survey questionnaire. Qualitative data findings from the primary survey were validated with key informant Interviews (KIIs) from key industries of the private sector to understand their perceptions and opinions on the challenges of development of CMSMEs upon LDC graduation and the way forward.

Keywords: CMSME; LDC graduation; Challenge; Solution; Export; Opportunity

1. Introduction

Bangladesh's economy is one of the fastest-growing in the world, with an average annual growth of 6% or more for the last decade and a half. Meanwhile, in the first and second reviews of the Committee for Development Policy (CDP) in 2018 and 2021 respectively, Bangladesh met all three criteria for LDC graduation, including per capita GNI, Economic and Environmental Vulnerability Index (EVI), and Human Assets Index (HAI). According to the most recent triennial review of CDP in 2021, Bangladesh met all three criteria with a per capita GNP of 1827 USD (requirement is USD 1222), EVI of 27 (requirement being 32 or below), and HAI of 75.4 (requirement being 66 or above) (Bhattacharya, 2021). Bangladesh is now on track to become a developing economy by 2026 and a developed economy by 2041.

In the economic development of Bangladesh, Cottage, Micro, Small and Medium-Sized Enterprises (CMSMEs) have played an instrumental role in accelerating inclusive growth, promoting shared prosperity, and eradicating poverty through creating jobs and bolstering economic growth. According to the SME Policy 2019, The CMSME sector contributes close to 25% of Bangladesh's GDP with around 7.8 million enterprises serving as a major source of livelihood for a large population of the country. CMSME has also become a proven source of job market especially for new entrants (GoB, 2019; Odonkor, 2021).

Despite the immense contribution of the CMSME sector to the economy of Bangladesh, the sector is largely dominated by informal activities. As a result, its potential to drive sustainable growth remains uptapped. CMSMEs are also not properly included in the formal registration process. Because of their informal nature in terms of economic operations, employment generation, and their role in the entire supply chain, they face many additional challenges, such as difficulties in obtaining loans from institutions and government assistance through institutional forms or channels. Realizing the huge potential of this sector, Bangladesh government has taken various initiatives and policy measures for the development of the CMSME sector. Despite this strong political guidance and will, the CMSME sector has not progressed as expected. Furthermore, CMSMEs, alongside the major businesses, may face difficulties in the post-LDC era, as most of the LDC-specific International Support Measures (ISMs) will be retracted. Such support measures are not only the official development assistance (ODA) and concessional loans, but also include a wide range of trade-related measures, such as preferential market access or special and differential treatment provisions under World Trade Organization (WTO) rules (Rahman, 2021).

Under preferential market access provision, as an LDC, Bangladesh gets duty-free, quota-free (DFQF) market access in the developed countries market. Some countries also apply less stringent rules of origin for exports from Bangladesh. Moreover, under the services waiver provisions for LDCs, Bangladesh receives preferential treatment from members of the WTO. The WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), particularly Article 66.2, Bangladesh receives incentives from the developed countries in terms of the transfer of technology. It was helpful in creating a sound and viable technological base. Bangladesh will lose these incentives upon graduation. By another decision of the WTO in the area of public health, Bangladesh as an LDCs is offered special exemption in patent protection and licensing requirements for pharmaceutical products till the end of 2032. As such, Bangladesh is required to protect pharmaceutical patents after 2032 (Rahman, 2021).

Therefore, during the transitional period which is going to end in a few years, Bangladesh needs to ensure proper readiness and preparation for the sustainable growth of CMSMEs to meet the challenges after LDC graduation.

The government has set a vision to increase the contribution of CMSME sector in the economy by up to 32% by the year 2024. Considering the importance of CMSME sector even after the LDC graduation, it is the right time to adopt long term strategic planning and their effective implementation to strengthen Bangladesh's position in the international arena after the graduation from LDC. The elevation from the LDC status may give rise to curtailment of some benefits, but the positive image invoked of the country's ability on the global platform will open up new possibilities too. Bangladesh's identity as a developing nation in the international arena, will uphold the competitiveness of the country which will take us to a greater height and will contribute to our economy.

For maintaining stable growth, there is huge scope for Bangladesh economy through CMSME. Our export can be diversified through encouraging local and foreign investment in CMSMEs. For this, a comprehensive and integrated work plan on the CMSMEs sector is very crucial which will address the challenges and pave the way for sustaining the CMSME sector after the LDC graduation. However, few studies have examined the development, challenges and future prospects of CMSMEs in relation to LDC graduation.

As in other developing countries, the CMSME sector has emerged as an engine of growth in Bangladesh. There are many well-documented studies on the genesis, impact and growth of the CMSME in Bangladesh. However, studies are limited when we look at the CMSME sector through the lens of LDC graduation. To fill the important gap in the CMSME literature in Bangladesh and considering the urgency of the issue, the study aims to understand the impact of LDC graduation on the CMSMEs in Bangladesh and to explore the barriers that hinder their growth and development. The study also seeks to identify the opportunities available for the CMSMEs in the post-LDC graduation era and to propose strategies for leveraging those opportunities. Overall, the study aims to provide insights into the challenges and opportunities for CMSMEs in Bangladesh and to suggest a way forward for their sustainable development.

To address these issues, the research questions guiding this study are as follows: What are the challenges of CMSMEs upon LDC graduation? What are the impacts of LDC graduation on CMSMEs in terms of operational capability to remain competitive in the global market? How can CMSMEs in Bangladesh be prepared to sustain growth after LDC graduation?

The specific objectives of the study are to identify the challenges of CMSMEs upon LDC graduation at domestic and global levels, to understand the impacts of LDC graduation on CMSMEs in terms of their operational capability to stay competitive in the global market, to propose remedial measures to enhance the capacity of the CMSMEs to address the challenges of LDC graduation.

2. Literature Review

Cottage, Micro, Small and Medium Enterprises (CMSMEs) are considered the backbone of a developing economy like Bangladesh. Across the South Asia, the contribution of SMEs to the overall economic growth and the GDP is high. In Nepal, CMSMEs constitute more than 98% of all establishments and contribute 63% of the value-added segment. In India, CMSMEs contribution to GDP is 30%. SMEs contribute to 50% of Bangladesh's Industrial GDP and provide employment to 82% of the total industrial sector employment (Hussain, Farooq & Akthar, 2012). Thus, CMSMEs play a crucial role in furthering growth, innovation and prosperity in Bangladesh by creating employment opportunities and producing useful machine substitutes and machinery parts saving huge amount of foreign currency for the country (Chowdhury, Azam, & Islam, 2013).

However, despite its potential, the CMSME sector suffers from various challenges that hold the country back from realizing the full potential of the sector. Even due to absence of any consistent data on the contribution of SMEs to the national economy in Bangladesh (Raihan, 2021). Chowdhury et al. (2013) attempted to identify problems of SMEs in Bangladesh and potential solutions to that. The study surveyed 100 SME consumers and the problems identified by them were long waiting period for getting initial finance from banks because of tedious paper works, inability to provide collateral to get loans, inexperience in preparing sound financial systems for getting loans. As remedies the respondents advised financial incentives for sound business plan and public-private partnership in providing effective training.

Bangladesh Bank Report (2008 in Islam & Miajee, 2018) stated that the key reasons behind the SMEs are not entering into manufacturing but are financial constraints, dismal state of utilities, technology and policy discriminations. In a study, Akterujjaman (2010) stated that CMSMEs are strongly restricted in accessing the capital that they require to grow and expand, with nearly half of SME in developing countries rating access to finance as a major constraint. SMEs in Bangladesh also have challenges related to inexperience in business, lack of technical knowledge, poor managerial skills, lack of planning skills, and market research skills (Raihan, 2021).

Quadir and Jahur (2011) argued that CMSMEs of Bangladesh have been vulnerable to frequent policy changes of Government from time to time. Besides, they are facing severe competition in and outside the country. As a result, the profitability of CMSMEs has got squeezed and many of them have got financially distressed. Besides, entrepreneurs of CMSMEs. Hasan and Islam (2008) identify that bank usually do not express interest towards SME financing. The reason behind this conservativeness is higher operational cost, less return and high risk associated with the SME financing. Due to small loan size the operational cost is higher and they require intensive monitoring and supervision. The main reason for higher risk is that the small and medium entrepreneurs are highly unlikely to comply with the collateral requirements as typically they do not have immovable properties. With the excuse of collateral sometimes banks and non-bank financial institutions are reluctant to finance SMEs. Bank and others financial institutions generally prefer large enterprise clients because of lower transition costs, and greater availability of collateral. The CMSMEs also fall outside the reach of micro finance schemes, and thus are compelled to depend on informal sources of funds at much higher interest rates (Aziz, & Siddique,2001).

In the time of the Covid-19 pandemic, various studies show that SMEs in Bangladesh have been more affected than large enterprises. A study by SANEM finds that the impacts are devastating for micro and small enterprises. Also, the business environment has been turning out to be more unfavorable for SMEs during the pandemic. Large firms also received more stimulus packages than micro, small and medium firms. The adjustment costs induced by the lockdown and 'tough' restrictions are very high for SMEs. Many SMEs have lost their businesses during the crisis. Given the difficulty of obtaining loans and other forms of assistance through established means, the recovery path for many SMEs is likely to be uncertain (Raihan, 2021). A study by DCCI (2021) finds that 51% of the surveyed businesses were affected by the lockdown. To make the picture worse, 39% of the owners also reported that they were partially hit. Therefore, it can be said that around 90% of the CMSMEs are hurt by the ongoing lockdown causing the largest job-producing sector of the country vulnerable to the exogenous economic shock of the ongoing COVID-19 pandemic.

Several studies have been conducted to identify the challenges of the private sector after LDC graduation so that the private sector can prepare itself to face new challenges of LDC graduation. To face competition in maintaining the price and product quality, the private sector has been suggested to emphasis on research, innovation, and product diversification. It is suggested that the private sector should focus on increasing the use of technology in the industry, creating a skilled workforce, increasing efficiency in business management, and increasing the capacity to produce goods at competitive prices (FBCCI, 2022).

Taking advantage of advancements in the field of information and communication technology (ICT) in the era of rising global value chains (GVCs), connecting to GVCs can be vital for Bangladesh to gain from trade. in this case, India can be a shining example. With the advent of GVCs, instead of producing a product in its entirety, small Indian firms are concentrating on internationalization and enhancement of their efficiency by participating in supply chains via specializing in facets of the supply chain in which the firms enjoy a comparative advantage (Reddy & Sasidharan, ADB, 2020)

From the preceding discussion, it can be concluded that the CMSMEs in Bangladesh are very vulnerable sector to any shock like pandemic, global financial crisis and the current status of formalization of CMSMEs in Bangladesh is not satisfactory. The sector urgently needs proper policy support from the government so that CMSME can build capacity and benefit from Bangladesh’s image as a developing country after LDC graduation.

1. Research Methods

3.1 Nature of Research

After LDC graduation CMSMEs may face several challenges but from the Government, adequate initiatives are not taken to overcome these challenges. It is assumed that if the problems are not properly identified on time and steps are not taken, it will be more intensified after graduation. Considering this issue, we need more information and study. Hence, we have carried out this explanatory research to investigate an in-depth understanding of the existing domestic and global challenges of CMSMEs and recommendations for ways out.

3.2 Data Collection

This report presents a unique perspective regarding the challenges and solutions of CMSME development upon LDC Graduation of our country. In order to fulfil this objective, 112 primary data from CMSME businesses representing Textile & RMG, Agro Processing, Jute & Jute Goods, Light Engineering, Pharmaceuticals, Leather & Leather Goods, IT&ITES and some other sectors were collected. For qualitative data collection, 10 Key informants of 6 industries were chosen comprising RMG, Agro Processing, FMCG, Jute & Jute Product, Leather & Leather Goods, and IT&ITES sectors. To conduct the study, relevant agencies, sectors and associations have been approached to allow their members to participate in the study. Alongside, DCCI members involved in the relevant MSME business were approached to participate in the survey conducted with structured questionnaire.

3.3 Sampling Technique

Non-probability convenience sampling technique was used to pick up 112 samples from the members of DCCI. The reasons for choosing non-probability sampling are time and resource constraints barred the researchers from reaching randomly selected businesses for data collection. Therefore, only virtually collected data were used for this study.

3.4 Methods

The study was conducted by applying both quantitative and qualitative research techniques. A structured questionnaire was administered using computer-assisted survey solutions platform called ‘KoBo Collect’ to collect primary data. DCCI R&D team designed this survey form applying complex algorithms for creating an interactive process of checking data validity. Data were cleaned and analyzed using MS Excel and SPSS (Statistical Package for the Social Sciences), a software package used for the analysis of statistical data. The findings were further validated through Key informant interviews (KIIs) with a structured questionnaire The study took around 2 months to complete.

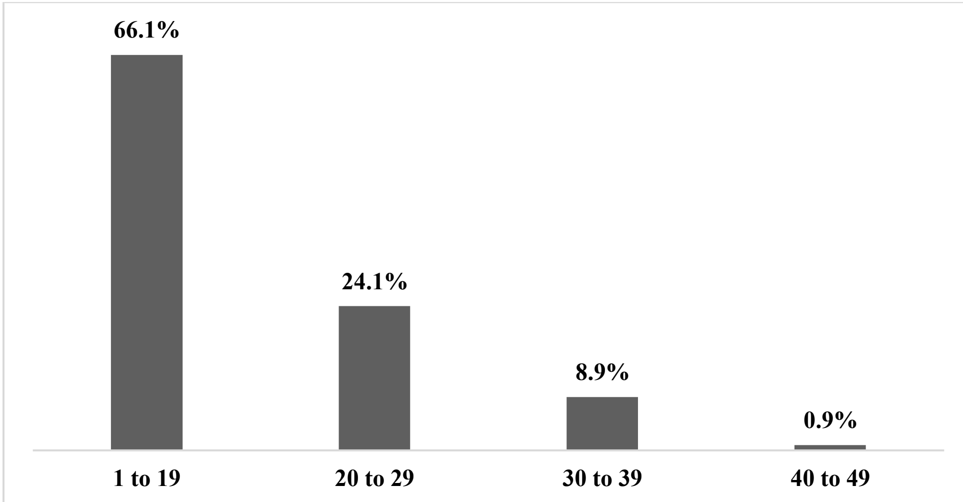
4. Findings from the Sample Survey

This descriptive section of the study reports several demographic information of the respondents including the tenure, size, nature and export sector of the businesses and challenges those businesses are facing at domestic as well as global level. This section also presents respondents’ responses to way forward to address LDC graduation challenges. Discussions are as follows:

4.1 Tenure of Business

As shown in **Figure 1**, The majority of respondents (66.1%) indicated that they had been in business for a tenure of 1 to 19 years. Additionally, 24.1% of respondents reported running their business for 20 to 29 years, while 8.9% and 0.9% mentioned tenures of 30 to 39 years and 40 to 49 years, respectively.

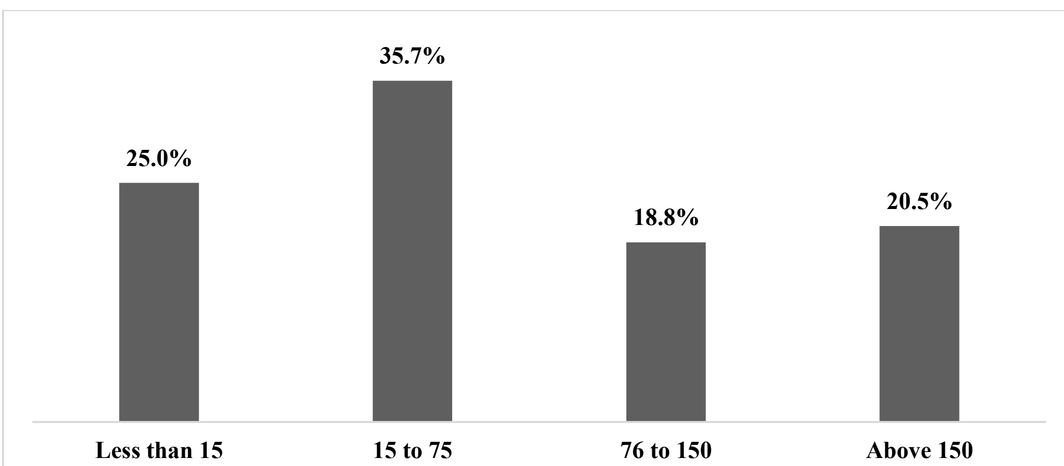
Figure 1: Tenure of Business



4.2 Size of workforce in your business

When the respondents were asked about the size of their business, as shown in **Figure-2**, the majority, comprising 35.7% of respondents, indicated a workforce size ranging from 15 to 75. However, 25% of businesses reported a workforce size of less than 15. Notably, 20.5% of respondents reported a workforce size exceeding 150. On the contrary, 18.8% of respondents stated that the workforce size in their business falls within the range of 76 to 150.

Figure 2: Size of Workforce



4.3 Nature of business

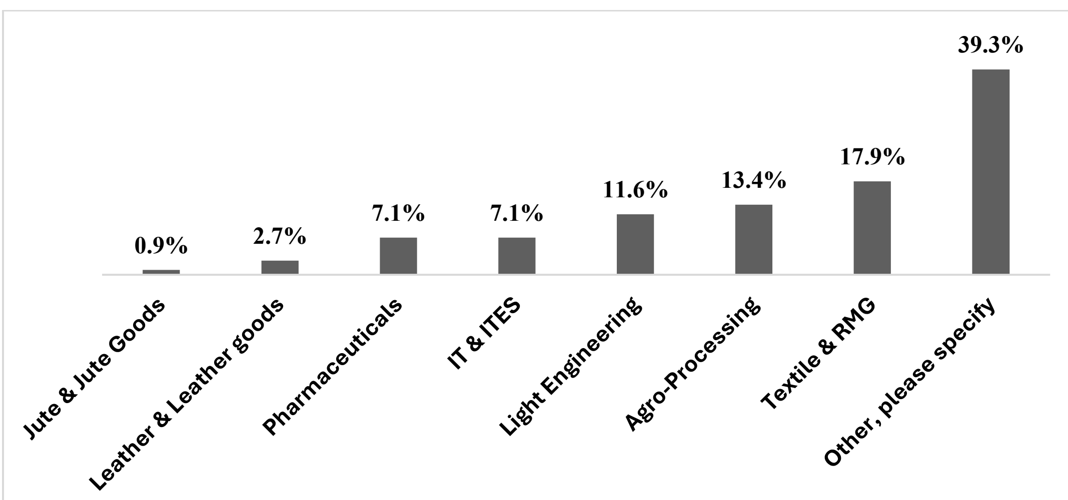
Concerning the nature of business, as shown in **Figure 3**, 58% of the participants indicated that their business involves Foreign Trading. Meanwhile, 25% and 17% of respondents stated that their businesses belong to Local Trading and Manufacturing & Production business, respectively.

Figure-3: Nature of Business

1.4 Export sector that the business belongs to
1.5

Even though the majority of respondents (39.3%) reported that they belong to other export sectors, 17.9% specified Textile & RMG as their export sector, as shown in **Figure 4**. Additionally, 13.4% and 11.6% of participants mentioned their business association with the Agro-Processing and Light Engineering sectors, respectively. Notably, an equal percentage (7.1%) of respondents identified with the IT & ITES and Pharmaceuticals sectors. The subsequent sector, mentioned by 2.7% of respondents, was Leather & Leather goods. However, only 0.9% of participants reported Jute & Jute Goods as their export sector.

Figure-4: Exporters' business sector

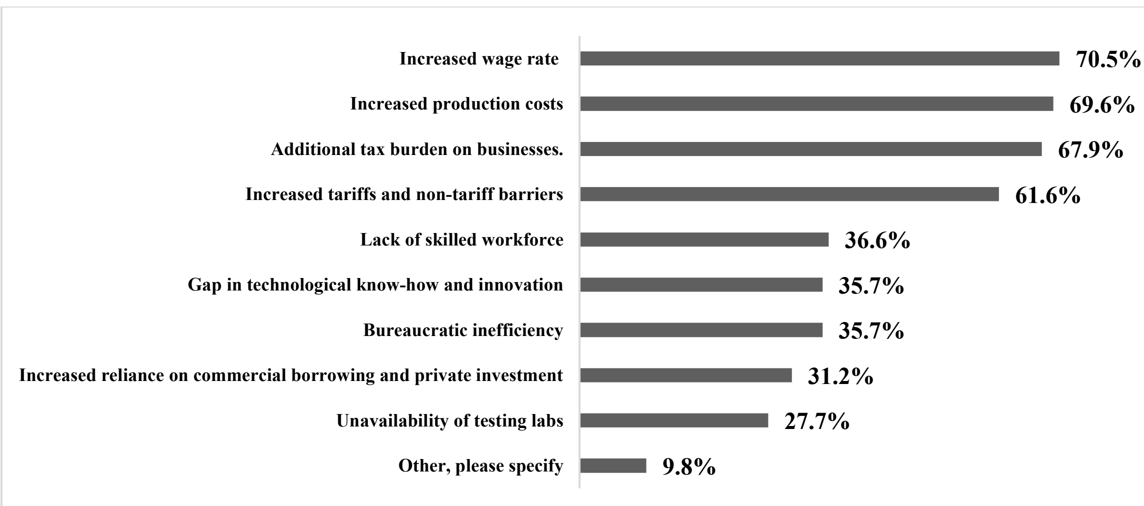


However, about 39.3% of businesses who chose 'others' as an option were asked to specify the export sector that their business belong to. From their feedback, a list of other relevant sectors is identified. Other industrial sectors include the chemical industry, energy sector, FMCG, industrial manufacturing, infrastructure development, handicrafts, medical equipment, and the plastic industry. Other service sectors comprise consulting firms, housekeeping, heavy equipment services, hotels and resorts, manpower recruiting agencies, news media, tourism, and transportation services.

4.5 Challenges may be faced at domestic level upon LDC graduation

When asked about the challenges they might encounter at the domestic level upon LDC graduation, the majority of respondents (70.5%) expressed concerns about an increased wage rate. Additionally, 69.6% of participants highlighted worries regarding rising production costs, while 67.9% were apprehensive about an additional tax burden on businesses. Increased tariffs and non-tariff barriers were cited by 61.6% of respondents, and 36.6% expressed concerns about the lack of a skilled workforce. Bureaucratic inefficiency was a worry for 35.7% of respondents, and an equal percentage (35.7%) mentioned a gap in technological know-how and innovation. About 31.2% of respondents expressed concern about an increased reliance on commercial borrowing and private investment. Furthermore, 27.7% noted the unavailability of testing labs as a potential challenge. However, 9.8% of respondents indicated other challenges.

Figure 5: Respondents' Response to Domestic Level Challenges

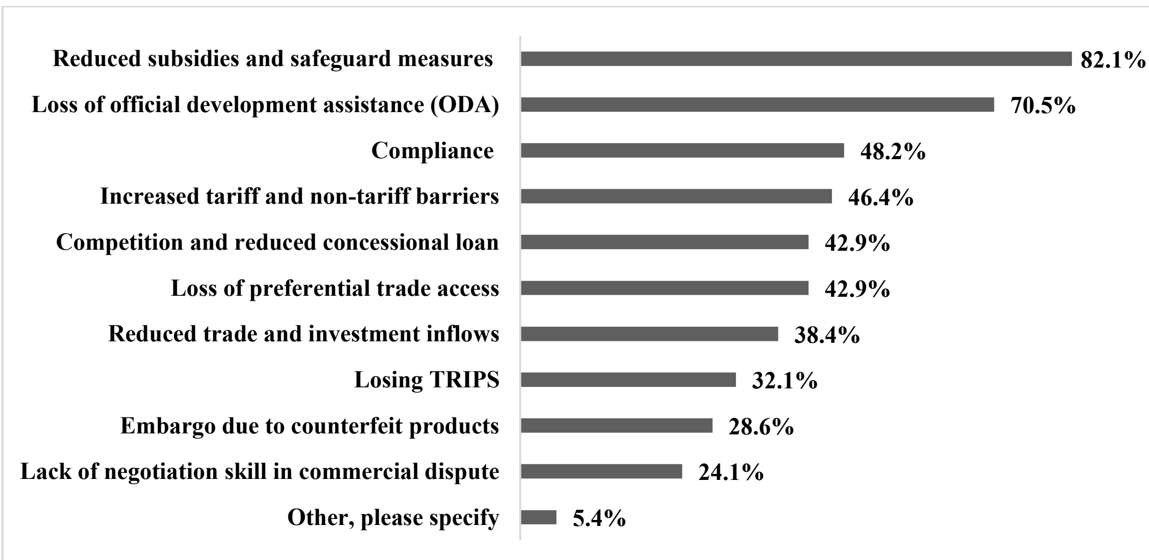


Moreover, about 9.8% businesses who chose 'others' as an option were asked to specify the challenges, they might encounter at the domestic level upon LDC graduation. The feedback reveals that multiple challenges are disadvantaged for the businesses. The increasing energy price and the fluctuations in the Forex market are creating uncertainties, while corruption practices like the harassment of government representatives and bribery are making things worse. Other factors that also block expansion include unwarranted hikes in tariffs on imports of certain goods and lack of appropriate incentives. There are increased logistic costs on top of these challenges as businesses have to take on the task of designing and developing new products. The insufficiency of energy and the general lack of power makes matters worse, thereby compromising effective competition by CMSMEs that are generally weaker than big businesses. In addition, demands patterns out034paced growth in warehouse facilities.

4.6 Challenges that may be faced at global level upon LDC graduation

When asked about the challenges they could face at the global level upon LDC graduation, the majority of respondents (82.1%) voiced concerns about reduced subsidies and safeguard measures. Furthermore, 70.5% of participants expressed worry about the potential loss of official development assistance (ODA). Compliance-related issues were a concern for 48.2% of respondents, while 46.4% were apprehensive about increased tariff and non-tariff barriers. Loss of preferential trade access was mentioned by 42.9% of respondents, who also highlighted concerns about competition and reduced concessional loans at the same percentage. Additionally, 38.4% of respondents expressed worry about diminished trade and investment inflows, and 32.1% were concerned about losing Trade-Related Aspects of Intellectual Property Rights (TRIPS) benefits. Embargo due to counterfeit products was mentioned by 28.6% of respondents, and 24.1% expressed concern about a lack of negotiation skills in commercial disputes.

Figure 6: Respondents' Response to Global Level Challenges



In addition, 5.4% of respondents who chose 'others' as an option were asked to specify the challenges, they might encounter at the global level upon LDC graduation. From their feedback, a number of other challenges were identified. These include branding crisis, Inefficiency & Lack of Competitiveness, difficulties in digital marketing of agro products, challenges in diplomatic negotiation for fair wage of migrant workers, inefficiency of diplomats in export promotion, and the potential for increased product price.

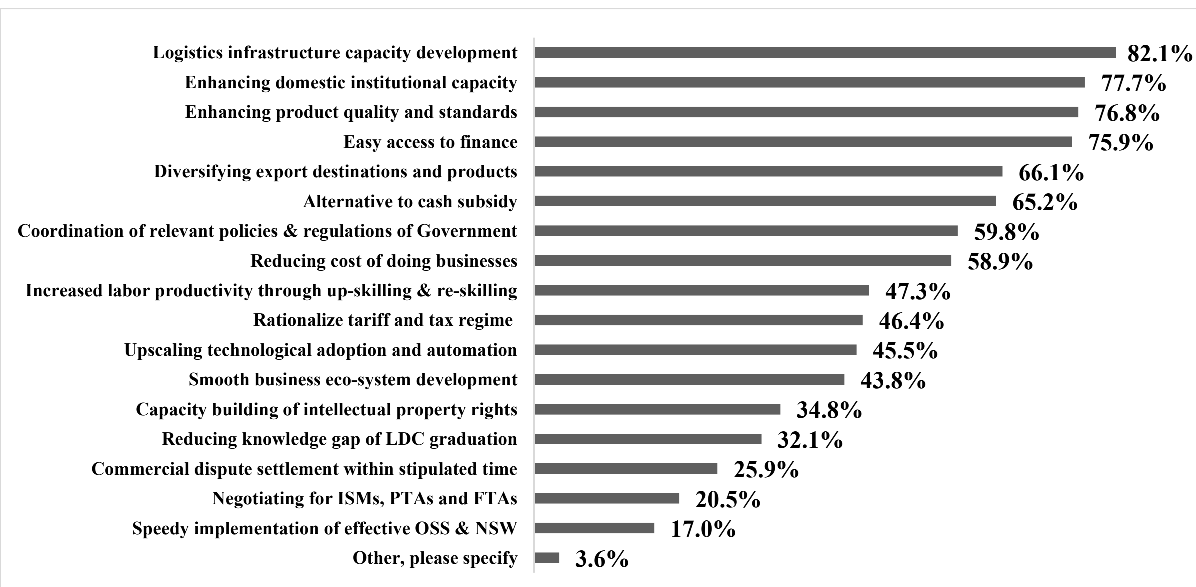
4.7 Way forward to address the challenges of LDC graduation

Respondents overwhelmingly identified logistics infrastructure capacity development as a top priority, with 82.1% expressing its importance. Following closely, 77.7% emphasized the need to enhance domestic institutional capacity, while 76.8% highlighted the importance of improving product quality and standards. Access to finance emerged as a critical factor for 75.9% of participants, and diversifying export destinations and products was noted by 66.1%. A notable 65.2% considered an alternative to cash subsidies crucial. Coordination of relevant government policies and regulations was cited by 59.8%, and 58.9% stressed the importance of reducing the overall cost of doing business. Other significant aspects included increasing labor productivity through up-skilling and re-skilling (47.3%), rationalizing tariff and tax regimes (46.4%), and upscaling technological adoption and automation (45.5%). The survey also highlighted the importance of developing a smooth business eco-system (43.8%) and capacity building of intellectual property rights (34.8%). A notable 32.1% underscored the importance of reducing the knowledge gap associated with LDC graduation, emphasizing the need for targeted efforts in education and awareness. Commercial dispute settlement within stipulated timeframes was deemed significant by 25.9% of participants, pointing to the urgency of efficient resolution mechanisms. Negotiating for International Support Measures (ISMs), Preferential Trade Agreements (PTAs), and Free Trade Agreements (FTAs) emerged as a priority for 20.5%, reflecting a strategic focus on international trade relations. Speedy implementation of effective One-Stop Shops (OSS) and National Single Windows (NSW) garnered attention from 17.0%, indicating a desire for streamlined and efficient trade facilitation processes.

Additionally, 3.6% respondents who chose ‘others’ as an option were asked to specify the way forward to address the challenges of LDC graduation. From their feedback, a list of other measures is identified below:

- Constant skill development.
- Full automation of VAT, Tax and Customs system.
- Open dollar rate may ensure the availability of dollar in the market.

Figure-7: Respondents’ Response to Way Forward to Address LDC Graduation Challenges



5. Findings from the Key Informant Interviews (KIIs)

Major findings from the 10 key informant Interviews (KIIs) of 6 industries comprising RMG, Agro Processing, FMCG, Jute & Jute Product, Leather & Leather Goods, and IT&ITES are reported below

5.1 RMG Sector

Findings and Recommendations of RMG sector is presented in Table 1:

Table 1: Findings and Recommendations of RMG Sector

Findings	Recommendations
▪ The country is not competent enough to deal with the challenges of LDC graduation. ▪ Present condition of businesses is fragile due to serial blows of global impact e.g. COVID, War ▪ Banks are not providing loans to small businesses on easy terms and conditions. ▪ No opportunity to open Back-to-back LCs and TTs. ▪ Larger businessmen have alternative sources of income so they face less challenge to survive. ▪ Banks are more interested lending money to larger businesses. ▪ CMSMEs are not strong enough to keep up in competition with big businesses and they are not getting sufficient bank facility or other support. ▪ Some corrupt Businessmen do not intend to repay loan so they do not have any objection for high-interest rate. ▪ The banking ecosystem has been destroyed due to NPLs. ▪ The ratio of NPL is much higher among larger businessmen but small and medium businessmen are more responsible for repaying their loan. ▪ Increasing interest rate to control inflation rate is not an effective mechanism. ▪ Due to gas, electricity and energy crisis	▪ National Single Window (NSW) should be implemented and Business-related all services should be ensured by BIDA's one-stop service. ▪ Need more bilateral treaties aiming at LDC graduation. ▪ For more FDI favourable environment should be ensured in BEZ, EPZ, Hi-Tech Park, and Industrial Park. ▪ Need more relevant, stable and effective policy measures and laws for foreign investors. ▪ Required vast development in the Energy sector, communication system and skilled manpower. ▪ If businesses get sufficient liquid money, they are capable enough to start and invigorate their business again.

small businesses are no longer able to survive in competition and many already have closed their businesses. ▪ Taxation rules and policies are not business-friendly. In most cases, law is being misused by officials of NBR and general businessmen are being harassed even after filing returns properly on time. ▪ NBR is deducting extra tax or double tax from the source and in several cases, businessmen cannot adjust it later. Deducting 1% AIT is burden for small businesses. ▪ For disruption of production, timely delivery is not being possible despite having good market and sufficient buyers. ▪ Exporter are losing their market and other competitive countries like China, and Vietnam are grabbing it. ▪ For absence of sufficient logistic support, foreign investors are not getting business-friendly environment for FDI.	

Source: DCCI R&D, 2024

5.2 Agro Processing Sector

Findings and Recommendations of Agro Processing sector is presented in Table 2:

Table 2: Findings and Recommendations of Agro Processing sector

Findings	Recommendations
▪ Businessmen are still not very aware of the challenges of LCD graduation. ▪ After graduation cost of doing business will be much higher than now. ▪ Due to the high inflation rate at present businessmen are suffering the most. ▪ For using local raw materials source tax is also imposed and it creates an extra burden. ▪ Instead of several challenges businessmen are expecting fast growth in the agro-processing sector because of high-value addition capacity. ▪ Workers with cheap wages are available so the	▪ Need more analytical studies on the impact analysis and need assessment considering the challenges of LDC graduation. ▪ To overcome challenges under PPP initiative, have to prepare action plans for short, medium and long term. ▪ Need a sound business ecosystem for sustainable

opportunity of profit margin is gained.

- Sudden withdrawal of cash incentives puts huge pressure on businessmen. To reduce this pressure government should ensure other facilities as soon as possible.
- Most of the raw materials are imported and it is totally hindered by extreme dollar crisis.
- Considering competitiveness, we are lagging behind in all sectors.
- Banks are not supporting new entrepreneurs so they are not getting startup opportunities.
- For the crisis of gas supply, production process is being hampered in many industries like agro-processing.
- The cost of doing business is much higher and the profit margin is much lower.
- For using LNG cost of production increases, production quantity decreases and selling products at competitive price is not possible.
- For having sufficient production capacity big businessmen are being facilitated and benefitted.
- In the agro-processing sector, many SMEs are enlisted as limited companies. They are to pay in higher tax rate so they are suffering now.
- Our logistic sector is less competitive but Government is working on National logistics policy and a committee has been formed to frame this policy aiming LDC graduation.
- Due to unstable law, businessmen cannot predict about future uncertainty and thus they become less interested in investing.
- In economic zones, there is no sound environment for industrial production and export.
- Most of the Multinational companies are following all rules and regulations of WTO and they are concerned about the challenge of LDC graduation.
- Their policies are aligned with SDG goals and maintain environment-friendly production process.
- Multinational companies procure all raw materials locally as production cost decreases.
- Foreign investors search favourable business environment and more incentive facility to gain profit margin so after LDC graduation many companies may change their destination for business environment.
- To sustain this potential sector, effective policy measures and law reformation are required.
- Should follow the Policies and strategies of other developed countries that have already overcome the challenges of LDC graduation.
- As subsidy facility is reduced, Government should increase other facilities and TAX, VAT, AIT should be exempted.
- After 2026 we will not get GSP support anymore so from now we have to negotiate with WTO for GSP+ facility.
- It is important to strengthen diplomatic relations with other countries to export duty-free products.
- Need more bilateral treaties and should take required diplomatic action plan in this regard.
- Concept of smart Bangladesh should be more specific and policy measures in this regard are required.
- Bureaucratic complications may be reduced through automation.
- Need the enhancement of tax net with assurance of tax return. If everyone pays tax properly both tax rate and burden will be decreased.
- Required entire integration and automation in vat, tax and customs payment system as soon as possible.
- Need effective action plan to

investment. ▪ For bilateral treaty, compliance certificate and country of origin certificate, some multinational companies enjoy the export of duty-free products from Bangladesh to India. (Nestlé) ▪ Targeting LDCs some foreign investors are supporting farmers for capacity buildup on modern production process including high efficiency, productivity, environmental and health issues. ▪ Non-tariff barrier in Bangladesh for FDI-Conformity assessment procedures, Sanitary and phytosanitary (SPS) measures, technical barriers to trade (TBTs), Lack of trade facilitation, Lack of transparency and predictability.	increase the tax GDP ratio, which is only 8% now.

Source: DCCI R&D, 2024

5.3 Fast-Moving Consumer Goods (FMCG) Sector

Findings and Recommendations of Fast-Moving Consumer Goods (FMCG) sector is presented in Table-3:

Table 3: Findings and Recommendations of FMCG sector

Findings	Recommendations
▪ Before reducing cash incentive, government did not take any opinion from business community. Government could have a discussion session with all businessmen and stakeholders. ▪ In January, 2024 many industries have already exported their goods considering the inclusion of cash incentives facility so they will face losses. ▪ Expatriates are the main source of Bangladesh's remittance flow. ▪ Larger companies are dependent on smaller	▪ Businesses should be propelled towards innovation and competitiveness, moving away from reliance on LDC-specific trade benefits. ▪ Facilitating this transition through policy reforms, trade diversification strategies and efforts to ease doing business, alongside promoting SDGs. ▪ To take recommendations from relevant stakeholders while formulating laws and policies aiming LDC graduation. ▪ Need to invest in better technology, sustainable practices, and higher-skilled labor to meet global standards. ▪ Proactive adaptation and long-term strategic planning by both the government and the private sector, aiming for competitiveness and sustainability. ▪ CMSMEs must navigate a more complex landscape where international compliance and certification standards become crucial.

companies (CMSMEs), in terms of getting uninterrupted supply of raw materials and supplying products to retail businesses. ▪ If large companies suffer due to lack of export capacity, smaller ones are likely to suffer in the same way. ▪ Industries are bound to lay off workers and unemployment rate may increase. ▪ Larger export-oriented companies have local businesses market so they will survive but the situation is adverse for others. ▪ The loss of preferential trade access under GSP is big challenge to export-driven sectors, by increasing competition and costs. ▪ Bangladesh's products could become more expensive and less attractive in international markets. ▪ Enhanced economic stability and growth prospects may strengthen the appeal for FDI. ▪ Optimizing business, infrastructural, and regulatory landscapes will be critical to capitalize. ▪ The shift of LDC might bring higher international borrowing costs as concessional loans and grants dwindle. ▪ Bangladesh will have to compete harder not just on price but also on quality and innovation. ▪ It will be harder to get into	▪ Companies will need to innovate and improve their products to stand out in the global market. ▪ Requires a strategic shift towards enhancing product uniqueness, tapping into niche markets, and leveraging digital platforms for broader market access. ▪ Have to ensure product quality and brand value of the country. ▪ Emphasizing the quality and uniqueness of products can make them more appealing to customers over cheaper options from other countries. ▪ Equipping employees with new technologies and skills is crucial. ▪ A skilled workforce can drive innovation and improve processes, enhancing business efficiency and competitiveness. ▪ Obtaining international quality certifications can build trust in foreign markets by demonstrating that products meet high standards. ▪ Forming partnerships with foreign companies can be beneficial, helping businesses learn new skills, access new markets and share the costs and risks of international trade. ▪ Need 10 years more cash incentive facility to develop the capacity of export-oriented industry. ▪ Finding more opportunities to sell products locally due to economic growth and businesses will have to adjust to meet the changing needs and preferences of local customers. ▪ For CMSMEs, availability of capital should be ensured on easy terms and condition. ▪ For expatriate workers Government should ensure adequate incentive and socioeconomic facilities at home and abroad as they are the main source of remittance. ▪ To keep continuous remittance flow, need effective monitoring system to break up the Hundi cycle and all illegal sources of dollar smuggling must be demolished. ▪ To stop money laundering need effective implementation of law. ▪ Should provide incentive facilities for the exporters who use local raw materials. ▪ It is possible to solve the dollar crisis by increasing the export volume.

new markets or maintain their position in existing ones. ▪ Adapting to changes will be tough, especially for smaller companies with fewer resources.	▪ Ensure availability of dollar and duty-free facilities to import raw materials and machinery, for all manufacturing sectors. ▪ For export-oriented industry, source tax should be exempted or reduced.

Source: DCCI R&D, 2024

5.4 Jute & Jute Product Sector

Findings and Recommendations of Jute & Jute Product Sector is presented in Table-4:

Table 4: Findings and Recommendations of Jute & Jute Product Sector

Findings	Recommendations
It is anticipated that after graduation with less capability and competitiveness jute sector has to compete with other countries.	▪ For the jute sector need short, medium and long-term action plan to ensure subsidy, funding, excess to finance, tax and tariff examination facilities. ▪ Identifying niche markets with less competition and specific demands, such as eco-friendly jute products or handcrafted goods, can provide a strategic advantage. ▪ Capitalizing on unique attributes like our craftsmanship can offer a competitive edge by producing jute products. ▪ Should take necessary initiative to protect IPR for innovative and unique jute products.

Source: DCCI R&D, 2024

5.5 Leather & Leather Goods Sector

Findings and Recommendations of Leather & Leather Goods sector is presented in Table 5:

Table 5: Findings and Recommendations of Leather & Leather Goods Sector

Findings	Recommendations
▪ Limited export opportunity due to the absence of international compliance certification and it is the major problem for this sector. As a result, the export volume is decreasing. ▪ The Central Effluent Treatment Plant	▪ To get LWG certificate, the CETP must be entirely operational immediately. ▪ The government can give maintenance responsibility to the accountable factories of Savar

(CETP) of Savar Tannery estate is not efficient. ▪ All factories are not capable enough to establish ETP (Effluent Treatment Plant). ▪ Most leather industries do not have Leather Working Group (LWG) certificate and it is the primary requirement of European countries to export Made in Bangladesh branded leather goods from Bangladesh. ▪ 10% cash incentive for crust leather has been taken off and for finished leather, it has been reduced from 10% to 7%. ▪ WTO considers cash incentives as export subsidies. After LDC graduation this facility will be declined as per agreement on subsidies and countervailing measures. ▪ Before taking orders and purchasing leather businessmen consider export incentives facility as part of their business strategy and profit margin. ▪ International supporting measures provided by International NGOs for training and working safety facilities may be curtailed.	Tannery estate to ensure services rather than BSCIC. ▪ Should ensure access to finance with flexible terms and conditions.

Source: DCCI R&D, 2024

5.6 IT&ITES Sector

Findings and Recommendations of IT & ITES sector is presented in Table 6:

Table 6: Findings and Recommendations of IT&ITES Sector

Findings	Recommendations
▪ Startup companies are facing obstacles in access to finance. ▪ Even skilled persons in this sector are facing huge obstacles. ▪ The system of Tax, VAT, and Revenue payment is very complicated and it is being abused. ▪ Now the operation cost of business is much higher than profit margin. ▪ To transfer foreign currency requires several documents and businessmen face continuous queries from BB.	▪ To collect Tax, VAT should introduce automation system in all phases. ▪ 4IR-related technologies and skilled manpower are highly needed to overcome the challenges of LDC graduation. ▪ Government must ensure cash subsidy as alternative to cash incentive.

Source: DCCI R&D, 2024

6. Conclusion and Recommendations

The development of CMSMEs in Bangladesh upon LDC graduation is accompanied by various challenges and potential pathways for progress. A significant impediment lies in the pervasive issue of bribery within government agencies, posing a substantial challenge to conducting business. The study indicates that a significant challenge for the majority of businesses (70.5%) upon LDC graduation at the domestic level is the potential rise in wage rates. Conversely, at the global level, the primary concern for a majority of businesses (82.1%) upon LDC graduation is the reduction of subsidies and safeguard measures. The respondents overwhelmingly identified the development of logistics infrastructure capacity as a top priority, with 82.1% expressing its significance. Following closely, 77.7% emphasized the necessity to enhance domestic institutional capacity, while 76.8% highlighted the importance of improving product quality and standards.

However, Bangladesh can strategically capitalize on its demographic dividend by creating skilled resources, thus leveraging a notable advantage. As Bangladesh transitions from a least developed to a developing nation, it faces the risk of losing easy-to-repay loans and other export-related facilities. The pharmaceutical sector, while subject to international intellectual property regulations, is granted additional time to comply. Challenges also arise from the absence of free trade agreements or partnerships with nations, except Bhutan, potentially hindering marketing efforts and global investment attraction. Bureaucratic complexities, harassment by government personnel under the excuse of VAT collection, and diverse rates imposed by port authorities and tax officers create obstacles for businesses. To address these challenges, efforts to reduce bureaucratic complexity, improve education, and manage the impact of a potential decline in foreign exchange flow are crucial. Additionally, considerations such as managing living costs, addressing issues related to bonded warehouse facilities, poor port facilities, corruption, and high indirect taxes contribute to the comprehensive outlook on CMSME development in Bangladesh upon LDC graduation. Based on the findings and observations, this study proposes the following set of recommendations for providing remedial measures to enhance the capacity of the CMSMEs to address the challenges of LDC graduation.

To address the challenges and enhance competitiveness in the global market, Bangladesh needs to priorities several key actions. Negotiating free trade agreements (FTAs) with industrialised nations, as well as significant developing nations like China and India is crucial. In parallel, there should be efforts to collect the import price lists and associated customs costs of foreign goods through diplomatic channels. Identifying export products based on national capabilities, gathering product samples, and ensuring competitiveness in both quality and pricing with stakeholder collaboration are necessary steps.

A focus on marketing quality products, implementing total quality management (TQM), and establishing Social and Governance (ESG) standards will help position Bangladesh favorably. Establishing trade facilitation desks at embassies can further boost international trade. Additionally, the government should consider providing tax, VAT and AIT exemption facilities in place of or reducing the existing cash incentive facilities. Improvements in food test, packaging and transport logistics are essential to meet international demands and standardised testing facilities should be available in every district, especially for perishable goods. Efficient port operation is equally critical to streamlining exports. Controlling inflation and promoting

Bangladesh's strengths globally is important for sustaining economic growth. Developing skilled human resources is key to overcoming challenges in post-LDC graduation while improving ports and ICT infrastructure will help control higher import-export costs. Standardising and updating guidelines on local infrastructure development along with creating knowledge-based human resources and clear policies are needed to foster growth. Moreover, expanding power and energy capacity at reasonable prices will support industrial expansion.

The financial sector, especially banks and NBFI, must be brought into order, with a focus on reducing non-performing loans (NPLs). Import duties on raw materials should be reduced and investment in infrastructure and tackling corruption in the port and transport sectors are important. Additionally, the government should provide sector-specific support through relevant ministries and empower trade associations to strengthen the industries. Moreover, the government should implement initiatives aimed at preparing the youth with both general education and technical skills. There is also a need for knowledge development on the latest technologies and research and development (R&D) initiatives to foster innovation. Simplifying development processes and investing in every potential sector will ensure a robust and resilient economy.

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Appendix

Tenure of Business

Number of Manpower	Frequency	Percent
1 to 19	74	66.1
20 to 29	27	24.1
30 to 39	10	8.9
40 to 49	1	0.9
Total	**112**	**100.0**

Question 1: What is the size of workforce in your business?

Number of Manpower	Frequency	Percent
Less than 15	**28**	**25.0**
15 to 75	**40**	**35.7**
76 to 150	**21**	**18.8**
Above 150	**23**	**20.5**
Total	**112**	**100.0**

Question 2: What is the nature of your business?

Number of Manpower	Frequency	Percent
Manufacturing & Production business	19	17.0
Local Trading	28	25.0
Foreign Trading	65	58.0
Total	**112**	**100.0**

Question 3: Which export sector does your business belong to?

Number of Manpower	Frequency	Percent
Textile & RMG	20	17.9
Agro-Processing	15	13.4
Light Engineering	13	11.6
Leather & Leather goods	3	2.7
Pharmaceuticals	8	7.1
Jute & Jute Goods	1	.9
IT & ITES	8	7.1
Other, please specify	44	39.3
Total	**112**	**100.0**

Question 4: What challenges you may face at domestic level upon LDC graduation?

Domestic Challenges	Frequency	Percent
Increased reliance on commercial borrowing and private investment	35	31.2
Lack of skilled workforce	41	36.6
Bureaucratic inefficiency	40	35.7
Increased production costs	78	69.6

Additional tax burden on businesses.	76	67.9
Increased tariffs and non-tariff barriers	69	61.6
Increased wage rate	79	70.5
Gap in technological know-how and innovation	40	35.7
Unavailability of testing labs	31	27.7
Other, please specify	11	9.8

Question 5: What challenges you may face at global level upon LDC graduation?

Challenges at Global Level	Frequency	Percent
Loss of preferential trade access	48	42.9
Increased tariff and non-tariff barriers	52	46.4
Competition and reduced concessional loan	48	42.9
Reduced trade and investment inflows	43	38.4
Compliance	54	48.2
Embargo due to counterfeit products	32	28.6
Lack of negotiation skill in commercial dispute	27	24.1
Loss of official development assistance (ODA)	79	70.5
Losing TRIPS	36	32.1
Reduced subsidies and safeguard measures	92	82.1
Other, please specify	6	5.4

Question 6: You are requested to select from the following way forward to address the challenges of LDC graduation.

Way forward	Frequency	Percent
Diversifying export destinations and products	74	66.1
Logistics infrastructure capacity development	92	82.1
Enhancing product quality and standards	86	76.8
Negotiating for ISMs, PTAs and FTAs	23	20.5
Upscaling technological adoption and automation	51	45.5
Increased labor productivity through up-skilling & re-skilling	53	47.3
Smooth business eco-system development	49	43.8
Capacity building of intellectual property rights	39	34.8
Easy access to finance	85	75.9
Alternative to cash subsidy	73	65.2
Reducing cost of doing businesses	66	58.9
Speedy implementation of effective OSS & NSW	19	17.0
Commercial dispute settlement within stipulated time	29	25.9
Reducing knowledge gap of LDC graduation	36	32.1
Rationalize tariff and tax regime	52	46.4
Enhancing domestic institutional capacity	87	77.7
Coordination of relevant policies & regulations of Government	67	59.8
Other, please specify	4	3.6

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Enhancing Export Capability of MSMEs: Challenges and Way Forward

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Abstract

Micro, Small, and Medium Enterprises (MSMEs) play a crucial role in Bangladesh's economic growth, contributing significantly to GDP and employment. However, they face substantial challenges in expanding into international markets, which are expected to intensify with Bangladesh's graduation from LDC status in 2026, affecting MSMEs' global competitiveness. This study examines these challenges, focusing on the obstacles to enhancing MSMEs' export capacity and how internationalization can be facilitated to boost their contribution to Bangladesh's GDP. The research aims to identify key barriers, explore potential export markets, and provide actionable recommendations for improving MSME export capacity. Using a mixed-methods approach, data was collected from 110 MSMEs across industries, including Ready-Made Garments (RMG), Light Engineering, Plastics, Leather & Leather Goods, Agro-processing, and Pharmaceuticals, through surveys and Key Informant Interviews (KIIs). The survey revealed significant obstacles such as complex taxation, high tariffs, inadequate logistics, limited access to finance, and challenges in meeting international standards. KIIs further highlighted issues like corruption in banking and inefficiencies in customs processes. The study identifies potential export markets for MSMEs, including the USA, Europe, and East Asia, and recommends strengthening institutional support, streamlining customs procedures, providing low-cost financing, and fostering product innovation. These findings are intended to guide policymakers in boosting the export potential of Bangladeshi MSMEs.

Keywords: MSMEs, Export Capability, Global Competitiveness, LDC graduation, Internationalisation, Potential Export Markets.

1. Introduction

Micro, Small, and Medium-Sized Enterprises (MSMEs) are widely recognized as engines of economic growth and essential sources of employment, especially for new entrants to the job market (GoB, 2019; Odonkor, 2021). Globally, SMEs account for 90% of all businesses and provide 50% of employment, with formal SMEs contributing up to 40% of GDP in emerging markets and 70% of employment (World Bank, 2022). In developed regions such as Europe and North America, SMEs represent nearly 95% of enterprises, and in the OECD region, they account for about 99% of all firms, providing around 70% of employment and contributing 50-60% of value addition.

In Bangladesh, MSMEs have similarly played a crucial role in the country's economic development. According to the SME Policy 2019, MSMEs contribute approximately 25% of GDP through 7.8 million enterprises. Their role in sustaining Bangladesh's consistent economic growth—over 6% annually for the past 15 years—has positioned the country as one of the fastest-growing economies in the world. Even amid global economic challenges, Bangladesh achieved 5.78% growth in FY2023, demonstrating the resilience and strength of its economy. With sustained growth and holistic policies, Bangladesh is set to graduate to developing economy status by 2026, followed by ambitions to become a knowledge-based and SMART developed nation by 2041.

The government's recognition of MSMEs' instrumental role in inclusive growth, poverty alleviation, and shared prosperity has led to initiatives aimed at enhancing their export capability, with a focus on tapping international markets after adequately serving domestic demands. Although these initiatives have increased MSMEs' global exposure, many still face significant challenges in penetrating export markets. The export contribution of MSMEs remains negligible, partly due to their informal nature in economic operations, employment generation, and their role in supply chains. They encounter technological infrastructure gaps, insufficient automation, limited access to finance, and a lack of market orientation. Around 80% of MSMEs operate informally, facing a "decent work deficit" as there is no formal registration process. Increasing compliance requirements from global businesses also pose additional challenges for MSMEs seeking to integrate into the international market and global supply chains.

As Bangladesh approaches LDC graduation, the country's positive global image offers opportunities to build trust with foreign investors, traders, and international financial institutions. In FY2023, Bangladesh's foreign trade reached USD 150 billion, with export earnings exceeding USD 63.04 billion, of which Ready-Made Garments (RMG) contributed 84%, with Europe and the USA as the main markets. Despite these achievements, Bangladesh's export basket remains dominated by RMG, leaving the country vulnerable to external shocks due to limited diversification. Furthermore, LDC graduation presents challenges as Bangladesh stands to lose preferential trade treatments, subsidies for agriculture, and access to low-cost international funding. Post-2026, the country's exports could face tariffs ranging from 8% to 16%, potentially crippling the current growth momentum.

To avoid falling into the middle-income trap, which affects approximately 80% of countries after LDC graduation, Bangladesh must modernize its tax system, expand its tax net, and emphasize export diversification in terms of both products and markets. In this context, enhancing the export capabilities of MSMEs is essential for increasing export earnings through diversification. Although MSMEs have historically played a stabilizing role in the Bangladeshi economy, their international exposure remains limited. Existing studies have explored the development, challenges, and prospects of MSMEs in relation to international market access, but few have focused on the specific challenge of enhancing export capability post-LDC graduation.

This study aims to explore the challenges of enhancing MSMEs' export capacity and identify potential ways forward. MSMEs contribute significantly to industrial production, exports, employment, and the consumer base in Bangladesh. Through government strategies focused on competitiveness, quality upgrades, financing, and technological adoption, MSMEs have evolved from producing simple consumer goods to manufacturing more sophisticated and precision-driven products. However, the increasingly competitive global market, along with the influx of low-cost goods into the domestic market, has placed pressure on Bangladeshi MSMEs to raise their standards and remain competitive.

For MSMEs to reduce the trade deficit and succeed globally, they must adapt through technological innovation, strategic planning, financial support, and human resource development. Despite their potential, many MSMEs are not adequately equipped to face the challenges of export competitiveness or exploit emerging opportunities. This study seeks to fill the gap in existing literature by identifying the challenges and proposing ways to enhance MSMEs' export capabilities, particularly as Bangladesh navigates LDC graduation.

The research focuses on identifying the challenges of enhancing MSMEs' export capability and increasing their contribution to Bangladesh's GDP through internationalization. It examines the barriers hindering MSMEs' access to global markets, identifies potential export destinations, and offers recommendations to improve their export capacity. By addressing these issues, the study aims to strengthen MSMEs' role in driving economic growth in Bangladesh.

2. Literature Review

Upon graduation from LDC and aiming to fulfill the 2041 vision of evolving into a smart nation, it becomes imperative to stimulate the economic growth of the country, and the vital catalyst for this economic drive is the Micro, Small, and Medium Enterprises (MSMEs), contributing 25% to the GDP and employing over 8 million individuals. In Bangladesh, MSMEs harbor immense potential for growth and poverty reduction, as highlighted by (Chowdhury, Azam & Islam, 2013). However, Bangladesh's MSMEs cannot operate effectively in both local and international markets due to a lack of favorable regulatory measures and appropriate initiatives, and the absence of institutional finance options prevents SMEs from raising enough funding (Ahmed, 1999). To facilitate the expansion of SMEs, the government has implemented various initiatives, including the formulation of the SME Policy of 2019. This policy places a strong emphasis on supporting SMEs in three key areas: implementing supportive policies, establishing effective institutions, and providing access to services related to business and finance.

Over the past few decades, there has been a significant upsurge in research focused on the theories and key determinants of MSMEs internationalization. This heightened scholarly interest is primarily attributed to the crucial role that small and medium-sized businesses play in the realms of exports and job creation, as highlighted by (Krammer et al., 2018). The growing recognition of SMEs as vital contributors to economic development and global trade has spurred researchers to delve deeper into understanding the intricacies of their internationalization processes. Internationalization refers to the process of mobilizing, accumulating and developing resource stocks for international activities (Onkelinx et al., 2016) where MSMEs serve domestic markets (pre-export) and move through various processes until they are committed to serving geographically dispersed markets beyond the boundaries of their countries of origin, (Ngoma et al., 2017), although, it provides firms with an opportunity to grow, it also exposes firms to heightened risks, which may negatively influence their performance (Eduardsen & Marinova, 2020).

Moreover, different literature explores the multiple dimensions of MSME internationalization, shedding light on crucial aspects that shape the global engagement of these businesses. The role of technology in SME internationalization was underscored by (Oviatt & McDougall, 1997), emphasizing digital technologies as enablers that reduce entry barriers and enhance global communication. Government support and policies significantly impact SME internationalization, with scholars arguing for the importance of supportive frameworks, including financial incentives and trade agreements (Lu & Beamish, 2004). Institutional factors also play a vital role, as discussed through institutional theory by (Peng, 2003). Comprehensive performance metrics, including financial, strategic, and market-based indicators, are crucial for assessing internationalized SMEs (Brouthers et al., 2008). Networking and alliances are identified as vital strategies for facilitating global expansion (Jones & Coviello, 2005). Cultural considerations, as outlined by (Nummela et al., 2014), emphasize the importance of cultural sensitivity for SMEs navigating diverse markets. The intersection of internationalization and environmental sustainability has gained prominence, exploring how SMEs can align strategies with sustainable practices (Boso et al., 2019). Finally, different literature acknowledges the impact of global crises on SME internationalization, leading scholars to examine strategies for building resilience and effective crisis management, emphasizing the need for adaptable business models (Ganesan & Paladino, 2020). This diverse array of research provides a comprehensive understanding of the intricacies surrounding SME internationalization.

In various countries, including Turkey, Albania, Serbia, North Macedonia, India, Vietnam, and Japan, governments and financial institutions have implemented diverse strategies to support the internationalization of MSMEs. (Asian Development Bank Institute, 2015). These efforts encompass trade finance tools, technical support, financial assistance, and comprehensive programs aimed at enhancing export competitiveness. For instance, Turkey and Serbia provide financial aid for export-related activities, while Albania focuses on technical support for SMEs. India proposes the establishment of a National Resource Center and Export Facilitation Centers, Vietnam pursues a 4-year initiative for trade performance improvement, and Japan emphasizes global value chain participation and e-commerce adoption for SMEs (OECD, 2019). These initiatives collectively aim to empower MSMEs with resources, knowledge, and financial backing to thrive in international markets.

Chakravarthy, Bharathi, Khire, & Gopalakrishnan, (2023) analyze the commodities and potential destinations that Indian MSMEs can tap on to broaden their business and eventually to the overall growth of the country. Indian MSME's contribute to more than 30% of India's GDP and enhancing MSME exports would help the country achieve an inclusive, socio-economic growth. The research shows that MSMEs in India have a higher potential for exports in textiles and clothing, food products, vegetables, and other agricultural products, and machinery and electrical equipment sectors. In terms of markets, MSMEs in India have a broad scope in the UAE, China, Bangladesh, and the USA. Hiremath & Deb (2022) examine the effects of foreign currency borrowings (FCBs) and domestic market constraints on the performance of the export of the MSMEs during the period 1988–2019. They find that access to the FCBs improved the performance of the MSME exports, indicating the importance of credit accessibility. They also find that the high cost of debt and lack of financial development adversely affect the exports, as MSMEs are unable to borrow. Based on the findings, the study calls for the specialized window for the MSMEs to meet low cost and easy credit and suggests stepping up grants to the MSMEs to improve the export performance.

MSMEs usually face constraints in different key business areas, mainly due to market and coordination failures, that may limit their internationalization, particularly in developing regions. These areas are related to MSMEs' access to finance, intensity of innovation, human capital, and organizational form. In terms of innovation, the nature of knowledge as a public good, information asymmetries, and coordination failures disincentive investments in R&D, and therefore, hamper SMEs' (local and international) competitiveness (Casaburi et al., 2016). In addition. MSMEs have poor knowledge of exportable products and little understanding of the factors underlying international competitiveness (e.g., packaging, quality norms and standards). They also face other barriers specific to export activities, such as language, paperwork, invoicing, and sales management

SMEs typically present poor corporate governance, management and business structures, considering that in most cases, the SME is a firm with traditional personalized organizational hierarchies tied to a single owner or family. All these factors severely limit SMEs' export development and competitiveness (Crespi et al., 2014). Ghouse (2014) states that the government, private sector and the international sector need to play an active role in a coordinated manner to harness the export potential of MSME.

3. Research Methods

3.1 Nature of Research

This study is exploratory in nature, aimed at gaining a comprehensive understanding of the challenges faced by Micro, Small, and Medium Enterprises (MSMEs) in enhancing their export capabilities. MSMEs play a crucial role in the country's economic development, but they often encounter significant obstacles in expanding their export activities. The study focuses on identifying these key challenges and examining potential solutions to improve their export performance. Given the importance of MSMEs in the export potentials, this research sheds light on their struggles in accessing global markets and aims to provide insights into strategies that can facilitate MSMEs export growth.

3.2 Data Collection

The data for this study were gathered through both primary and secondary sources, providing a holistic analysis of the barriers to MSME export growth. Primary data were collected via a structured survey of 110 respondents from key MSMEs, facilitated through the digital platform KoBoCollect to ensure efficient and cost-effective data collection. In addition to the survey, 12 Key Informant Interviews (KIIs) were conducted with industry experts to capture qualitative insights, particularly regarding the challenges faced in international markets and the necessary institutional support to foster internationalization.

3.3 Sampling Technique

A non-probability convenience sampling method was employed to select 110 participants from various industries. This sampling technique was chosen due to practical constraints such as time and resources, allowing the study to target relevant stakeholders efficiently. Respondents were drawn from MSMEs actively involved in or seeking to expand their export activities. The survey was distributed digitally, and follow-up reminders were issued over a two-week period to ensure a high response rate. This approach provided a well-rounded understanding of the export-related challenges confronting MSMEs in Bangladesh.

3.4 Methods

The study adopted a mixed-method approach, integrating both quantitative and qualitative data. The quantitative aspect involved a structured survey to collect data on specific challenges related to export market access, while the qualitative aspect was addressed through KIIs with business leaders, offering deeper sector-specific insights. The data were analyzed using MS Excel and SPSS to detect key trends, with qualitative findings from the KIIs complementing the quantitative analysis. The research was conducted over a three-month period, with the results presented in the analysis and recommendations sections of the report.

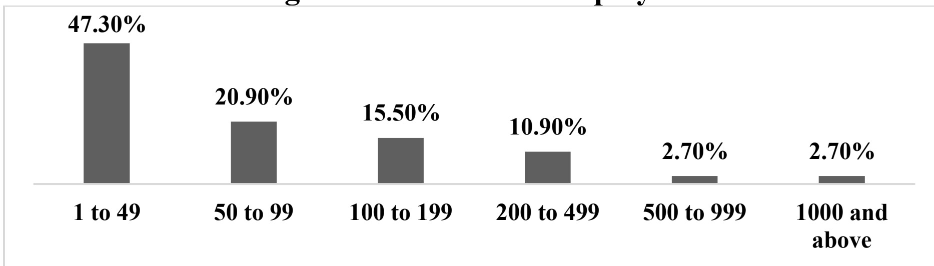
4. Survey Results

This section discusses the results of the survey in which a total of 110 respondents participated.

4.1 Profile of the Respondents

As shown in **Figure-1**, the majority of the respondents comprising 47.3% own a firm with less than 50 employees while 20.9% of respondents stated that their businesses employ a workforce ranging from 50 to 99 individuals. Conversely, 15.5% of respondents mentioned a workforce size falling within the range of 100 to 199, 10.9% of respondents reported a workforce size ranging from 200 to 499 and 5.4% of respondents indicated that their businesses employ 500 or more employees.

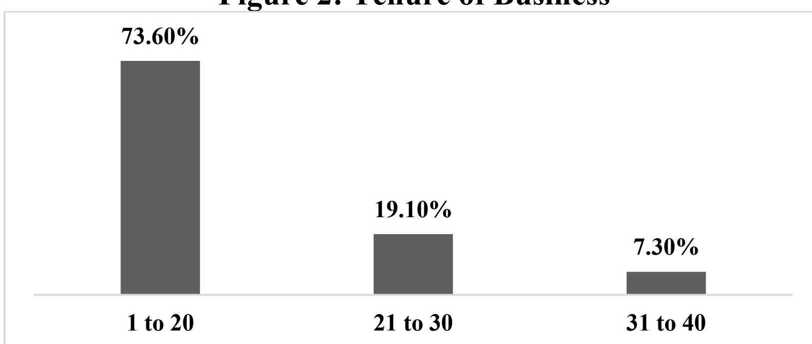
Figure 1: Number of Employees



Source: DCCI Survey on MSMEs (2024)

As shown in **Figure-2**, Among the respondents, 73.6% stated that they had been in business for 1 to 20 years. Moreover, 19.1% reported running their businesses for 21 to 30 years, while 7.3% mentioned tenures ranging from 31 to 40 years.

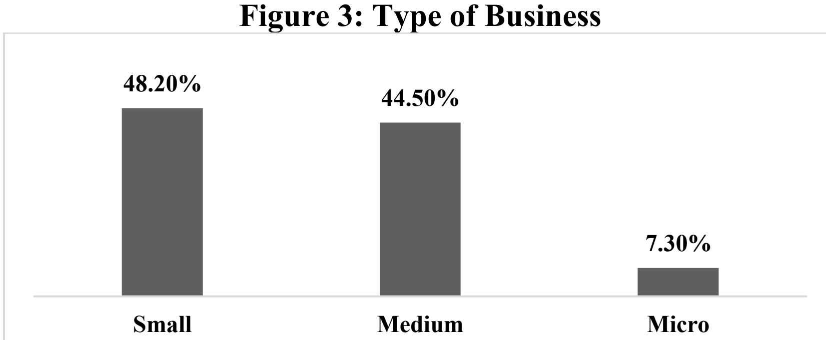
Figure 2: Tenure of Business



Source: DCCI Survey on MSMEs (2024)

As shown in **Figure-3**, regarding MSMEs, 48% of participants stated that their company falls into the small category. Meanwhile, 44.5% and 7.3% of participants mentioned that their companies fall within the medium and micro categories, respectively.

Figure 3: Type of Business



Source: DCCI Survey on MSMEs (2024)

According to the respondents’ importance, the top 20 export destinations are shown in **Table 1**:

Table 1: Main export destinations

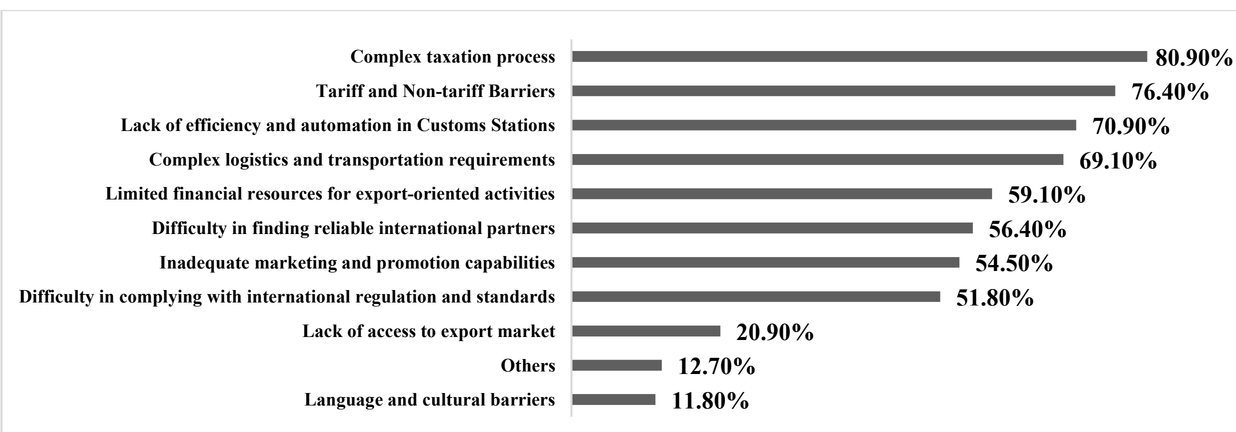
1. USA	6. China	11. Qatar	16. Nepal
2. UAE	7. KSA	12. Germany	17. South Korea
3. Europe	8. Malaysia	13. Oman	18. Australia
4. India	9. Canada	14. Thailand	19. France
5. UK	10. Singapore	15. Japan	20. Italy

Source: DCCI Survey on MSMEs (2024)

4.2 Main challenges faced in attempting to Internationalize the business

Figure-4 shows the main challenges faced by respondents when attempting to internationalize their businesses. 80.9% of them expressed concerns about the complexity of the taxation process. Additionally, increased tariffs and non-tariff barriers were cited by 76.4% of respondents, while 70.9% were apprehensive about the lack of efficiency and automation in Customs Stations. Furthermore, 69.1% expressed concerns about the complexity of logistics and transportation requirements. Concerns about limited financial resources for export-oriented activities were expressed by 59.1% of respondents, while 56.4% grew concerned about the difficulty in finding reliable international partners. About 54.5% of respondents expressed concerns about inadequate marketing and promotion capabilities, and 51.8% expressed worries about the difficulty in complying with international regulations and standards. Additionally, 20.9% of respondents highlighted the lack of access to export markets, and 11.8% expressed concerns about language and cultural barriers.

Figure 4: Main challenges faced in attempting to Internationalize the Business



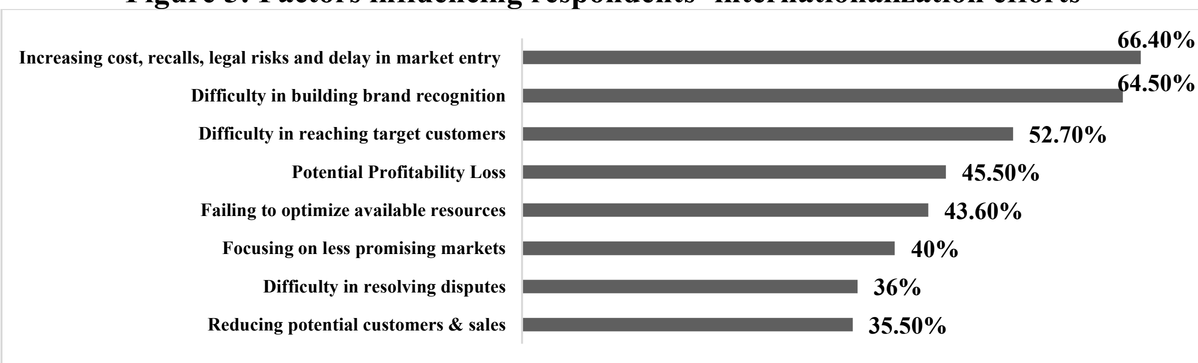
Source: DCCI Survey on MSMEs (2024)

Around 12.7% of businesses that selected 'others' as an option when asked about challenges in attempting to internationalize their operations were further asked to specify the difficulties they faced. From their feedback, several additional challenges were identified. These include bureaucratic harassment and corruption, which hinder operational efficiency, and a lack of air cargo services that affects timely export logistics. Businesses also highlighted a shortage of skilled workers and insufficient capital as major barriers to growth. Limited access to finance further constrains expansion efforts. Moreover, there is insufficient cooperation in the production of local molds and a lack of product synergy in non-traditional exportable assets, both of which limit diversification. Additionally, a very poor Moody's rating and currency issues with African countries pose further challenges to international trade, while reductions in government incentives add to the financial burden faced by these enterprises.

4.3 Factors influencing internationalization efforts

Figure-5 reports about the challenges impacting the export efforts of their businesses. 66.4% of respondents expressed concern about barriers to accessing export markets due to escalating costs and legal risks. 64.5% of respondents cited difficulty in establishing brand recognition, while 52.7% reported challenges in reaching target customers. 45.5% of respondents mentioned limited profitability while 43.6% acknowledged failure to optimize available resources, and 40% expressed concerns about focusing on less promising markets. Interestingly, 36% of respondents highlighted reduced potential customers and sales, as well as difficulties in resolving disputes.

Figure 5: Factors influencing respondents' internationalization efforts



Source: DCCI Survey on MSMEs (2024)

4.4 Potential markets for the Business

According to the respondents' importance, the top 20 potential markets for the Business are presented in **Table 2**:

Table 2: Potential markets for the Business

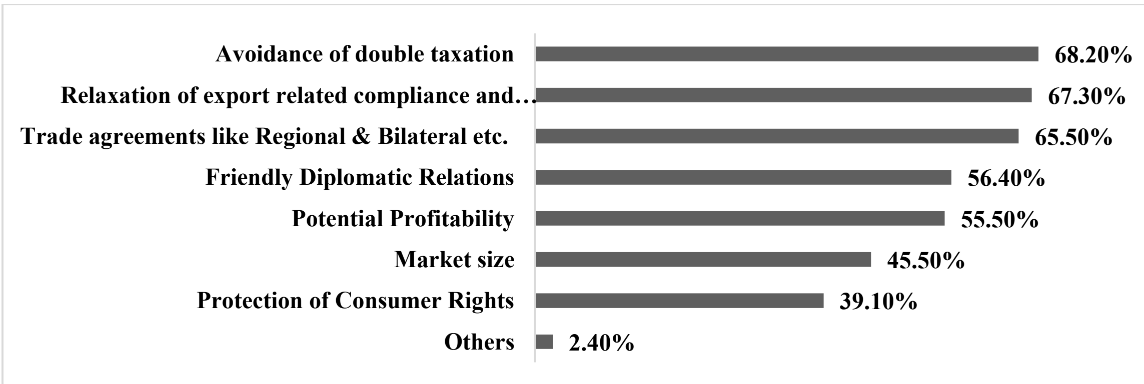
1. Europe	6. Africa	11. East Asia	16. China
2. USA	7. Japan	12. France	17. Mexico
3. Canada	8. India	13. Germany	18. Turkey
4. UK	9. Korea	14. Singapore	19. Brazil
5. UAE	10. Russia	15. South America	20. Middle East

Source: DCCI Survey on MSMEs (2024)

4.5 Factors influencing respondents' choice of export destination

Figure-6 shows a picture of the factors influencing their choice of export destination. 68.2% of respondents cited double taxation avoidance. Approximately 67.3% of respondents mentioned the relaxation of export-related compliance and regulations, while 65.5% emphasized the importance of trade agreements such as Regional and Bilateral agreements. Additionally, 56.4% of respondents highlighted friendly diplomatic relations, 55.5% emphasized potential profitability, and 45.5% expressed the importance of market size. Furthermore, about 39.1% of respondents mentioned the protection of consumer rights.

Figure 6: Factors influencing respondents' choice of export destination



Source: DCCI Survey on MSMEs (2024)

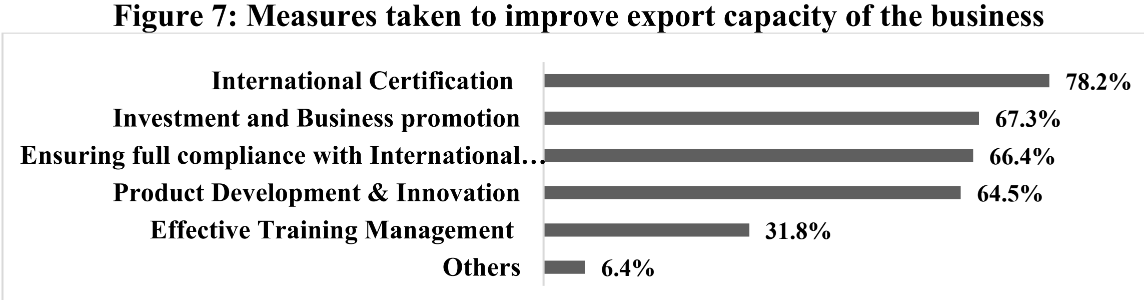
In addition, 2.4% respondents who chose 'others' as an option were asked to specify the factors that influenced the choice of these countries. From their feedback, a list of other factors is identified below:

- Easy access to market
- Quality assurance
- Government's vision and business planning

4.6 Measures taken to improve export capacity of the business

Figure-7 reports the measures taken to enhance the export capacity of their businesses. 78.2% of respondents emphasized the importance of obtaining international certification. Additionally, 67.3% of respondents mentioned investment and business promotion, while 66.4% expressed the significance of ensuring full compliance with international standard benchmarks. Moreover, 64.5% of respondents highlighted product development and innovation as key strategies. Furthermore, 31.8% of respondents mentioned effective training management as part of their efforts.

Figure 7: Measures taken to improve export capacity of the business



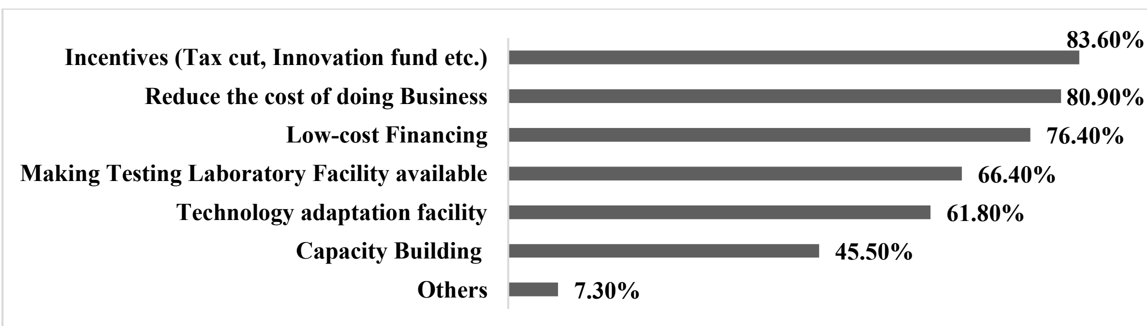
Source: DCCI Survey on MSMEs (2024)

Additionally, 6.4% of respondents who selected 'others' when asked about measures taken to improve their business's export capacity were further asked to specify the steps they had implemented. From their feedback, several additional measures were identified. These include participation in international trade shows to enhance market exposure, as well as the establishment of training facilities to build workforce capacity. Brand development emerged as a key focus, alongside efforts to strengthen backward linkages to improve supply chains. Cooperation from government factories was also highlighted as a supportive measure, along with the development of both private and international partnerships to facilitate business growth and expand export opportunities.

4.7 Government support needed for facilitating access to export market

Figure-8 reports the government or institutional support needed to facilitate their access to the export market. 83.6% of respondents emphasized the importance of alternative incentives such as tax cuts or innovation funds. Additionally, 80.9% of respondents expressed interest in reducing the cost of doing business, while 76.4% highlighted the significance of low-cost financing. Moreover, 66.4% of respondents stressed the need for the development of available testing laboratory facilities. Furthermore, 61.8% of respondents mentioned the adoption of new technology, and 45.5% underscored the importance of capacity building.

Figure 8: Government support needed for facilitating access to export market



Source: DCCI Survey on MSMEs (2024)

Additionally, 7.3% of respondents who selected 'others' when asked about the government or institutional support needed to facilitate access to export markets were further asked to specify their needs. From their feedback, several additional forms of support were identified. These include addressing harassment caused by clearing and forwarding (C&F) agents and customs officials, ensuring proper HS code specifications, simplifying customs clearance processes, and providing easier access to finance. Respondents also emphasized the need for smoother business operations, alternative cash incentives, and better banking procedures tailored to exporters. Reducing corruption and ensuring good governance were highlighted as critical, along with the need for improved public-private coordination. There was also a call for enhanced collaboration among institutions such as the Bangladesh Machine Tool Factory, BUET, and BSTI. Additionally, the provision of an Export Development Fund (EFD) was recommended to further support export growth.

5.0 Major findings from the Key Informant Interviews (KIIs)

To provide additional insight on survey results and to complement the literature on the export capability of MEMEs topic, this section presents key findings of Key Informant Interviews (KIIs) in which the participants were from 6 sectors including RMG, Light engineering (LE), Plastic, Leather & leather goods, Agro-processing and Pharmaceuticals.

Key findings and Recommendations from RMG sector are presented in Table 3:

Table 3: Key findings and Recommendations from RMG sector

Key findings	Recommendations
▪ Excessive corruption in banking is responsible for shrinking RMG competitiveness and export markets. ▪ Due to cash crunch, almost 40% of RMG export have fallen. ▪ Businessmen are facing problems using ASYCUDA. Online application is not being approved through the system. Customs authorities are blocking it and bribes are being taken for clearance. ▪ For ERC (Export Registration Certificate) and IRC (Import Registration Certificate), RMG businessmen depend on the illegal channels of brokers. ▪ Despite easy bank loan policy for RMG sector, honest businessmen are being deprived of access to finance due to the misuse of loan by many unscrupulous businessmen. ▪ Same properties are being used as collateral for several banks' loans with the aim of non-repayment. ▪ Exporters are not able to make profit significantly as foreign buyers reduce the price of products. ▪ As buyers are taking the goods on purchase contract instead of LC contract, excess Dollar is being smuggled through Banking channel. ▪ Production cost increased due to Gas and Electricity price hike.	▪ Bangladesh requires branding. ▪ Need a transparent banking ecosystem.

Source: DCCI KIIs on MSMEs (2024)

Key findings and Recommendations from Light engineering (LE) sector are presented in Table 4:

Table 4: Key findings and Recommendations from Light engineering (LE) sector

Key findings	Recommendations

▪ Government is providing training facilities to the entrepreneurs but no financial support. ▪ Entrepreneurs are not getting regular bank loan or other SME loan and they running their businesses with their small capital. Those who have sufficient capital are making huge profit from this sector. ▪ Many small entrepreneurs in LE sector are doing seasonal business (as the Agri sector is dependent on it) but in the off-season, their business remains down. If financial support is given, they would be able to run their business all over the year. ▪ machinery and small equipment in local LE industries are being produced using local raw materials. ▪ Entrepreneurs are capable enough to produce products at a cheaper price than imported products. ▪ From this sector local demand is being fulfilled and they are finding reliable platforms to export. ▪ Entrepreneurs are not aware of IPR (Intellectual property rights), Patent or Trademark certificate. ▪ Manufactured products of small businessmen are being sold by others in local country market or exported under different brand name so real businessmen are not getting recognition. ▪ Some innovative products by local small entrepreneurs/ innovators are Brick crushing machine, Water pump, Rice threshing machine etc.	▪ In LE sector financing, marketing and branding are the main challenges. Need implementation of policy measures regarding these issues. ▪ Need financial support on easy terms and conditions for the growth of this sector. ▪ Need branding and reliable platform for backward and forward linkage to expand export volume from this sector. ▪ If government provide sufficient support all imported products can be produced in our country

Source: DCCI KIIs on MSMEs (2024)

Key findings and Recommendations from Plastic sector are presented in Table 5:

Table 5: Key findings and Recommendations from Plastic sector

Key findings	Recommendations
▪ Small businesses are engaged in contract manufacturing, while larger	▪ Balancing the need to meet local demand for plastic with the desire to

Table 5: Key findings and Recommendations from Plastic sector

Key findings	Recommendations
industries handle their own production. ▪ Recent increases in exports are attributed to government support and improved profitability. ▪ The average individual's use of 6 kg of plastic products in Bangladesh suggests a considerable domestic market demand. ▪ The fact that 98% of plastic manufacturers are small industries highlights the importance of tailored support mechanisms to address their specific needs and challenges. ▪ The reliance on imported raw materials, coupled with the absence of local polymer manufacturing, poses challenges in terms of supply chain stability and cost management. ▪ Raw materials are primarily imported from China or other countries and over 90% of moulds are imported. ▪ The absence of financial support from the government underscores the importance of advocating for policies that promote the growth and sustainability of the plastic manufacturing sector. ▪ Besides the lack of recyclability, lack of technological advancements, innovation, design capabilities and testing facilities are hindering export growth. ▪ The increasing volume of imported plastic goods and energy crisis are leading to a decline in competitiveness and production of local firms. ▪ Other challenges- *Scarcity of high-quality products, Insufficient availability of modern moulding machine, dye technology, lack of skilled experts, lack of research in polymer technology, limited product*	expand export markets requires strategic planning. ▪ Need computer-aided technology and training for manufacturing die and mould. ▪ Local Production of polyphyllin and more R&D investment is required. ▪ Obtaining certifications for hygiene and quality standards can be supportive of building trust with international buyers and access to new markets. ▪ Exploring alternative sources of raw materials and adopting more sustainable manufacturing practices would be a step in the right direction. ▪ Providing incentives for polymer manufacturers to establish factories can boost the growth of the industry, create employment opportunities and enhance the country's manufacturing capabilities. ▪ Initiating and encouraging quality mould and dye-making processes can enhance the precision and efficiency of polymer manufacturing, leading to higher-quality products and increased competitiveness in the market. ▪ Providing duty exemptions for importing safety equipment related to plastic manufacturing can encourage the adoption of best safety practices. ▪ Investing in the production of biodegradable plastics aligns with global sustainability trends. ▪ Investing in automation, artificial intelligence (AI) and machine learning (ML) technologies can enhance operational efficiency, improve production processes and drive innovation within the plastic industry. ▪ Bangladesh's high rate of mismanaged plastic waste necessitates urgent action to improve recycling infrastructure and

Table 5: Key findings and Recommendations from Plastic sector	
Key findings	**Recommendations**
diversity, environmental challenges, absence of international certification facilities including hygiene certificate, Inadequate plastic waste management infrastructure and industrial plant.	promote responsible consumption and disposal practices.

Source: DCCI KIIs on MSMEs (2024)

Key findings and Recommendations from Leather & leather goods sector are presented in Table 6:

Table 6: Key findings and Recommendations from Leather & leather goods sector	
Key findings	**Recommendations**
▪ Disparity in government policy support in leather sector is more significant than in other sectors. ▪ MSME start-ups are unable to continue their businesses due to financial crisis. ▪ Business solution through one-stop service is limited than expectations. ▪ Banks are reluctant to provide financial support to MSMEs. ▪ The Central Effluent Treatment Plant (CETP) of Savar Tannery Industrial Complex is not functional. ▪ For the absence of compliance, the export volume from this sector is lower. ▪ Despite several obstacles, the export capability of MSMEs is upward-driven. ▪ MSMEs are gradually meeting international quality standards and enhancing their competitiveness globally. ▪ Product quality is being improved by the adoption of technology, including automation, digitalization and efficiency. ▪ With ongoing efforts to address challenges and opportunities, MSMEs are poised for further growth in international markets. ▪ To catch export market encounter challenges are- inadequate infrastructure, bureaucratic complication and skill shortage. These also hinder expansion into global market, limiting growth opportunities and competitiveness.	▪ Leveraging government support and international networks can further enhance MSME's export capabilities and competitiveness. ▪ Advocating for streamlined bureaucratic processes, investing in infrastructure development and offering targeted training programs to overcome skills gaps. ▪ Need easy access to finance, alternative of cash subsidy through policy support and development of backward linkage industries. ▪ Need strategic partnerships to introduce modern technology. ▪ Need sufficient support for startup and effective one-stop service for business solution. ▪ Central Effluent Treatment Plant (CETP) of Svar Tannery Industrial Complex needs to be restructured. ▪ For leather sector, all facilities must be ensured like RMG sector. ▪ For sectoral development need to form specific authority as the role of BSCIC is disappointing.

Source: DCCI KIIs on MSMEs (2024)

Key findings and Recommendations from Agro-processing sector are presented in Table7:

Table 7: Key findings and Recommendations from Agro-processing sector

Key findings	Recommendations
▪ Due to customs issues, particularly regarding assessment values, businessmen are exporting products below assessed values. ▪ Supply chain disruptions caused by global economic turmoil and driving up the production cost of agricultural products. ▪ The competitiveness of this sector is declining due to increased business expenses, bureaucratic hurdles and customs issues. ▪ Businessmen are facing challenges in getting sanitary and phytosanitary certificates. Physical presence and inspection are mandatory despite having online system. ▪ Lessened cash incentive is resulting incomplete disbursement of entitled benefits. ▪ Escalating freight charge is inflating business costs. ▪ The lack of bond facilities further complicates export processes. ▪ The increased cost of raw materials used for processing is escalating business expenses.	▪ Source tax and import tax on raw materials in the agriculture sector need to be repealed. ▪ Ensuring uninterrupted and sustainable utility services is essential. ▪ To ensure vast export potential, bond facilities must be guaranteed. ▪ Expand processing facilities to enhance competitiveness in the global market. ▪ To bolster export capacity, it is crucial to identify sustainable alternatives of cash incentive. ▪ Government intervention is essential for reducing the costs of raw materials, addressing bureaucratic obstacles and resolving customs issues.

Source: DCCI KIIs on MSMEs (2024)

Key findings and Recommendations from Pharma sector are presented in Table 8:

Table 8: Key findings and Recommendations from Pharma sector

Key findings	Recommendations
▪ The main obstacle to export capabilities of the pharma sector is the scarcity of raw materials. ▪ The harassment of customs authority is severely hampering both import and export businesses.	▪ To unleash the full potential of the pharmaceutical sector's export endeavors, governmental support and collaborative efforts within the industry are mandatory.

Table 8: Key findings and Recommendations from Pharma sector

Key findings	Recommendations
▪ The withdrawal of cash subsidies will diminish export capacity, create obstacles to compete in the global market and lead to loss of market share. ▪ Because of the higher prices of Bangladeshi medicine, Importers are buying products from other countries even after signing contract. ▪ The deterioration of the export market and decreased capital have been leading this industry to pull out from further trade. ▪ Representatives of Bangladesh foreign missions often fail to provide necessary assistance to businessmen even reluctant to meet them. ▪ It is challenging to gain insight into the demand of business as well as the required product specification in a particular country. ▪ Insufficient infrastructure, hampering the efficient movement of goods and increasing operational costs are exacerbated challenges for MSMEs. ▪ Limited access to finance and the challenge to compete with larger enterprises constrain the export capabilities of MSMEs. ▪ MSMEs encounter significant obstacles when attempting to expand internationally, primarily stemming from their constrained resources for marketing and compliance. ▪ With limited resources allocated for marketing efforts, MSMEs are struggling to carve out a niche amidst the dominance of more established players in the international market. ▪ Certain niche products have successfully penetrated international markets but broader export capabilities face hurdles including compliance with stringent international regulatory standards and navigating complex export procedures. ▪ The lack of accessible financing options constrains the ability to invest in essential	▪ Export consortiums can allow MSMEs, to pool resources for marketing, compliance expertise, logistics and be more competitive internationally. ▪ The government can introduce programs to connect MSMEs with mentors, consultants and training on navigating international trade regulations and marketing. ▪ Should encourage MSMEs to utilize online marketplaces and e-commerce platforms to reach a wider audience and reduce marketing costs. ▪ Should build brand awareness and target specific markets. In this regard Introducing training programs for MSMEs on digital marketing strategies like social media marketing and Search engine optimization (SEO) ▪ The government should invest in infrastructure development, particularly for transportation networks and reduce export costs for MSMEs. ▪ Introduce financial schemes with easier access to loans and grants aiming at export-oriented MSMEs. ▪ Establish special economic zones with simplified regulations, and tax benefits to facilitate export activities from MSMEs. ▪ Ensure access to business development services to assist MSMEs with market research, product certification and export documentation. ▪ The government should set export target for each mission

Table 8: Key findings and Recommendations from Pharma sector

Key findings	**Recommendations**
upgrades and necessary expansions for competing effectively on a global scale. ▪ Inadequate infrastructure and financing facilities serve as challenging bottlenecks to global expansion. ▪ The burden of compliance with complicated regulatory frameworks places further strain on limited resources and diverts attention from core business activities.	and for poor performance, punitive measures should be taken. ▪ Officials of all missions, embassies or commercial counsellors should communicate with various chambers, associations and businessmen of that country and collect list of their requirements for products as they can import from Bangladesh.

Source: DCCI KIIs on MSMEs (2024)

6. Conclusion and Recommendations

Micro, Small, and Medium Enterprises (MSMEs) are crucial contributors to Bangladesh's economy, playing a significant role in industrial production, exports, employment creation, and expanding the consumer base. Government initiatives aimed at boosting MSME competitiveness, improving quality, facilitating access to finance, and promoting technology adoption have driven a shift towards the production of more sophisticated goods. However, these enterprises continue to face several challenges. Bureaucratic harassment and corruption impede operational efficiency, while inadequate air cargo services and a shortage of skilled labor hamper productivity. Additionally, insufficient capital and limited access to finance constrain their growth potential. The lack of cooperation in mold production and synergy in non-traditional assets restricts the diversification of exports. Moody's poor rating and currency issues with African nations further deter foreign investment and trade, while reductions in government incentives exacerbate these challenges.

To overcome these hurdles, Bangladesh must enhance its technical infrastructure, automate taxation processes, and refine banking systems. Diversification of exports, fostering innovation, and stimulating investment are critical to sustaining growth. Educational reforms and streamlined bureaucratic processes are essential, alongside efforts to ensure fair competition and robust support for MSMEs. Strengthening industrial capacity, improving product development, and optimizing logistics are key factors that will help MSMEs thrive. Government backing in areas such as packaging, warehouse facilities, and port efficiency is necessary, alongside reducing tariffs, upgrading machinery, and maintaining high-quality standards. Increased cooperation with international partners and the exploration of new markets are vital for sustained export growth. Addressing these issues will help Bangladesh unlock its export potential and advance its economic prosperity.

Based on these findings, this study puts forward the following recommendations to enhance the export capacity of MSMEs. First, strategies to streamline export processes and improve product quality are needed to strengthen Bangladesh's position in the global market. Ensuring an uninterrupted power supply and improving transportation infrastructure will reduce production costs and boost MSME competitiveness in export markets. Financial incentives, subsidies, and access to credit are crucial to enabling MSMEs to invest in technology upgrades, research and development, and expansion initiatives. Streamlining customs procedures and providing easy access to customs facilities can cut down the time and costs associated with exporting products. Reducing the number of required documents will significantly ease the burden on manufacturers. Establishing testing laboratories for product quality assessment and innovation is vital for ensuring compliance with international standards and fostering industry-wide innovation. Investments in technical infrastructure, including automation, are critical, as is the development of a streamlined banking system to ensure timely confirmation of export orders. Significant educational reforms are also necessary to address skilled labor shortages, especially in light of challenges posed by LDC graduation. Further, initiatives must be introduced to secure international recognition of BSTI certifications. Lastly, developed port facilities are essential for improving export logistics, while extending storage capacity at ports can facilitate trade operations. Exploring non-European markets for new export opportunities and finalizing bilateral trade agreements with countries like Brazil, Australia, India, China, Japan, and Russia are crucial for expanding Bangladesh’s trade footprint.

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Appendix:

Table A1: Number of Employees

Employee Number	Frequency	Percent
1 to 49	52	47.3
50 to 99	23	20.9
100 to 199	17	15.5
200 to 499	12	10.9
500 to 999	3	2.7
1000 and above	3	2.7
Total	**110**	**100.0**

Table A2: Tenure of Business (in years)

Tenure (in years)	Frequency	Percent
1 to 20	81	73.6
21 to 30	21	19.1
31 to 40	8	7.3
Total	**110**	**100.0**

Table A3: Type of Business of the Respondents

Business Type	Frequency	Percent
Micro	8	7.3
Small	53	48.2
Medium	49	44.5
Total	**110**	**100.0**

Table A4: Challenges face in attempting to internationalize their Business

Challenges	Frequency	Percent
Lack of access to export market	23	20.9%
Difficulty in complying with international regulation and standards	57	51.8%
Limited financial resources for export-oriented activities	65	59.1%
Inadequate marketing and promotion capabilities	60	54.5%
Difficulty in finding reliable international partners	62	56.4%
Language and cultural barriers	13	11.8%
Complex logistics and transportation requirements	76	69.1%
Tariff and Non-tariff Barriers	84	76.4%
Complex taxation process	89	80.9%
Others	14	12.7%
Lack of efficiency and automation in Customs Stations	78	70.9%

Table A5: Factors influencing respondents' internationalization efforts

Factors	Frequency	Percent
Reducing potential customers & sales	39	35.5%
Increasing cost, recalls, legal risks and delay in market entry	73	66.4%
Focusing on less promising markets	42	40%
Failing to optimize available resources	48	43.6%
Difficulty in reaching target customers	58	52.7%
Difficulty in building brand recognition	71	64.5%
Difficulty in resolving disputes	39	36%

Potential Profitability Loss	50	45.5%

Table A6: Factors influencing respondents' choice of export destination

Factors	Frequency	Percent
Market size	50	45.5%
Protection of Consumer Rights	43	39.1%
Avoidance of double taxation	75	68.2%
Trade agreements like Regional & Bilateral etc.	71	65.5%
Friendly Diplomatic Relations	62	56.4%
Potential Profitability	61	55.5%
Relaxation of export related compliance and regulations	74	67.3%
Others	3	2.4%

Table A7: Measures taken by respondents to improve the export capacity of their business

Measures	Frequency	Percent
Effective Training Management	35	31.8%
International Certification	86	78.2%
Investment and Business promotion	74	67.3%
Product Development & Innovation	71	64.5%
Ensuring full compliance with International Standard Benchmark	73	66.4%
Others	7	6.4%

Table A8: Government or institutional support required to facilitate access to export markets

Types of Government or institutional support	Frequency	Percent
Capacity Building	50	45.5%
Low-cost Financing	84	76.4%
Making Testing Laboratory Facility available	73	66.4%
Reduce the cost of doing Business	89	80.9%
Incentives (Tax cut, Innovation fund etc.)	92	83.6%
Technology adaptation facility	68	61.8%
Others	8	7.3%

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