Ministry of Expatriates' Welfare and Overseas Employment

Report (Revised)

on

Skill Upgradation Schemes for Migrant Workers in Light of Changing Global Demand, 4IR and Artificial Intelligence

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List of Abbreviations

AGV	Autonomous Guided Vehicles
AI	Artificial Intelligence
AMR	Automated Mobile Robots
ANN	Artificial Neural Networks
BDA	Big Data Analytics
BDT	Bangladeshi Taka
BIDS	Bangladesh Institute of Development Studies
BMET	Bureau of Manpower, Employment and Training
BOESL	Bangladesh overseas Employment and Services
BTEB	Bangladesh Technical Education Board
CAD	Computer Aided Design
CPS	Cyber-Physical Systems
CRM	Customer Relationship Management
ERP	Enterprise Resource Planning
FGD	Focus Group Discussions
HMI	Human-Machine Interaction
ILO	International Labour Organization
IOM	International Organization for Migration
IoT	Internet of Things
IT	Information Technology
KII	Key Informant Interviews
KSA	Kingdom of Saudi Arabia
MOEWOE	Ministry of Expatriates' Welfare and Overseas Employment
MOF	Ministry of Finance
NSDA	National Skills Development Authority
POS	Point of Sale
RFID	Radio-Frequency Identification
RPL	Recognition of Prior Learning
SEIP	Skills for Employment Investment Program
TV	Television
UAE	United Arab Emirates
UK	United Kingdom
US	United States

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Executive Summary

As a labor surplus country Bangladesh has a bright prospect in overseas employment since every year it exports a significant number of human capitals and contributes greatly in the economy of Bangladesh earning remittance. Now the country is the sixth largest source country of international migrants with around 1.5 crore Bangladeshi currently working abroad. Bangladesh officially set out its journey in overseas employment from 1976 exporting some of 6087 male workers mainly to Middle East region and 2189 female workers keep their footprint in this sector in 1991. Since then, every year the volume of human capital export is being increased except the terrible year of pandemic situation (COVID-19), 2020. It is good news for the country that in 2022 breaking all the past records 11, 35,873 migrant workers left their motherland for searching work in abroad and in that year, Bangladesh had earned the highest remittance of 1,95,038.00 crore TK. In the current year of 2023, Bangladesh has already exported a significant number of manpower for overseas employment which is 213572 up to February, 2023.

Most of the Bangladeshi migrant workers are working mainly in the countries of KSA, UAE, Qatar, Kuwait, Oman, Bahrain, Lebanon, Jordan, Libya, South Korea, Hong Kong, Japan, Malaysia, Singapore, China, Brazil, Egypt, Brunei, Mauritius, Iraq, Sudan, South Africa, Cyprus and even in some developed countries like- UK, USA, Italy, Canada etc. Unfortunately, 47% of migrant workers of Bangladesh are considered as unskilled or less skilled, according to official data and that's why they are ill-paid. Almost all of them are working as labors for construction work, drivers, maids and housekeeping cleaners, dining room and cafeteria attendance, production workers, cook, farmworkers, retail sales persons, waiter and waitress in the hotel and restaurants, electricians, cleaners and helpers as well as plasterers and these types of low paid and low skilled occupations they do because of their incompetence. Bangladeshi migrants have been facing different challenges like- lack of language proficiency, knowledge of using technology, training and on the other hand high fees for migration charged by recruitment agencies, especially for low skilled jobs; low wages, lack of information on migration opportunities and risks etc.

To overcome the challenges the workers should keep pace with the changes of global demand. Changes of global demand force the workers to cope up with the use of new technology for survival and enter into the global labor market. This study is on "Skill Upgradation Schemes for Migrant Workers in Light of Changing Global Demand, 4IR and Artificial Intelligence.

The objective of the study is to conduct empirical research on skill upgradation schemes for migrant workers in light of changing global demand, 4IR and artificial intelligence. The current global requirement can be observed by the glimpse of movement of global labour force by embracing aspects of 4IR.

Industry 4.0 continues to be a new topic in academic literature, and there are gaps in business intelligence studies on the topic. The notion of Industry 4.0 presupposes blurring the distinctions between human and machine labor. The goal of Industry 4.0 is to achieve more operational efficiency and efficiency, as well as increasing automation. The concept's most prominent qualities are: production digitalization, optimization, and personalizing; automation and adaptability; human-machine interaction (HMI); value-added services; and automated data interchange and communication. The broadening of digital technologies has resulted in the rise of the latest term-Industry 4.0, which is regarded as the Fourth Industrial Revolution. IoT, BDA, robots, additive manufacturing, and other emerging technologies are extensively diffused and applied in a variety of sectors. Sensors, communication protocols, cloud computing, cyber-physical systems, additive manufacturing, business intelligence and bigdata, and other developing technologies are among the key technologies of Industry 4.0. The majority of these technologies are not new. Yet, it is the confluence of technology, business processes, and data processing that creates Industry 4.0 special. The goal of Industry 4.0 is to achieve more operational effectiveness and productivity, as well as increasing automation. Nowadays, the practice of applying computer knowledge instead of animal or human knowledge is highly prevalent.

Data for this secondary research project were gathered from both primary and secondary sources. Primary data were gathered using questionnaire surveys, key informant interviews (KIIs), and focus group discussions (FGDs), while secondary data sources included yearly reports from migration-related institutions, books, journals, and articles. The migrant workers were main respondents to figure out skill gap. Quantitative data analysis will be carry

forward with reliability test, descriptive statistics, cross tabulation and multiple regression analysis for interpreting survey outcome. Qualitative study such as thematic analysis will be also applied for evaluating qualitative data such as findings from KIIs and FGD.

The survey respondents in Bangladesh were predominantly men, with 95.5% being men and 4.5% being women. 50% of respondents were between the ages of 26 and 35, and Bangladesh's economy is primarily based on agriculture. 27% of the skilled workers have past agricultural work experience, while 31% have none. 34% of migrant skilled workers have less than five years of experience; however some core skill employees have 6-10 or more than 16 years of experience. Individuals choose to migrate when they are young in order to earn more money abroad; therefore they only have a few working years in Bangladesh. The most important details in this text are that 68% of skilled workers still require training from Bangladesh to go abroad, 18% have only language training, 41% return to Bangladesh after working less than three years abroad, 26% try to take 4 to 6 years of experience abroad, and the majority of migrant skilled workers go to Middle East and other Asian countries, 19% to Saudi Arabia, and 5% to the UAE. Skilled migrants from Bangladesh generally work in construction, with 46% earning between BDT 50,001 and BDT 100,000. Smartphones are used by over 98% of skilled employees due to their ease and advantages. The most usable technological skills in different work activities of the workers are 1. Data base user interface and query software 2.Desktop publishing software 3. Document management software 4.Electronic mail software 5.Enterprise resource planning ERP software 6.Graphics or photo imaging software 7.Internet browser software 8.Office suite software 9.Operating system software 10.Presentation software 11.Project management software 12.Spreadsheet software 13.Web page creation and editing software 14.Word processing software

There are some scope to overcome the obstacles and challenges existed and coming due to the changes of demands in the global labor market through - Development of Skill Sector Program under National Skill Development Authority (NSDA). To address the global demand for the migrant workers, there should be a coordinated effort and monitoring plan which should be led by NSDA; Certification from international skill centers/ Equivalence the skill training certificates; Upgradation of the training institutes with modern curriculum,

equipment, and trainer; Aware the migrant workers about the skill requirement; Tracing the skill of migrant workers and classify them with the level of skills; Role of recruiters in skill upgradation schemes; Actions taken from the global best practices; Migrant Community, Academia, Recruiters and Government collaboration; A separate cell to evaluate technology integrated knowledge for occupation; Cultural and language improvement schemes.

Bangladesh government is emphasizing on and taking initiatives in this regard patronizing different organs and institutes like- Ministry of Expatriates' Welfare and Overseas Employment, BMET, Bureau of Manpower, Employment and Training (BMET), Bangladesh overseas Employment and Services (BOESL), and also many agencies for getting the workers prepared before leaving the country to compete with the migrant workers of other countries in the global labor market.

1.0 Introduction

During the past 50 years, tens of millions of people have migrated to our country in search of work possibilities abroad. By reinvesting their hard-earned earnings in Bangladesh and maximizing the human and social capital they have gained overseas, such as new skills and capacities, this migrant labor has the potential to greatly contribute to the country's economic progress. However, despite having many years of valuable overseas work experience, many people are nevertheless stuck in low-paying, low-status employment without receiving any recognition for their increased talents or official certification.

According to a recent International Organization for Migration (IOM) research, 60% of recently repatriated migrant workers reported a desire to upgrade and seek credit for their newly gained abilities. Seventy-five percent indicated they would prefer to work in a place where their skills would be properly recognized and rewarded if abroad employment options reopened. The Bangladeshi government now employs the Recognition of Prior Learning (RPL) scheme to assess and certify a worker's skill set. The RPL system was implemented as part of the 2011 National Skills Development Policy to help workers recognize their growing, informal, and on-the-job talents. While many Bangladesh-based workers have obtained RPL certification, millions more migrant workers and returnees are ignorant of the system or its numerous benefits, which include improved earning power and access to better-paying employment both at home and abroad.

ILO Bangladesh is currently collaborating with the MOEWOE and the Bangladesh Technical Education Board (BTEB) to certify returnee migrant workers for reintegration and re-migration. The country is steadily progressing toward the establishment and implementation of a Recognition of Prior Learning (RPL) system. According to the BTEB, 411 RPL centers around the country have verified the abilities of 41,560 individuals, including 15,000 foreign workers (The Daily Star, 2020). The government in 8th Five-Year Plan has been set an ambitious target of earning $150 billion remittance between July 2020 and June 2025 through un-skilled, semi-skilled, skilled and high-skilled migrants workers (The Daily Star, 2021).

The challenge for Bangladesh is to modernize its educational systems and infrastructure for skill development in order to produce the talent required for a cutting-edge, digital, and post-agricultural economy as we advance toward upper-income status. Bangladesh is in a good position to benefit from 4IR. Its manufacturing sector is expanding, and it boasts a creative and enterprising class. On the other hand, the level of automation is still low, the

manufacturing sector is just comprised of clothing and a few other small businesses, the infrastructure is subpar, and the institutions might use some improvement. Bangladesh must take specific steps to address concerns with accessibility, cost, and the use of technologies in a rapidly changing global context if it is to seize the prospects presented by 4IR[1].

Definitions for un-skilled, semi-skilled, skilled and high-skilled labour

Skill

Skill refers the knowledge and technique acquired for doing any specific work, or the capability and ability to produce goods and services as per required standard of industrial and professional demand of national and international markets (NSDA Act, 2018).

The Labors working in the global human capital market are categorized in the following ways:

> Unskilled
> Semi-skilled
> Skilled
> Highly skilled

Unskilled

An employee having no or minimum skills or experience performs activities involving simple operational duties is treated as an unskilled employee. This type of employee mainly needs more physical abilities than other skills. Though they should be familiar with the environment of their occupation and articles and services, have no scope of independent judgment regarding activities.

Semi-skilled

An employee who performs activities generally defined routine nature where the major requirement is not so much of skill, judgment is considered as semi-skilled worker. Here, others make the important decisions and a semi-skilled worker's task is confined to a limited scope with routine operations.

Skilled

A skilled employee is one who has the capability to work efficiently exercising independent judgment in necessity. He is able to discharge his duties with responsibility and perform as per necessary standard of professional demand. He must have enough knowledge to deal with the activities of the trade or organization he works in.

Highly skilled

A highly skilled employee works with full independent judgment and responsibility. He is capable of performing his job efficiently and supervises the other skilled employees. He assigns and monitors other skilled employees' duties and performance.

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[1] Industry 4.0, 4IR , 4.0i used as synonymous terms in this report

As per population density of Bangladesh (according to IOM 2021, 1,116 people per square kilometre) Bangladesh is denoted as one of the densely populated countries. The labour abundancy is one of the key backbone pillars for the economy as well. By analysing demographic information, the country is experiencing demographic dividend. The labour intensity and global demands made Bangladesh a supply source for the global labour market. The economic expansion is rapid which is more than 6 times after 2010(IOM, 2021). From the data Migration in Bangladesh- A country Profile 2018, it is reported more than 12.2 million labour migrated from Bangladesh. According to a report of BIDS, there is 30% skill gap in the labour market (The Daily Star, August 28,22).

The current global requirement can be observed by the glimpse of movement of global labour force by embracing aspects of 4IR. According to Lasiet al. (2014) "Industry 4.0" refers to the rising automation and digitization of the production environment, as well as the development of digital value chains to enable communication between goods, their surroundings, and business partners". Schwab (2016) emphasized the need of comprehending how the Fourth Industrial Revolution would alter the "social, economic, human, and cultural context in which we live."

In recent years, the term "Industry 4.0" has grown in popularity. The quantity of published articles in the Scopus & Google Scholar databases increased significantly from 2005 to 2006, from roughly 100 to 150; from 2007 to 2014, the number increased steadily. From 2014 to 2015, there was a considerable increase, with 225 documents released in 2015. China, the United States, and the United Kingdom are the most active countries in this area (Zhonget al., 2017).

Industry 4.0 remains a new topic in academic writings, and there are gaps in business intelligence studies on the topic. As a result, there is a need to understand what has been explored and what remains to be studied. Businesses in the US and Germany indicate a comparable level of readiness for Industry 4.0 difficulties – over 70% of them believe they are prepared to handle this issue.

The broadening of digital technologies has resulted in the emergence of a new term-Industry 4.0, which is regarded as a new Industrial Revolution. IoT, BDA, robotics, additive manufacturing, and other emerging technologies are widely diffused and applied in a variety of fields (retail, pharmacy, logistic and etc.). At the same time, these technologies alter

corporate practices, creating new opportunities. There is no doubt that Industry 4.0 is bringing business organizations closer together. Because the industry structure is now greatly scattered over a large number of enterprises, the kind and strength of contacts between those organizations is becoming extremely important (PaulusRohmer et al., 2016).

On the other hand, Artificial Intelligence (AI) is not a new word; it dates back to World War II, when Alan Turing released his article "Computing Machinery and Intelligence," in which he raised the question "Can computers think?" Thus, John McCarthy coined the term "Artificial Intelligence" (Tecuci, 2012; Stuart & Peter, 1995). Despite early scientists' significant contributions, AI as a business was not established until the 1980s, coupled with hardware development. Early AI applications included the automation of complicated, repetitive, and precise work activities, such as industrial robotics manufacturing, which displaced human occupations in a number of companies. After the mid-1990s, AI software saw significant advancements, such as IBM's "Deep Blue" clever software, which defeated Gary Kasparov, the World Chess Champion, text prediction on cell phones, and speech synthesis technology (Lucci & Kopec, 2016). AI, on the other hand, is a resurrected science, and it is now agreed by all that manufacturing robots and speech synthesis are no longer regarded as AI. Today's AI consists of software and machines that imitate human intellect. Lucci & Kopec (2016) defined Artificial Intelligence as being able to create computer software and/or hardware systems that exhibit thinking comparable to that of humans, to display characteristics usually associated with human intelligence. To put it another way, this intelligence is capable of perceiving, analyzing, and interacting with its surroundings, as well as learning from prior experience and solving difficult issues without the need for human involvement (Chui, Manyika and Miremadi, 2015). However, why do we need these intelligent systems to replace people if they are meant to mirror human intelligence? Intelligent software and robots are now capable of doing complicated tasks beyond human competence because of significant advancements in big data, internet connectivity, and computer hardware such as memory capacity and high-speed processors (Lucci & Kopec, 2016). Smart systems and robots not only do jobs quickly, but they also reduce the dangers of human mistakes and bias. Artificial intelligence encompasses a variety of fields and methods, including neural computing, data mining, genetic algorithms, expert systems, and artificial neural networks (ANN) (Kantardzic, 2011).

This empirical research has been aimed to assess skill upgradation schemes for migrant workers in light of changing global demand, Fourth Industrial Revolution (4IR) and Artificial

Intelligence (AI). This might be used as an essential tool to combat challenges raised to supply global skills for migrant labours.

Strategically a mixed method (Qualitative-Quantitative) has been employed to assess and enumerate respondents for their readiness in migrants' skills. Data has been collected mainly from the primary sources like FGD, KII, Questionnaire and direct face to face interview as well as secondary sources like journals, books and articles. Although there had been few obstacles like respondent's reluctance and shyness to share their subjective facts and conditions about readiness for migrant worker.

The study is limited to the ToR guidelines and scoped thereby both subjectively and objectively figure out their readiness for global demand of cutting edge technologies and artificial intelligence. The study surely has significance because it will expand the frontier of knowledge by identifying critical success factors for effective labor migration implementation plan to ensure the safe, orderly and ethical migration.

1.1 Background

The German government has proposed the Industry 4.0 concept to guide industrial firms through the fourth Industrial Revolution (Lee et al, 2014). Sensors, communication protocols, cloud computing, cyber-physical systems, additive manufacturing, business intelligence and bigdata, and other cutting-edge technologies are among the key technologies of Industry 4.0. Most of these technological advancements are not brand-new. Yet, Industry 4.0's distinctiveness is a result of the convergence of technology, business processes, and data processing (Anderlet al., 2015). By the development of new goods and services, increased competitiveness, and enhanced operating procedures, enterprises will be able to create value (Anderlet al., 2015).

The process of using machine knowledge in place of animal or human knowledge is very popular nowadays. The incredible notice this improvement in information technology attracted cannot be overemphasized. Today, there is no economic sector that has not benefited from this peculiar school of thought. According to Zhongzhi S. (2011), Artificial intelligence can be defined "as the science and engineering of imitating, extending, and augmenting human intelligence through artificial means and techniques to make intelligent machines". Before the advent of the industrial revolution, people were made to perform

heavy and mental jobs but the due to industrial revolution machines were made to do heavy and mental jobs in replace human activity which led to economic and social progress.

In China, people invented many mechanical devices to achieve mental jobs such as the abacus, the Water-powered Armillary Sphere, Celestial Globe Tower, and the Houfeng Seismograph. Aristotle invented the first formal deductive reasoning machine called syllogistic logic. Francis Bacon (1561-1626) introduced the inductive reasoning method and the first mechanical calculator for division and multiplication were invented by Gottfried Leibniz (1646-1716). After the 19th century, there was an advancement in information science and technology such as Mathematical Logic, Automata Theory, and Cybernetics. (Zhongzhi S. (2011). All of these and other researchers contributed greatly to the development of Artificial intelligence and brought the birth of Artificial intelligence in 1956. The conference held at Dartmouth by John McCarthy and others brought the beginning of AI in the real sense. The research and development of AI started gaining progress in the research field, which led many researchers to successfully gain progress in many AI domains such as Machine Translation, Robotics, Pattern Recognition, Natural language processing, and Image processing. This application generates attraction into all areas of economic sectors and promotes development. This progress continues from 1960,1970,1980,1990 and 2000 till today.

The idea of Industry 4.0 is a current reality of the new society, since innovation and technological progress play a significant part in every firm. Industry 4.0 significantly alters the design, processes, operations, and services of products and production systems.

1.2 Problem Statement

The concept of Industry 4.0 assumes obscuring the differences between the work of people and the work of machines. Like the first industrial revolution improved the operation of manufactories, the second one introduced electricity into the industry and the third one automated the uniform tasks of line workers, the fourth one improves information management and decision-making(Ślusarczyk, 2018). In the concept of 4IR, reduction of cost , improvement of performance, and offering higher-quality goods and services while taking consumer preferences and behavior into account are to be achieved through production automation based on the use and exchange of real-time data using artificial intelligence (Pieriegud, 2016; Androniceanu, 2017). The goal of Industry 4.0 is to achieve more operational effectiveness and productivity, as well as increasing automation. The concept's most notable features are: production digitization, optimization, and personalization;

automation and adaptability; human-machine interaction (HMI); value-added services; and automated data interchange and communication (Roblek et al., 2016; Posada et al., 2015).

Industry 4.0 is creating a requisite for the revolution of traditional business models into digital business models, as well as the need to connect various technologies and robots, all of which enables mass customization in manufacturing (Crnjac et al., 2017; Flynn 2017). In general, Industry 4.0 is presented as the application of cyber-physical systems within industrial production systems (Posada et al, 2015). Industry 4.0 has a huge influence on manufacturing, due to its focus on creating a smart environment (Mabkhot et al., 2018). The use of technologies in production organizations changes the organization of work and has a significant impact on job qualifications. Industry 4.0 therefore brings and will continue bringing, variations in production, technology and organization and competencies, as well as job profile changes (Morlock et al., 2016). Industry 4.0 has enormous potential and will give a slew of economic and social prospects as a result of a paradigm shift in labor structure, business strategies, and manufacturing technologies (Kagermann, 2013). Everything in the production environment is integrated in the Industry 4.0 framework, autonomously exchanging information, activating actions, and regulating each of them independently, allowing the construction of smarter processes (Weyer et al., 2015). It enables all physical processes and information flows to be available when and where they are required across all manufacturing supply chains, numerous industries, small and medium-sized enterprises (SMEs), and major corporations (Wang et al., 2016).

1.3 Objectives

The general objective of the study is to conduct empirical research on skill upgradation schemes for migrant workers in light of changing global demand, 4IR and artificial intelligence.

The following are the specific objectives of the study:

- ➢ To determine the current global skill requirements.
- ➢ To assess the preparedness of current migrant workers in the light of global demand, 4IR and artificial intelligence
- ➢ To find out challenges in adopting global skill requirements, 4IR and artificial intelligence
- ➢ To identify the policies and pathways for safe, orderly and ethical migration.

1.4 The Rationale of the Study

This study is significant in a number of respects. Firstly, the paper is timely and in accordance with national priority as labour migration is not a choice but as an important economic vehicle since the independence of Bangladesh. In attempt to improve skill at every level, the initiatives of governments need to address the current global shift along the technological breakthrough. Secondly, the study is significant because it will expand the frontier of knowledge by identifying critical success factors for effective labour migration implementation plan to ensure the safe, orderly and ethical migration. Furthermore, the research is justified on the grounds that its recommendations will enhance policy decisions of government to improve skill upgradation scope and cope up with the new era of quality.

With the rapid development of AI technology, it can be used to develop new tools that can help to improve the efficiency and effectiveness of migration management, and it can also be used to analyze data in new ways that can help to better understand migration patterns and trends. This is leading to changes in the way that different actors in the field of migration management operate, as they are increasingly using AI-powered tools and insights to make decisions and take action. AI-capable states may utilize AI algorithms to predict the next 'migration crisis' with more accuracy, thus anticipating incoming human migrations based on a range of available data, such as Wi-Fi positioning, big data, or Google Trends (Beduschi, 2020).

The use of AI technology for international migration management may potentially contribute to the current debate asking for more data-driven and evidence-based policies in this area. Because AI algorithms are powered by data, the more widely they are used in migration management, the more data they will require and produce. Such a situation may strengthen the current trend of 'datafication of migration management' (Beduschi, 2020). This formulation alludes to an over-reliance on various sorts of data, such as satellite and big data, for migration management and border control. The datafication is a result of the increasing governmental investment in software and information management systems for bord The use of technologies in production organizations changes the organization of work and has a significant impact on job qualifications. Industry 4.0 therefore brings and will continue bringing, variations in production, technology and organization and competencies, as well as job profile changes (Morlock et al., 2016).

1.5 Scope of the Study

The broad area of the study is to see the preparedness of the current workforce considering the global demand, 4IR and AI. As the dimensions of AI and occupations are quite wide, so this study was investigated the queries in the following routes:

First, the literature in related field was used for guiding principles. Secondly, migrant demographic work profile was reviewed specially occupation and work destination. Finally, the study was confined to the objectives. So there can be many discussion and interest area other than objectives, which may not be found in the study outcome.

The study is limited to the ToR guidelines and scoped to assess migrant skills in term of $IR and AI in light of global changing demand.

2.0 Literature Review

2.1 Global Occupation Demand Scenario

2.1.1 Bangladesh-wise scenario

Bangladesh is known as an over populated country and consequently without any doubt it is a labor surplus country all over the world. Every year, a significant number of workers leave the country for overseas employment dreaming the dream of changing their vulnerable economic condition positively. Middle East countries are the most demanded target of the workers since a greater part of the migrant workers are illiterate or less educated and they don't have the competence to work in the developed countries. Almost all of them are working as labors for construction work, drivers, maids and housekeeping cleaners, dining room and cafeteria attendance, production workers, cook, farmworkers, retail sales persons, waiter and waitress in the hotel and restaurants, electricians, cleaners and helpers as well as plasterers and these types of low paid and low skilled occupations they do because some 47% of migrant workers of Bangladesh are considered unskilled or less skilled, according to official data. However, the country is now the sixth largest source country of international migrants with around 1.5 crore Bangladeshi currently working abroad.

After independence, officially in 1976 Bangladesh experienced first the taste of overseas employment exporting manpower to the countries of KSA, UAE, Oman, Qatar, Bahrain Libya and few others. In the very first year, 6087 potential male migrant workers left for different countries of the world mainly middle-east region. The female set out their journey in this sector from 1991 with 2189 as migrant workers. With the passage of time the number of migrant workers had been being increased almost every year but in the last decade, there was a revolution in this sector. Although, in 2020 due to pandemic situation (COVID-19) throughout the world, the number was decreased comparing to the previous years which was 2, 17,669. Again from 2021 it became a noticeable number of 6,17,209 and in 2022 breaking all the past records it reached to 11, 35,873. In that year, Bangladesh had earned the highest remittance of 1,95,038.00 crore TK. In the current year of 2023, Bangladesh has already exported a significant number of manpower for overseas employment which is 213572 up to February, 2023.Total migrant workers from Bangladesh are 14,983,606 among which male are 1,38,61,913 and female are 11,21,693 have been working in many countries of the world and contributing greatly in the national income of Bangladesh. . KSA has been considered as

the biggest labor market for Bangladesh where 5366279 migrant workers which is 35.81% of the total number are providing or provided services with goodwill.

In spite of having a bright prospect in the overseas employment market, the migrant workers from Bangladesh have been facing a number of challenges like – lack of language proficiency, use of technology, lack of training, incompetence in cultural and social cope up, ill-payment. Besides these, The Problems faced by Bangladeshi migrants include: high fees for migration charged by recruitment agencies, especially for low skilled jobs; low wages, lack of information on migration opportunities and risks; discrimination, exploitation and abuse while overseas, and insufficient services to protect the rights of workers. They also face a number of problems before leaving Bangladesh mainly- insufficient information, unavailability of funding from government and non-government organizations, lack of transparency in getting admission in training programs, reluctant training center, financial insolvency, unwillingness of family etc.

Bangladesh government is giving emphasize and taking initiatives in this regard patronizing different organs and institutes like- Ministry of Expatriates' Welfare and Overseas Employment, BMET, Bureau of Manpower, Employment and Training (BMET), Bangladesh overseas Employment and Services (BOESL), and also many agencies for getting the workers prepared before leaving the country to compete with the migrant workers of other countries in the global labor market. If these large pool of population of Bangladesh can be turned into human resources by providing required training on language, different works, technology, devices, equipment they can be the assets for the country. And exporting this manpower a large volume of remittance earning is possible which will contribute greatly in the economy of the country.

2.1.2 Scenario of Bangladeshi Migrants in the Global Labor Market

Most of the migrants from Bangladesh are working mainly in the countries of Middle-East like- KSA, UAE, Qatar, Kuwait, Oman, Bahrain, Lebanon, Jordan, Libya and many of them are in some Asian countries like- South Korea, Hong Kong, Japan, Malaysia, Singapore, and even in Pakistan, China and India. Besides, a number of employees have been serving in different sectors in the different parts of the world. They are also available in the countries of UK, USA, Italy, Brazil, Egypt, Brunei, Mauritius, Iraq, Sudan, South Africa, Canada, Cyprus etc.

The countries where Bangladeshi migrants have been working mainly are shown within the red circle in the global map below:

Figure: The countries where most of the Bangladeshi migrants working in.

2.1.3 Migrant scenario country-wise

Overseas employment started in Bangladesh from 1976. On the very first year, 6087 male workers went to mainly the Middle East countries. The female was following them from 1991 with 2189 as migrant workers.

Table 1 shows statistics for overseas employment of Bangladesh from 2010 to February, 2023 are shown in detailed. Here it is seen that in total 3, 90,702 migrant workers are working in different countries of the world in 2010.Then almost every year the volume of overseas employment in the last decade (specially, from 2011 to 2019) had been increased tremendously. But in 2020 due to COVID-19 the number was decreased comparing to the previous years which was 2, 17,669. Again in 2021, it became 6, 17,209 and in 2022 breaking all the past records it reached to 11, 35,873. In 2023 Bangladesh has already exported a significant number of manpower for overseas employment which is 213572 up to February, 2023. Total migrant workers from Bangladesh are 14,983,606 among which male are 1, 38, 61,913 and female are 11, 21,693. KSA is the biggest labor market of Bangladesh where 53,66,279 workers which is 35.81% of the total number have gone for work .

Table 1: Overseas Employment of Bangladesh Up to February, 2023

Country	Year										Total	Total from 1976 to 2023	%
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023			
KSA	10657	58270	143913	551308	257317	399000	161726	457227	612418	85319	2737155	5366279	35.81
UAE	24232	25217	8131	4135	3235	3318	1082	29202	101715	14575	214842	2518179	16.81
Kuwait	3094	17472	39188	49604	27637	12299	1744	1848	20422	4851	178159	657995	4.39
Oman	105748	129859	188247	89074	72504	72654	21071	55009	179612	31925	945703	1788487	11.94
Qatar	87575	123965	120382	82012	76560	50292	3608	11158	24447	4202	584201	850505	5.68
Bahrain	23378	20720	72167	19318	811	133	3	11	10	1	136552	410485	2.74
Lebanon	16640	19113	15095	8327	5991	4863	488	235	858	283	71893	268950	1.79
Jordan	20338	22093	23017	20449	9724	20347	3769	13816	12231	647	146431	211026	1.41
Libya	4461	231	0	1	63	213	93	3	172	3	5240	122673	0.82
Sudan	86	350	739	1761	824	1	2	39	373	139	4314	12345	0.08
Malaysia	5134	30483	40126	99787	175927	545	125	28	50090	54314	456559	1161631	7.75
Singapore	54750	55523	54730	40401	41393	49829	10085	27875	64383	6961	405930	892061	5.95
South Korea	1748	2359	1980	1829	2287	1647	208	108	5910	904	18980	48682	0.32
UK	16	4	11	7	8	11	21	123	942	413	1556	11606	0.08
Italy	856	44	3	1	0	2	0	653	7594	1276	10429	65043	0.43
Japan	55	99	165	145	163	229	142	3	508	140	1649	2880	0.02
Egypt	266	601	758	30	48	1	0	0	35	0	1739	23119	0.15
Brunei	6633	6354	5836	8587	4480	3628	530	12	1850	742	38652	78027	0.52
Mauritius	5938	4753	4679	5942	6608	7576	2014	215	5484	677	43886	77866	0.52
Iraq	13627	13982	4738	3819	19567	9266	0	5	64	34	65102	75851	0.51
Others	28762	19638	23236	9731	15790	10619	4457	7711	24196	6166	150306	297180	1.98
Misc. Clearance	11690	4697	10590	12302	13244	53686	6501	11928	22499	0	147137	242035	1.62
Grand Total	425684	555827	757731	1008570	734181	700159	217669	617209	1135813	213572	6,366,415	14,983,606	100
Male	349677	452109	639643	886645	632486	595373	195735	537066	1030347	197801	5,516,882	13,861,913	92.51
Female	76007	103718	118088	121925	101695	104786	21934	80143	105466	15771	849,533	Total from 1991 to February, 2023 = 11,21,693	7.49

2.2 Industry 4.0

The phrase Industry 4.0 (i4.0), established by the German government in 2011, is identical with the Fourth Industrial Revolution (Kagermann et al., 2011). i4.0 refers to cyber-physical systems (CPS) and smart technologies that can integrate machines, shop floors, and corporate operations, as well as customers, end users, and the entire supply chain. Smart technologies and CPS, with the assistance of artificial intelligence (AI) software, enable processes and

machines to communicate information autonomously over the Internet of Things (IoT), activate actions, make decisions, and control each other independently (Kagermann et al., 2013).

These modern technologies are frequently referred to as "cyber" or "smart," whereas CPS refers to complex systems that integrate computation, communication, and physical processes (Wang & Wang, 2016). The'smart factory,' which incorporates the integration of i4.0 technologies in manufacturing factory operations, is at the heart of i4.0 (Chen et al., 2017; Hozdi c, 2015; Shi et al., 2020). i4.0 can be defined as a business model based on the horizontal integration of CPS and smart technologies, the vertical integration of big data acquired from the shop floor and supply chain and the end-to-end integration across the whole product life cycle (Chiarini et al., 2020).

The Industrial Internet of Things (IIoT), the cloud, automated mobile robots (AMR), autonomous guided vehicles (AGV), collaborative robots (cobots), analytics and AI, simulation, smart sensors and products, radio-frequency identification (RFID), additive manufacturing, and augmented reality are examples of i4.0 technologies commonly used in the manufacturing sector (Dalenogare et al., 2018; Hermann et al., 2016; Indri et al., 2019; Kostrzewski et al., 2020).

Industry 4.0 is creating a requisite for the revolution of traditional business models into digital business models, as well as the need to connect various technologies and robots, all of which enables mass customization in manufacturing (Crnjac et al., 2017; Flynn 2017). In general, Industry 4.0 is presented as the application of cyber-physical systems within industrial production systems (Posada et al, 2015). Industry 4.0 has a huge influence on manufacturing, due to its focus on creating a smart environment (Mabkhot et al., 2018). The use of technologies in production organizations changes the organization of work and has a significant impact on job qualifications. Industry 4.0 therefore brings and will continue bringing, variations in production, technology and organization and competencies, as well as job profile changes (Morlock et al., 2016). Industry 4.0 has enormous potential and will give a slew of economic and social prospects as a result of a paradigm shift in labor structure, business strategies, and manufacturing technologies (Kagermann, 2013). Everything in the production environment is integrated in the Industry 4.0 framework, autonomously exchanging information, activating actions, and regulating each of them independently, allowing the construction of smarter processes (Weyer et al., 2015). It enables all physical processes and information flows to be available when and where they are required across all

manufacturing supply chains, numerous industries, small and medium-sized enterprises (SMEs), and major corporations (Wang et al., 2016) Artificial Intelligence (AI).

Artificial Intelligence refers to a type of algorithm or computerized system that resemble a human intellectual process such as the ability to uncover the meaning, reason, and learn from past experiences (Castelvecchi, 2016). Scientists introduced artificial intelligence robots to the world during the first half of the twentieth century. Artificial intelligence has made processes, day to day activities more effective and efficiently such as business processes, social interactions, etc. It has formed the basis and the future of the decision-making process. The importance of Artificial intelligence cannot be overemphasized as it has become the central point for digital transformation in the world as it has been very beneficial to major sectors such as health care, transportation system, business process, e-commerce, logistics, and inventory. Artificial intelligence has also played a vital role in cost reduction for many organizations and even the public sector. Relating to our everyday life, AI has helped in optimizing products, and cybersecurity to help recognize and fight cyber threats. With the recent COVID-19 pandemic, artificial intelligence assisted in the process of curbing the virus such as thermal checking for symptoms at the airport and data to track the spread of the disease.

2.3 Theoretical Underpinning

TAM theory is extensively employed in research contexts and for various technological applications (Lee, Kim and Trimi, 2006; Yarbrough and Smith, 2007). The Technology Acceptability Model (TAM) describes the factors of technology acceptability that are transferable across user populations and technologies. Multiple contexts and research designs have validated the TAM model's validity (Ma and Liu, 2004; King and He, 2006). The Technology Acceptance Model (TAM) measures the perceived usefulness (PU) and perceived ease of use (PEU) factors that influence user acceptance of any technology. PU describes how much an individual believes a particular system will improve task performance. PEU is the extent to which a person believes that using a particular system requires no physical or mental effort (Davis, Bagozzi and Warshaw, 1989; Davis, 1993). The TAM suggests that attitude, perceived usefulness, and perceived ease of use directly influence the intention to embrace technology. According to the Technology Acceptance Model (TAM), an individual's intention to use technology influences their actual use of the application, and attitudes toward technology influence the intention (Davis, Bagozzi and Warshaw, 1989; Davis and Venkatesh, 2004; Venkatesh, Thong and Xu, 2012).

In this study, the TAM theory will be used to structure the research process and contribute to a better comprehension of the acceptance and utilization of technology in the manufacturing and service industries where Bangladeshi migrant workers are employed. Perceived usefulness is evaluated through the content and benefits of the technologies on the organization's business processes and the system's implementation. The functionality of the application described the perceived usability of the system. Adaptability toward technology consists of motivation to use different portable devices, satisfaction with technologies, and experience of the benefits of technologies.

2.4 Conceptual Framework
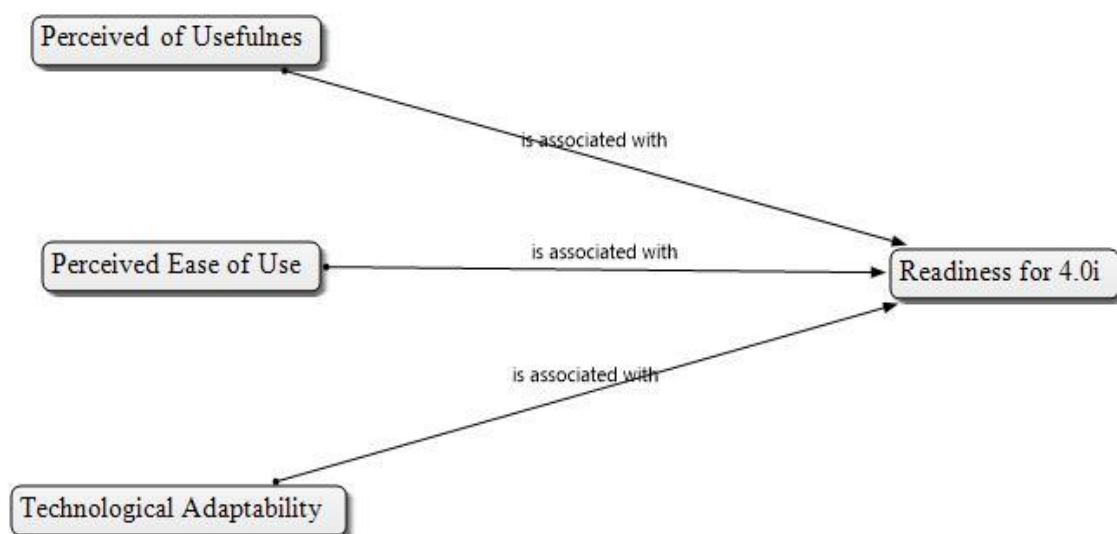
Figure 1: Conceptual Framework

2.5 Research Questions Related to Research Objective 2

Research objective 2 was the preparedness/readiness of current migrant workers in the light of global demand, 4IR and artificial intelligence. This study adopted the variables from Technology Acceptance Model and thus will look for the following research questions.

RQ 1: Does workers' perceived of usefulness have a positive relationship with the readiness for 4IR?

RQ 2: Does workers' perceived of ease of use have a positive relationship with the readiness for 4IR?

RQ 3: Does workers' technological adaptability have a positive relationship with the readiness for 4IR?

2.6 Research Hypothesis

H1: Workers' perceived of usefulness have a positive relationship with the readiness for 4IR

H2. Workers' perceived of usefulness have a positive relationship with the readiness for 4IR

H3. Workers' perceived of usefulness have a positive relationship with the readiness for 4IR

This study further carried test the above hypothesis aligned with the research objective two in case of assessing the readiness of the current migrant workers considering 4IR.

3.0 Methodology

3.1 Nature of the Research, Measurement, and Scaling

Descriptive cross-sectional research was conducted using survey methodologies to quantitatively examine the first research objective. Appendix 1 depicts the items that will be used to measure in this study. The worker readiness for the 4.0i scale, which includes a general statement regarding the components of 4.0i, has been assessed using a 6-item scale. Participants were given a five-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree") to rate their responses. Further, the perceived of usefulness (7-item), the perceived of ease of use (2-item), and the technological adaptability (5-item) derived from (Gupta, Singh and Gupta, 2021). A five-point Likert-type scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree) will be utilized for this study. The items will be consolidated from previous research and modified to meet the needs of this study.

3.2 Nature of Questionnaire

The quantitative analysis questionnaire for a structured survey was consisted of many sections. The first section was a series of structured questions designed to collect demographic information about migrant workers. The second section were comprise of Likert scale items to assess the variable components. The questionnaire items were prepared in the Bangla language so that responders may properly understand them. The questionnaire items are included in Appendix 1.

3.3 Population and Sample

The target population for this study includes Bangladeshi male and female workers working in manufacturing and service organizations from several countries around the world. Bangladeshi workers work in various positions across many firms engaged in production and services were included as a unit of analysis. Purposive sampling were used to conduct the study.

3.4 Sample Size

For determining sample size researchers also suggested different ideas such as, (Bougie and Sekaran, 2019), proposed that in order to estimate the lowest possible, for multivariate analysis, is 10 times the number of variables in the study. Accordingly, the lowest sample size of this research is 200 (20 x 10). (Siu Loon Hoe, 2008) also advocates considering a sample size of 200 or more; is sufficient for data analysis. Again, (F. Hair Jr et al., 2014) endorsed that the least expected sample size for PLS-SEM must be equal to or greater than 10 times of structural path in the model. Furthermore, (F. Hair Jr et al., 2014) revealed that for

SEM-PLS 100 sample is sufficient for data analysis. In the context of Bangladesh (Rubel and Kee, 2015) considered 129 sample sizes for data analysis and find suitable results. Thus, based on the previous literature support the current study found 110 usable samples for effective data analysis. The support for this research comes from the previous literature. The initial distribution of 250 questionnaires yielded a response rate of 41.8%, with 140 returned questionnaires and 50 participants eliminated due to not meeting requirements, leaving 110 participants accepted with an acceptable response rate of 44%, given that (Rubel, Hung Kee and Rimi, 2020) found a response rate of 29% in the RMG industry.

3.5 Data Collection Method

Data were collected from a variety of primary and secondary sources. The researcher was involved in gathering primary data through in-depth interviews and structured surveys, while secondary data were obtained through a review of topic-related pieces of literature, such as newspapers, websites, books, and journals.

Table 2: Data Collection Model

Types of Data	Specific Source	Instrument	Application
Primary Data	Interview	KII checklist Questionnaire	Analysis & Findings
	Survey	Questionnaire (Structured)	
Secondary Data	Paper-based sources	Books, journals, directories, research reports, conference papers, internal records of organizations, newspapers, and magazines	Literature Review & Instrument Development
	Electronic sources	On-line databases, Internet	Literature Review & Instrument Development

3.7 Research Design

It is planned to design the questionnaire with the use of 5-point Liker Scale, which enabled to collect data based on the level of agreement or disagreement of the respondents in statements given in the questionnaire. Face to face interviews are done.
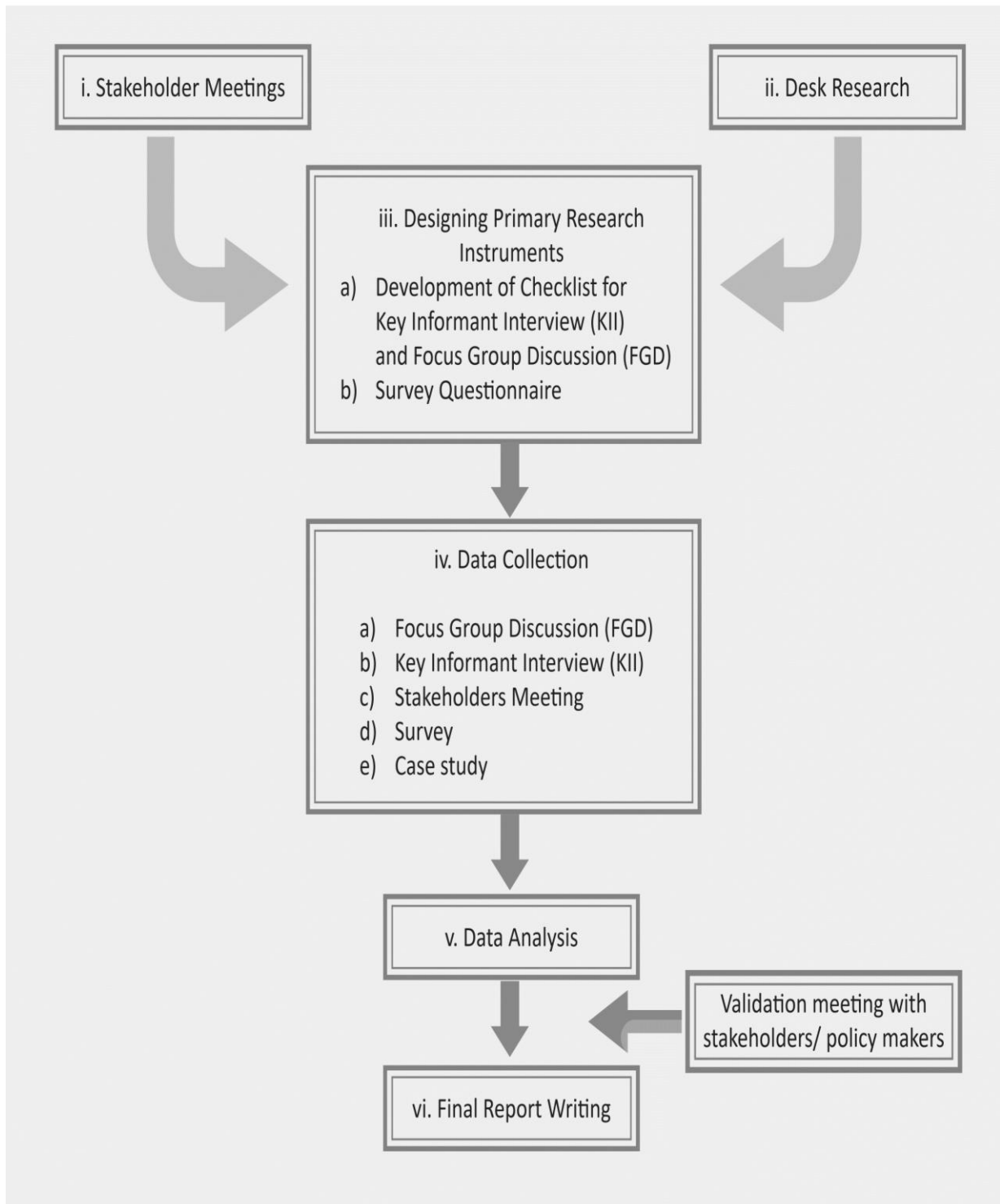
Figure 2: Research Design

3.8 Data Collection

Table 3: Data Collection Model

Types of Data	Specific Source	Instrument	Application
Primary Data	Interview	Focus Group Discussion KII check list Questionnaire	Analysis & findings
	Survey	Questionnaire (Structured)	
Secondary Data	Paper based sources	books, journals, directories, research reports, conference papers, internal records of organizations, newspapers and magazines	Literature Review & Instrument development
	Electronic sources	on-line databases, Internet	Literature Review & Instrument development

3.9 Data Analysis

Quantitative data analysis are carry forward with reliability test, descriptive statistics, cross tabulation and multiple regression analysis for interpreting survey outcome.

In the current study, statistical methods and tools, such as Statistical Package for the Social Sciences (SPSS) and Smart-PLS 3.0 have been utilized. SPSS version 23 will be used for data entry, and descriptive and demographic statistics of the respondents. Smart-PLS 3.0 has been used for calculating the reliability and validity of the instrument. In addition, multiple regression analysis has been utilized to measure the research variables and their relationship.

Multiple Regression model

Y= A+ B(x1) + B(x2) + B(x3) + B(x4) +…..........................+ B (xn)

Here, *Y= Dependent variables (adoption of updated skill)*
A= Y intersect;
B= Slope of the equation
Xn = Independent variables

Qualitative study such as thematic analysis are also applied for evaluating qualitative data such as findings from KIIs and FGD.

4.0 Findings and Analysis

4.1 Demographic Profile of the respondents

Table 4: Locations of Respondents

District	Frequency	Percent	District	Frequency	Percent
Meherpur	22	20.0	Sherpur	1	.9
Chuadanga	57	51.8	Sirajganj	1	.9
Cumilla	4	3.6	Chadpur	2	1.8
Tangail	4	3.6	Madaripur	1	.9
Jhinaidah	1	.9	Munshiganj	2	1.8
Dhaka	5	4.5	Shariatpur	2	1.8
Magura	1	.9	Gazipur	1	.9
Bhramanbaria	1	.9	Rajbari	1	.9
Netrokona	1	.9	Kushtia	1	.9
Rajshahi	1	.9	**Total**	**110**	**100.0**
Noakhali	1	.9			

More than half of the respondents belong to the Chuadanga district. It comprises about 52%. In addition, around 20% of the skilled workers are from the Meherpur district. The economy of Chuadanga is primarily based on agriculture, which may need to provide more job opportunities for locals. As a result, many people from this district seek work abroad to earn higher economic benefits.

Table 5: Gender distribution of respondents

	Frequency	Percent
Male	105	95.5
Female	5	4.5
Total	110	100.0

Among the survey respondents, the male respondent is around 95.5% whereas female participants consist of 4.5%. It refers that most of the skilled workers from our country consist of male people.

Table 6: Age of the respondents

	Frequency	Percent
Less than 25	13	11.8
26-35	55	50.0
36-45	35	31.8
46-55	6	5.5
56 and above	1	.9
Total	110	100.0

Among the participants of skill workers, around 50% of the respondents belong to 26 years old to 35 years old. That means most of the skilled workers belong to the adult age where

they are entering the job market, and they have lots of scope for their skill development. In addition, another major portion is belonging to 36 to 45 years old which consists of around 32%. From this viewpoint, it can be stated that more than 80% of the skilled workers belong to the young and adult age how are they have much more productivity than other age classes.

Table 7: Academic qualification of the respondents

	Frequency	Percent
Primary	14	12.7
Secondary	41	37.3
Higher Secondary	29	26.4
Diploma	2	1.8
Bachelor	19	17.3
Masters	5	4.5
Total	110	100.0

In Bangladesh, most skilled workers have the highest level of academic qualification up to secondary school, which comprised around 37% of the respondents. Another significant portion is having higher secondary in some cases, which comprise around 26% of respondents. That means the skilled workers do not have that much bachelor's or master's level education for their abroad jobs.

Table 8: Category-wise respondent's working experience in Bangladesh

	Frequency	Percent
Home maid	5	4.5
Agriculture	30	27.3
Business	10	9.1
Construction work	8	7.3
Textile work/Garment work	4	3.6
Driving	6	5.5
Mechanical work	1	.9
Regular Job	6	5.5
Drawing and Painting	1	.9
Electrician	2	1.8

IT related work	2	1.8
Research	1	.9
No experience	34	30.9
Total	110	100.0

Bangladesh mainly focuses on the agricultural economy, even though the trend is now changing toward the service and manufacturing sectors. Around 27% of the skilled workers have agricultural work experience, as most people belong to Bangladesh's coastal and rural areas. Another significant portion goes to business working experience as sole proprietorship business establishment is much easier here. But interestingly, 31% of respondents have no prior work experience in Bangladesh.

Table 9: Total working experience in Bangladesh (years)

	Frequency	**Percent**
Lowest thru 5	37	33.6
6-10	34	30.9
11-15	5	4.5
16 and above	34	30.9
Total	110	100.0

Around 34% of the migrant skilled workers have mostly less than five years of job tenure in Bangladesh. Some other primary skill workers have around 6 to 10 or more than 16 years of job tenure. People prefer to be migrated as young to earn better abroad, so they only have a few working years in Bangladesh.

Table 10: Type of training received in Bangladesh

	Frequency	Percent
Language	20	18.2
Pipe Fitting	2	1.8
Construction	4	3.6
Driving	6	5.5
Welding	1	.9
Factory work	1	.9
Satellite TV	1	.9
No training received	75	68.2
Total	110	100.0

Around 68% of the skilled workers still need to get training from Bangladesh to go abroad. Some 18% of the skilled workers have only language training. That means migrant workers only focus on learning the language, which is the native language where they have gone.

Table 11: Total working experience abroad (years)

	Frequency	Percent
Lowest thru 3	45	40.9
4 to 6	29	26.4
7 to 9	18	16.4
10 and above	18	16.4
Total	110	100.0

It is not easy to continue a job abroad for many years. Around 41% of the migrant workers come to Bangladesh after working less than three years abroad. 26% of the skilled workers try to take 4 to 6 years of experience abroad. It is challenging to cope with foreign rules, regulations, and environments for Bangladeshi people.

Table 12: Type of training received abroad

	Frequency	Percent
Driving	2	1.8
Chemical	2	1.8
Construction	3	2.7
Waiter	1	.9
Pipe Fitting	1	.9
IT	2	1.8
Shop worker	1	.9
Regular Job	2	1.8
No training received	96	87.3
Total	110	100.0

Most migrant workers take training in construction abroad, which is a very cheap labor job and does not require that much training. In this case, 87% of the migrant workers from Bangladesh abroad do not have any training experience. Only 2.7% of the skilled workers take construction training to get accustomed to the environment or better job opportunities in that sector.

Table 13: Name of the country workers worked

	Frequency	Percent
Saudi Arabia	21	19.1
UAE	6	5.5
Japan	8	7.3
Singapore	8	7.3

Malaysia	13	11.8
Maldives	1	.9
Greece	1	.9
South Africa	1	.9
Oman	8	7.3
USA	4	3.6
South Korea	4	3.6
Kuwait	9	8.2
Bahrain	8	7.3
Dubai	4	3.6
Canada	5	4.5
Poland	1	.9
Australia	1	.9
Italy	1	.9
Lebanon	2	1.8
Algeria	1	.9
Germany	1	.9
England	1	.9
Qatar	1	.9
Total	110	100.0

Most migrant skilled workers go to Middle East countries and other Asian countries. Around 19% of the skilled workers go to Saudi Arabia, and 5% go to UAE. From an Asian perspective, skilled workers mostly go to Japan, Singapore, and Malaysia. Those countries are undergoing significant development and have a high demand for skilled labor to support their infrastructure and construction projects.

Table 14: Type of work performed abroad

	Frequency	Percent
Household work	3	2.7
Agriculture	7	6.4
Business	5	4.5
Super Shop	3	2.7
Driving	13	11.8
Construction	40	36.4
Shop worker	2	1.8
Farming	1	.9
Waiter	3	2.7
Shop Manager	5	4.5
Shipping	1	.9
Factory Work	9	8.2
Pipe Fitting	1	.9
Restaurant	3	2.7
Welding	2	1.8
Garage Mechanic	1	.9
Electrician	2	1.8

	Frequency	Percent
Quality Controller	1	.9
Restaurant Manager	2	1.8
Network Admin	1	.9
Analyst	1	.9
Regular Job	2	1.8
Chef	1	.9
IT	1	.9
Total	110	100.0

Skilled migrants from Bangladesh mostly do construction work, around 37%. There are also an additional 12% of skilled professionals who are employed in driving employment.

Table 15: Monthly income of the respondents

	Frequency	Percent
Lowest thru BDT 50,000	37	33.6
BDT 50,001 - BDT 100,000	51	46.4
BDT 100,001 - BDT 150,000	4	3.6
BDT 150,001 - BDT 200,000	4	3.6
BDT 200,001 - BDT 250,000	1	.9
BDT 250,001 - BDT 300,000	5	4.5
Highest thru BDT 300,000	8	7.3
Total	110	100.0

Around 46% of the migrant skilled workers get a salary ranging from BDT 50,001 to BDT 100,000. In addition, 85% of the skilled workers get a salary below BDT 100,000, and such a concern might be needing more training and more capability to have more working experience. Only 7% of respondents get more than BDT 300,000 as a salary.

Table 16: Type of assistance received from the government institution in Bangladesh

	Frequency	Percent
Financial help	17	15.5
Not received	93	84.5
Total	110	100.0

Around 85% of the migrant skilled workers do not have any financial assistance from Government institutions in Bangladesh. This may be because these people need to learn about this assistantship.

Table 17: Type of assistance received from the non-government institution in Bangladesh

	Frequency	Percent
Financial help	44	40.0
Not received	66	60.0
Total	110	100.0

Only 40% of the migrant skilled workers have financial assistance from non-government institution in Bangladesh. This rate is higher than that of Government assistantships. The reason is that primarily different types of financial assistance from friends, family members, and other NGO schemes are popular in rural and coastal areas where most people go abroad.

Table 18: Type of cell phone

	Frequency	Percent
Conventional	2	1.8
Smartphone	108	98.2
Total	110	100.0

Almost 98% of skilled workers use smartphones because smartphones are more convenient and have more features than conventional phones.

4.2 Migrant scenario occupation-wise

A number of migrant workers of Bangladesh have been working in different parts of the world and contribute to a great extent in the economy of Bangladesh. Unfortunately, most of them are working in low skilled occupations and as a result ill-paid comparing to the migrants workers from other countries even of the neighboring countries like India, Nepal and Pakistan. A greater portion of the Bangladeshi migrants are working as labors for construction work, drivers, maids and housekeeping cleaners, dining room and cafeteria attendance, production workers, cook, farmworkers, retail sales persons, waiter and waitress in the hotel and restaurants, electricians, cleaners and helpers as well as plasterers and these types of low paid and low skilled occupations they do because some 47% of migrant workers of Bangladesh are considered unskilled or less skilled, according to official data. It is found in the survey conducted for this research work that the migrants from Bangladesh are not well prepared to compete with those of other countries in the global labor market. They don't have required work training, language training, technological knowledge, information regarding activities. To fetch the challenges in the changes global demand, 4IR and artificial intelligence no alternative of technological knowledge. So, Emphasize should be given on providing required training on language, different works, technology, devices, and equipment for survival.

The following technological skills are more or less required for all the occupations or type or workers:

- Data base user interface and query software
- Electronic mail software
- Internet browser software
- Office suite software

- Spreadsheet software
- Word processing software

However, the other technological skills along with the detailed work activities are listed below:

SL. No.	Type of workers	Detailed Work Activities	Technological Skills required
1.	**Construction Workers**	Physical labor is important for the construction workers to operate and maintain hand and power tools, earth tampers, air hammers, cement mixers, surveying and measuring equipment, and other instruments. Clean equipment or facilities, direct vehicle traffic, position structural components, dig holes or trenches, install plumbing or piping clean work sites, protect structures or surfaces near work areas to avoid damage, finish concrete surfaces, measure work site dimensions, Remove worn, damaged or outdated materials from work areas and may help other craft workers	Computer aided design CAD software

Operating system software
Project management software |
| SL. No. | Type of workers | Detailed Work Activities | Technological Skills required |
| 2. | **Taxi Drivers** | Drive vehicles to transport passengers on a charge a fare usually based on a meter; clean, inspect and maintain vehicles and their components. Keep vehicles in suitable working condition ;follow safety procedures for vehicle operation; receive information or instructions for performing work assignments; help passengers for boarding and calculate cost on goods and services. | Mobile location based services software

Operating system software

Web page creation and editing software |
| 3. | **Restaurant Workers** | Perform tasks involving physical labor at restaurants; present food and beverage menus; manage customers with seating arrangements; communicate with customers for resolving complaints and ensure satisfaction; operate cash registers and process customer bills or payments; take customers' order , package and deliver; Communicate to cooks and kitchen personnel; Inspect equipment, facilities or supplies to ensure standards; help chefs or caterers in preparation of food or drink. | Calendar and scheduling software
Data base user interface and query software

Operating system software
Point of sale POS software

Web page creation and editing software — Facebook |
| 4. | **Electricians** | Test and repair electrical equipment or systems to ensure proper functioning; thread cable or wire through conduits; create installation diagrams ; dig holes or trenches and install electrical components, equipment, or systems; Train ,communicate and direct construction or extraction personnel; fabricate parts and components; estimate construction project costs ; plan layout of installation, construction, and repairs; inspect electrical systems for defects. | Analytical or scientific software
Computer aided design CAD software
Document management software
Electronic mail software
Enterprise resource planning ERP
Industrial control software
Operating system software
Process mapping and design software
Project management software |
| 5. | **Retail Sales Persons** | Recommend products or services to customers ; Gather product information to determine customer needs; Greet customers, patrons, or visitors ; Calculate costs of goods or services; Process sales or other transactions ; Answer customer questions about goods or services; Monitor inventories of products or | Accounting software
Cloud-based data access and sharing software
Design CAD software
Customer relationship management CRM
Desktop publishing software |

SL. No.	Type of workers	Detailed Work Activities	Technological Skills required
		materials; Maintain records of sales or other business transactions; Purchase stocks of merchandise or supplies.	Development environment software Document management software Enterprise resource planning ERP Graphics or photo imaging software Human resources software Operating system software Point of sale POS software PowerPoint Video conferencing software Video creation and editing software Web page creation and editing software sites.
6.	**Farmworkers**	Prepare materials or solutions for animal; Care for animals; Treat animal injuries or illnesses ; Mark agricultural or forestry products for identification; Operate and maintain farming equipment ; Perform animal breeding procedures ; Examine animals to detect illness, injury or other problems and Classify organisms based on their characteristics	
SL. No.	**Type of workers**	**Detailed Work Activities**	**Technological Skills required**
7	**Dining Room and Cafeteria Attendants**	Collect dirty dishes or other tableware; Clean food service areas; Assist customers to ensure comfort or safety; Arrange tables or dining areas ; Maintain food, beverage and equipment inventories. Move equipment, supplies and food to required locations.; Store supplies or goods in kitchens or storage; Greet customers, and visitors; Clean facilities or work areas	Operating system software Point of sale POS software — Cafe Cartel Systems; Plexis Software Plexis POS; Restaurant Plus PRO Web page creation and editing software
8.	**Hotel, Motel, and Resort Desk Clerks**	Greet customers and visitors; Report equipment and maintenance problems to Authority; Distribute materials to employees or customers; Make accommodations, travel, and entertainment arrangements for others; Verify accuracy of financial or transactional data; Refer customers to appropriate personnel; Maintain financial or account records; Operate communications equipment or systems; Execute sales or other financial transactions mainly.	Desktop publishing software Electronic mail software Facilities management software Financial analysis software Instant messaging software Presentation software Web page creation and editing software
9.	**Maids and Housekeeping Cleaners**	Clean equipment, supplies, furniture building walls or flooring, facilities and sites; Move materials, equipment or supplies ; Dispose of trash or waste materials ; Inventory materials or equipment; Operate garment treatment equipment ; Sort materials or products ; Decorate indoor or outdoor spaces etc.	Desktop communications software Facilities management software Instant messaging software Inventory management software Materials requirements planning logistics and supply chain software Operating system software Web page creation and editing software

No.		Job tasks	Software
10.	**Production workers**	Operate industrial equipment Load materials into production equipment; Remove products or workpieces from production equipment; Inspect work to ensure standards are met; Weigh finished products; Sort materials or products for processing, storing, shipping, or grading ; Mix substances to create chemical solutions ; Watch operating equipment to detect malfunctions ; Package products for storage or shipment ; Move products, materials, or equipment; Signal others to coordinate work activities ; Prepare materials for processing and Lift materials or workpieces using cranes or other lifting equipment.	Computer aided design CAD software Desktop publishing software Document management software Enterprise resource planning ERP software Graphics or photo imaging software Presentation software
11.	**Office clerk and General**	Operate equipment of the office ; Answer telephones to direct calls or provide information; Respond to customer problems or complaints Collect deposits, payments and fees; Send information, documentation and materials ; Maintain inventory records ; Search files, databases or reference materials to obtain needed information ; File documents or records; Sort mail and prepare documentation for contracts, transactions, or regulatory compliance; Record information from meetings or other formal proceedings; Monitor inventories of products or materials; Compile data or documentation; Provide information to coworkers; Train personnel; Maintain office equipment in proper operating condition.	Accounting software Calendar and scheduling software Cloud-based data access and sharing Customer relationship management CRM Desktop publishing software Document management software Enterprise application integration software Enterprise resource planning ERP Graphics or photo imaging software Human resources software Information retrieval or search software Instant messaging software Medical software Operating system software Presentation software Project management software Web page creation and editing software

4.3 Reliability and Validity

In this study, we determine the validity and reliability of the scales by confirmatory factor analysis. Composite reliability (CR) and convergent validity through item loadings and the test of average variance extracted (AVE) were used to assess the reliability of the instruments. The value for each of the item loadings should be greater than (>) 0.70, the average item reliability (AVE) should be greater than (>) 0.50, and the correlation reliability (CR) should be greater than (>) 0.70, according to the parameter of (Henseler and Chin, 2010). The following Table shows that all items have a greater score than the needed value and thus fulfill the requirement according to the recommendations of (Hair *et al.*, 2019; Henseler and Chin, 2010). Furthermore, the composite reliability (CR) of the undetected variables was greater than the cut-off value (CR > 0.70). Hence, the results meet the criteria of convergent validity and composite reliability.

Reliability and Validity

Constructs	Item Code	Item Loadings	AVE	CR	Cronbach Alpha
Perceived of usefulness	PU1	0.892	0.768	0.954	0.940
	PU2	0.836			

	PU3	0.907			
	PU4	0.898			
	PU5	0.883			
	PU6	0.854			
	PU7	0.837			
Perceived of ease of use	PEU1	0.823	0.751	0.938	0.916
	PEU2	0.867			
Technological adaptability	TA1	0.765	0.793	0.924	0.932
	TA2	0.873			
	TA3	0.926			
	TA4	0.767			
	TA5	0.925			
Readiness for 4.0i	R1	0.865	0.682	0.885	0.828
	R2	0.788			
	R3	0.831			
	R4	0.738			
	R5	0.824			
	R6	0.781			

4.4 Findings based on the assessment of skilled workers' readiness to Industry 4.0

Respondents' perceived usefulness is the degree to which a worker believes using a particular system will enhance task performance. Table 16 shows that 100% of workers agreed that skill and language training is crucial in enhancing efficiency in doing their job. Almost 72% mentioned that skill development training makes them fit for the job. Moreover, 71% perceived that information technology knowledge can help them perform work activities, 66% stated that information technology could save their work time, along with 56% stated that information technology improves their work performance.

Workers' perceived ease of use is the degree to which a worker believes that using a particular system is free of physical and mental effort. Table 16 shows that 84% of respondents feel confident and flexible about learning technology, while almost 62% mentioned that learning to operate technology will be easy. On the other hand, 13% of respondents feel that learning to operate technology will be difficult.

Respondents' intention to use technology or technological adaptation determines the actual use of the application, and attitudes toward technology affect the intention. Based on table 16, almost 72% agreed to become skillful at using industry-related technologies, 75% agreed that they feel comfortable building competency for adopting or implementing new digital

technology, and 89% agreed that they feel confident getting the proper training in functional skill development. On the other hand, 16% of respondents are unaware of technological innovations in the industry, and 36% cannot gain the skills necessary to transform manual data into digital data.

The awareness of industry 4.0 among the respondents is measured by familiarity with six essential elements of industry 4.0. based on table 16, only 30% of respondents know the concept of Big Data Analytics, almost 55% are familiar with the Internet of Things (IoT), and 53% are familiar with Cloud Computing. On the other hand, almost 43% of respondents are unfamiliar with Autonomous Robot, 27% do not know the concept of Augmented Reality, and almost 26% remained neutral about Additive Manufacturing.

Table 19: Assessment of workers' readiness

Construct	Items	Strongly Agree		Agree		Neither agree nor disagree		Disagree		Strongly Disagree	
Perceived of Usefulness	Skill training is very vital to working abroad	102	92.7%	8	7.3%	0	0.0%	0	0.0%	0	0.0%
	Language training is required to work abroad	87	79.1%	23	20.9%	0	0.0%	0	0.0%	0	0.0%
	Skill development training will enable me to get the job done effectively	79	71.8%	29	26.4%	2	1.8%	0	0.0%	0	0.0%
	Training in information technology is useful for performing work activities	78	70.9%	29	26.4%	3	2.7%	0	0.0%	0	0.0%
	Information technology will save time to do my work	72	65.5%	35	31.8%	2	1.8%	1	0.9%	0	0.0%
	Using technology would improve my work performance	61	55.5%	46	41.8%	3	2.7%	0	0.0%	0	0.0%
	Information technology can assist to achieve economic benefits	47	42.7%	59	53.6%	4	3.6%	0	0.0%	0	0.0%
Perceived of Ease of Use	I feel very confident and flexible to learn technology	30	27.3%	62	56.4%	11	10.0%	6	5.5%	1	0.9%
	Learning to operate technology will be easy for me	22	20.0%	46	41.8%	27	24.5%	14	12.7%	1	0.9%
Technological Adaptability	It would be very convenient for me to become skillful at using technologies related to Industry	22	20.0%	57	51.8%	18	16.4%	12	10.9%	1	0.9%
	I feel comfortable building competency for adopting or implementing new digital technology	16	14.5%	66	60.0%	18	16.4%	9	8.2%	1	0.9%
	I feel confident getting the right training in functional skill development	23	20.9%	75	68.2%	7	6.4%	5	4.5%	0	0.0%
	I have awareness of technological innovations in the industry	14	12.7%	49	44.5%	29	26.4%	18	16.4%	0	0.0%
	I have the ability to gain the skills necessary to transform manual data into digital data	6	5.5%	36	32.7%	26	23.6%	40	36.4%	2	1.8%

Construct	Items	Strongly Agree		Agree		Neither agree nor disagree		Disagree		Strongly Disagree	
Awareness for 4.0i	The concept of Big Data Analytics is clear to me	9	8.2%	23	20.9%	11	10.0%	54	49.1%	13	11.8%
	The concept of the Internet of Things (IoT) is familiar to me	11	10.0%	49	44.5%	13	11.8%	27	24.5%	10	9.1%
	I am familiar with the concept of Autonomous Robot	9	8.2%	46	41.8%	8	7.3%	42	38.2%	5	4.5%
	The concept of Cloud Computing is clear to me	10	9.1%	48	43.6%	7	6.4%	35	31.8%	10	9.1%
	I am familiar with the concept of Augmented Reality	17	15.5%	38	34.5%	25	22.7%	22	20.0%	8	7.3%
	I am familiar with the concept of Additive Manufacturing	17	15.5%	47	42.7%	28	25.5%	11	10.0%	7	6.4%

Analysis and Findings:

Table 20: Correlations

		Awareness of i4.0
Perceived of Usefulness	Pearson Correlation	.036
	Sig. (2-tailed)	.709
	N	110
Perceived of Ease of Use	Pearson Correlation	.413**
	Sig. (2-tailed)	.000
	N	110
Technological Adaptability	Pearson Correlation	.410**
	Sig. (2-tailed)	.000
	N	110
Awareness of i4.0	Pearson Correlation	1
	Sig. (2-tailed)	
	N	110

**. Correlation is significant at the 0.01 level (2-tailed).

A moderate positive relationship exists between awareness of i4.0, perception of ease of use, and technological adaptability. In addition, a low positive relation exists between awareness of i4.0 and perception of usefulness. An awareness of the fourth industrial revolution will likely lead to a higher level of technological proficiency, openness to change and new work opportunities, and a positive attitude towards new technologies. This makes Bangladeshi migrant workers more adaptable and likely to perceive ease of use and technological adaptability, allowing them to navigate new work environments more efficiently.

Table 21: Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.484[a]	.235	.213	4.96553

a. Predictors: (Constant), Technological Adaptability, Perceived of Usefulness, Perceived of Ease of Use

b. Dependent Variable: Awareness of i4.0

A moderate positive relationship exists between awareness of i4.0 and Technological Adaptability, Perceived of Usefulness and Perceived of Ease of Use, as the correlation here is 0.484. Around 23% of the variations in Awareness of i4.0 can be explained by the variations in the predicting variables based on this model. When the number of variables is concerned, the adjusted r-squared value is 21%. The variations in the predicting variables, including the effect of the number of the variables, can explain around 21% of the variations in Awareness of i4.0.

Table 22: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	801.503	3	267.168	10.836	.000[b]
	Residual	2613.588	106	24.656		
	Total	3415.091	109			

a. Dependent Variable: Awareness of i4.0

b. Predictors: (Constant), Technological Adaptability, Perceived of Usefulness, Perceived of Ease of Use

Here the F statistics is 10.836 and the model is statistically significant as P value is less than 1%. It means the overall model to explain the awareness of i4.0 has statistical predictive power.

Table 23: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.034	7.456		.944	.348
	Perceived of Usefulness	-.196	.233	-.075	-.839	.403
	Perceived of Ease of Use	.973	.345	.274	2.824	**.006**
	Technological Adaptability	.591	.199	.303	2.977	**.004**

a. Dependent Variable: Awareness of i4.0

Here, the perceived usefulness has a negative slope with the i4.0 awareness but has no predictive power as it has no statistical significance. On the other hand, one unit increase in perception of the ease of use will increase awareness of i4.0 by 0.973 units as it is statistically significant at less than a 1% significance level. In addition, one unit increase in technological adaptability will increase i4.0 awareness by 0.591 units as it is statistically significant at less than a 1% significance level.

Workers who perceive they are adaptable and can easily use new technologies may experience higher job performance as they can adopt and leverage new technologies more quickly. This may make them more effective and efficient in their roles, leading to greater career success, which could drive them to learn more about the i4.0 and its implications.

In addition, when workers perceive that they are adaptable and can easily use new technologies, they are more likely to engage with new technological developments, including those within the i4.0. This engagement would make them more aware of the technologies and advancements within the i4.0, as they are more likely to stay up to date with new developments in their field.

4.4 Government and World Bank Initiative in Skill Program

The Skills for Employment Investment Program (SEIP) is a project funded by the Asian Development Bank (ADB), the Swiss Agency for Development and Cooperation and the Government of Bangladesh. SEIP is implemented by the Finance Division of the Ministry of Finance, Government of Bangladesh. It operates

under the overall guidance of the Prime Minister's Office. The project contributes to the government's skill development reforms defined in the National Skill Development Policy (NSDP) and National Education Policy (NEP). The aim of the project is to increase the employability of disadvantaged & underprivileged youth and women in Bangladesh through skill training and job opportunities. The SEIP was established in 2014 and is expected to be finished in 2024 (Skills for Employment Investment Program - Tranche 3: Periodic Financing Request Report, 2019). ADB will grant $350 million to Bangladesh to assist public and private institutions in scaling up skills training for 1.25 million young people, ensuring that they are well-equipped to find work and meet the changing needs of today's labor market (Asian Development Bank, 2014).

SEIP primarily targets the unemployed and underemployed, as well as youth, women, and marginalized populations. The initiative intends to give them with quality training as well as opportunities for long-term job or self-employment. It is aimed at those between the ages of 18 and 35 who have finished at least secondary school. The project offers training in a variety of in-demand skills, including: (a) Information and communication technology (ICT), (b) Business management, (c) Hospitality and tourism, (d) Manufacturing, e) Construction, (f), Agriculture (SEIP, n.d.). The SEIP also offers job placement assistance to participants after they complete their training. Among these services are: (a) Job placement assistance, (b) Entrepreneurship training, (c) Financial assistance.

SEIP has had a positive impact on the employability of underprivileged youth and women in Bangladesh. According to a recent project evaluation: 90% of learners who finished the

SEIP's training programs found work within six months of finishing their training. Trainees who got jobs after completing the SEIP's training programs earned 20% more than non-trainees; (Skills for Employment Investment Program - Tranche 3: Periodic Financing Request Report, 2019). The SEIP has also improved the lives of trainees and their families. Trainees indicated that the project helped them better their living conditions, boost their self-esteem, and contribute to their communities (Skills for Employment Investment Program (SEIP), 2022).

SEIP is critical in bridging the skills gap and increasing workforce employability in Bangladesh. SEIP strives to generate a competent workforce that can effectively contribute to the country's economic development by providing excellent training programs and encouraging collaboration between sectors and training providers.

4.5 FGD outcome and challenges

Regarding skilled labor recruitment from Bangladesh, the Kingdom of Saudi Arabia is among the most significant nations in the world. NEOM (a planned smart city in Tabuk Province in northwestern Saudi Arabia) is a project that acted as a hub where KSA is moving ahead of UAE since they wanted to focus on the tourist industry; the most in-demand positions will be in the field of electrical and engineering. Hence, the Non-technical positions will be eliminated. Since ARAMCO in Saudi Arabia is playing a leadership role in the transition to a more sustainable energy source and has to assist the rest of the world in achieving a net-zero economy, the company is working hard to help solve the world's sustainability challenges. Aramco is the number one oil company based in the oil industry; to get employed at Aramco, language and training certifications are key. For example, welder certification is needed after taking the exam. A company named TAKAMUL (KSA based) works for compliance and has the authority to provide certification for employment. The trade course curriculum in Bangladesh does not have recognition, so we need to have MOU with TAKAMUL.

For instance, Bangladeshi electricians are trained with outdated tools, and their education level is below SSC, but India has the reverse situation. Moreover, language and academic qualifications are the most significant obstacles to promoting Bangladeshi workers. On the other hand, Indian workers are proficient in language, readability, and writability. For instance, the word processor is one of the occupations in the Saudi industry where Indians excel. Both internal and external certifications are required in Bangladesh.

Recognition of Prior Learning (RPL) is also essential. Filipinos are doing offline and online training and gaining their RPL quite easily, and they are ahead in this sector. Their certifications are recognized worldwide. Moreover, vocational trade program curricula in Bangladesh must be updated and recognized worldwide. The Philippines is the number one manpower-exporting country in the world with the use of TESDA (Technical Education and Skills Development Authority).

However, the Trainer, curriculum, and training institute affiliation are mandatory, and the curriculum must be updated/developed by the market/employer requirement as they forecast long-term HR requirement planning. The governing body of such authority must maintain world-class standards. For instance, the skill development center in Penang is so updated that all the modern equipment and skills development training methodologies are so updated. Furthermore, the Skill Development Corporation in India is also robust and third-party certification is applicable there. In Bangladesh, SEIP has been formulated so that the project is working to improve young people's competence level.

In Bangladesh, there is a need for more migration strategies that adhere to ethical principles. Even the network of manpower recruitment agencies and brokers is so strong that a considerable amount of money is charged to the migrant workers to get them on board. On the other hand, there are ample opportunities for Bangladesh to export qualified nurses to Middle Eastern nations. Discussants emphasize developing the hard and soft skills of migrant workers before landing abroad. The limitation of human resources of government agencies is also an essential factor in reaching the mass people with the awareness campaign.

Furthermore, suggestions are provided for Government service centers for migrant opportunities that must be set up at the union level. Migrant workers' health conditions need to be monitored strictly, especially in the case of Hepatitis B. They need to be trained in basic etiquettes such as personal cleanliness, proper use of toilets, and situation-specific attitudes.

More comprehensive skills gap analysis programs have to be initiated so that technology adaptation process-related activities need to be launched. Online learning content must be created, and social media platforms must be capitalized on to make people more conscious about ethical migration and work migration opportunities. The Bureau of Manpower, Employment, and Training (BMET) should take proactive measures for institutional training by increasing the number of Technical Training Centers and establishing new training

institutions in rural areas. It should ensure that the recruiting system is accountable and transparent so that intermediaries may be removed. In addition, money extortion and migrant worker harassment must be minimized.

5.0 Policy Recommendations:

Development of Skill Sector Program Under National Skill Development Authority (NSDA)

There are multiple schemes and initiatives that need to be integrated. To address the global demand for the migrant workers, there should be a coordinated effort and monitoring plan which should be led by NSDA. All the other wings should provide the necessary requirements and NSDA can combine the workflow. Later the concerned ministries or wings should implement the plan as an implementing agency. The experiences can be recorded and later provide for further modification of the existing master plan.

Certification from international skill centers/ Equivalence the skill training certificates

From the FGD and KIIs, it is found that international authorities are relying more on the globally accepted citification rather than local certificates. Thus, the local training institutes should work to validate the curriculum and work on equivalence process to make their certificates fit for the global demand. For example, SGS is an initiative for verifying technical regulations and standards for products and services in Saudi Arabia. Such institutions can be tagged with the certification process so that our migrant community get proper approval and quality assurance of their tasks or assignments. This certification process not only will increase the acceptability but also will increase the financial return of such assignments. So the proposition is to identify the global accreditation bodies and get equivalence of the skill certification for the migrant workers.

Upgradation of the training institutes with modern curriculum, equipment, and trainer:

Industry 4IR components such as IoT, AI, big data, cloud computing, augmented reality, network security, robots and 3D printing are somewhat missing in most of the training institutes in the form of curriculum and practical orientation. So, it is suggested to review the existing curriculum, conduct the required training for the trainer and include modern equipment. Based on the field visit of BRTC training institute, many drivers are getting oriented with the traditional motor parts which will be no longer useful for new generation cars with hybrid and electric power systems. Most of the recruiters will look for more applied skills of such rather than old version of the training pattern.

Aware the migrant workers about the skill requirement

It is recommended that the new requirements will eventually not be fulfilled unless the awareness program launched in an official manner. So, there should be an awareness program of orienting such skills in the district level. Awareness program should be tagged with local training institutes to demonstrate the skills to the migrants.

Tracing the skill of migrant workers and classify them with the level of skills:

One initiative should be there to tracing current skills of the aspirants for working abroad. Tracers study and registration process are essential in this context. Later the skill can be classified with various levels and eventually can be tagged with the recruiters from various online recruitment channels.

Role of recruiters in skill upgradation schemes:

Recruiters should share the organizations, occupations and skills requirements for connecting the right candidates. Thus, their role should be collecting the requirements and share to the central repository which can be only accessed by authorized user group such as Ministry of Expatriates' Welfare and Overseas Employment or NSDA.

Preparing a long-term plan considering skill gap:

Skill gap assessment and mitigating gaps through various means is a continuous and long-term agenda. Thus, there must be a long term plan for identifying future jobs and skills and required actions to build the human capital on that regard.

Lessons from established programs like SEIP:

SEIP program is one of the unique propositions which directly connect Government and Industry to meet the needs of industry. The lessons from such training programs can be added advantages to design similar efforts. In this study, SEIP program information is attached in the findings part.

Actions taken from the global best practices:

Philippine, India, Indonesia and some other country are aggressively diving for the improving national skill development schemes. It is recommended to sought out similar initiatives and lessons learn from such global practices.

Recognition of prior learning:

In Bangladesh, there are many informal learning platforms which contributes to create technical people such as light engineering cluster in Dholaikhal. These clusters should be

included in a scheme to categorize their skills, help them to align with global acceptable skill levels and get accreditation. Similar efforts should be required for other trades.

Country specific occupation and skill matrix development
Bangladesh is exporting human capital to KSA, UAE, Jordan, Lebanon, Lybia, Qatar, Kuwet, Oman, Malaysia, Singapore, South Korea, Bahrain and other destinations. Each country is abandoned and specialized in specific industry. Thus, their requirements in the light of industry 4.0 are not similar. Therefore, country specific requirements and skill requirements matrix should be prepared and updated at a regular basis.

Migrant Community, Academia, Recruiters and Government collaboration:
There should be interaction among the migrant community, academia, recruiters and Government to find out current gaps and prepare policies in this regard. From FGD outcome, it is found that there are gaps of understanding among three groups which create a problem. Thus, there should be exchange sessions among these groups under the umbrella of either Government or Academia.

A separate cell to evaluate technology integrated knowledge for occupation:
Technology is ever changing. The product lifecycle in this sector is very short. Thus, it is important to prioritize current requirements to reveal and future requirements to forecast and work on such actions. A separate national cell can monitor and research this scheme.

Table 24: Time based strategic approach

Policy recommendations	Time to address the policy			Implementing agencies
	Short term	**Mid term**	**Long term**	
Coordinated effort under NSDA		√		NSDA, MoFA, MoEWOE, BMET and other NGOs
Equivalence the skill training certificates		√		MoE, MoFA and NSDA
Upgradation of the training institutes with modern curriculum, equipment, and trainer			√	BMET
Awareness program	√			NSDC and MoEWOE
Tracing and classify the skill of migrant workers		√		MoEWOE
Recognition of prior learning	√			NSDC
Country specific occupation and skill matrix development		√		MoEWOE
A separate cell to evaluate technology integrated knowledge for occupation		√		NSDC and BMET
Cultural and language improvement schemes			√	BMET

Cultural and language improvement schemes:

Cultural and language gaps are one of basic problems which should be addressed even for understanding and coping with global changes. Thus, this study emphasizes cultural and language training and initiatives. One of AI expert suggested to develop language training apps and orient these to the aspirant group for foreign labor markets.

Skill Upgradation Policy Recommendations align to other neighboring countries or region:

There are a number of skill upgradation schemes in SAARC/ASEAN countries that can be replicable for Bangladeshi workers. The National Skill Development Corporation (NSDC) of India offers a variety of training programs to assist people in developing the skills required to succeed in the workplace. These programs span a wide range of industries, including information technology, manufacturing, and healthcare. NSDC's goal is to encourage skill development by accelerating the establishment of large, high-quality, for-profit vocational institutions (NSDC, 2023). Similarly, Pravasi Kaushal Vikas Yojana (PKVY), a skill development initiative by the Ministry of External Affairs is another project implemented by NSDC is intended to teach and certify Indian workers interested in foreign employment in specific areas and job responsibilities in accordance with international standards, in order to facilitate overseas employment chances. (Dubey, 2017). A comparable plan implemented in Bangladesh could handle the specific skill requirements of Bangladeshi workers in various areas.

Workforce Singapore (WSG) offers a number of training programs that are designed to help workers upskill and reskill. Established in 2002, WSG is a governmental board under the Ministry of Manpower (MOM) of Singapore, overseeing the development of the local workforce and industry to meet continuous economic difficulties. Their programs span a wide range of trainings such as: language, entrepreneurship, life skills and technical skills in specific industries, such as construction, manufacturing, and healthcare. WSG also offers a number of other services to migrant workers, such as: career counseling, job placement assistance, financial assistance and legal assistance (WSG, 2023). Similarly, there is also SkillsFuture Earn and Learn Programme (SkillsFuture, 2023)- This Singapore program combines disciplined on-the-job training with part-time classroom instruction to help young professionals improve their skills. A similar plan might be implemented in Bangladesh to help migrant employees improve their skills and advance in their careers.

Malaysian Skills Certification (Malaysia Skills Certificate (SKM), n.d.) has an extensive skills certification system that recognizes specific skills gained through training and work experience. Implementing a similar certification system in Bangladesh can assist authenticate migrant employees' skills and increase their employability. Furthermore, with the growing relevance of digital technologies, some governments have created programs to help people improve their digital abilities. Computer literacy, coding, data analysis, and digital marketing are among the topics covered in these programs. Upskill Malaysia is an example of a digital competency development project – it is an integrated centralized platform to search and apply for skills development programmes offered by the Malaysian Government (Upskill Malaysia, 2021).

In the Philippines, Technical Education and Skills Development Authority (TESDA) offers a variety of skill training programs to meet the needs of diverse industries (TESDA, n.d.). Whereas similarly in Sri Lanka, Vocational Training Authority (VTA) provides vocational training programs in a variety of fields (The Vocational Training Authority (VTA), 1995). Establishing such vocational training facilities in Bangladesh and aligning programs with the skills required by destination countries can help migrants increase their talents by replicating this approach in Bangladesh and adapting training programs to the demands of certain businesses. In Nepal. Foreign Employment Skill Testing Board (FESTB) exists to examine and certify the competence of migrant employees (Council for Technical Education and Vocational Training, n.d.). Bangladesh may want to consider establishing a comparable board to ensure the competency of its migrant employees and increase their employability abroad.

Bangladesh may design and implement efforts that especially target the skill development needs of its migrant workers by researching and adapting these skill upgradation plans from SAARC/ASEAN nations, hence increasing their chances and outcomes in destination countries.

6.0 Conclusion

It has been said earlier that Bangladesh is known as a worker surplus country but the human capital exported to the global labor market are not well prepared with language proficiency, technological knowledge, work training, cultural aspect and other competences required to approach the changes of global demands. Recently, a revolutionary change has been noticed in the working procedures in all the sectors throughout the world. It has become technology

based almost and that's why without knowledge of technology, it will be quite difficult to enter into and survive in the global labor market. Bangladesh earns a significant amount of remittance every year and takes the advantages to build up the national economy healthy but it won't be possible in the shot future without getting the workers well prepared with technological knowledge as they are struggling in the market. To address the global demand for the migrant workers multiple schemes and initiatives need to be integrated. Some Asian countries like- India, Philippine, Indonesia are emphasizing on improving national skill development schemes whereas Bangladesh is not up to the mark. So, it is recommended to sought out similar initiatives and lessons learn from such global practices. Each country is specialized in specific industry and in the light of industry 4.0, their requirements are also different. Hence, country specific requirements and skill requirements should be observed and updated at a regular basis. The objective of Industry 4.0 is to a higher level of automation digitization, optimization and personalization of production, automation and adaptation, human-machine interaction, value-added services as well as automated data exchange and communication. Therefore, components of Industry 4IR such as IoT, AI, big data, cloud computing, augmented reality, network security, robots and 3D printing should be added in the curriculum of the training institutes. Moreover, awareness among the migrant community, policy maker, industry, academia, recruiters and Government is necessary to find out gaps and prepare policies in this regard. Finally, the survey report after analyzing data having from FGD, KII migrant respondent and secondary sources for this study has made it clear that this type of studies are required to conduct in future to find out the way to face the existing and upcoming challenges in the overseas employment market and meet the changes of global demand.

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Appendices

Appendix 1: Survey Questionnaire

শুভেচ্ছা

অনুগ্রহ করে নীচের প্রশ্নাবলী পূরণ করতে আপনার মূল্যবান সময় ব্যয় করুন এবং শিল্প ৪.০ এর জন্য জনশক্তি প্রস্তুতি মূল্যায়ন করতে সহায়তা করুন। আপনার দ্বারা প্রদত্ত তথ্য গোপন রাখা হবে এবং শুধুমাত্র গবেষণার উদ্দেশ্যে ব্যবহার করা হবে। এই প্রশ্নপত্রটি দুইটি অংশ নিয়ে গঠিত। দয়া করে নির্দেশ অনুযায়ী প্রতিটি অংশ সম্পূর্ণ করুন।

সাধারণ তথ্য

নাম:		
লিঙ্গ: বয়স: শিক্ষার স্তর:		

	হ্যাঁ	না
১. বাংলাদেশে আপনার কোন কাজের অভিজ্ঞতা আছে কি? যদি হ্যাঁ হয়, কি ধরণের কাজের অভিজ্ঞতা _____ অভিজ্ঞতা _____ মাস/বছর	হ্যাঁ	না
২. আপনি কি বাংলাদেশে কোনো প্রশিক্ষণ নিয়েছেন? যদি হ্যাঁ হয়, কি ধরণের প্রশিক্ষণ _____	হ্যাঁ	না
৩. আপনার বিদেশে চাকরি করার অভিজ্ঞতা আছে কি? যদি হ্যাঁ হয়, কি ধরণের অভিজ্ঞতা _____ বিদেশে চাকরি করার মোট অভিজ্ঞতা, _____ মাস/বছর	হ্যাঁ	না
৪. আপনি কি বিদেশে কোনো প্রশিক্ষণ নিয়েছেন? যদি হ্যাঁ হয়, কি ধরণের প্রশিক্ষণ _____	হ্যাঁ	না

৫. আপনি কাজের জন্য কোন/কতগুলু দেশে গিয়েছেন? _____
৬. আপনার কাজের প্রকৃতি কি (যথা, কৃষি, নির্মাণ শ্রমিক, গাড়ি চালক ইত্যাদি)? _____
৭. প্রাপ্ত মজুরি (মাসিক/টাকা): _____

	হ্যাঁ	না
৮. আপনি কি বিদেশে যাওয়ার জন্য সরকারি প্রতিষ্ঠান থেকে কোনো সহায়তা পেয়েছেন? যদি হ্যাঁ হয়, কি ধরণের সহায়তা _____	হ্যাঁ	না
৯. আপনি কি বিদেশে যাওয়ার জন্য বেসরকারি প্রতিষ্ঠান থেকে কোনো সহায়তা পেয়েছেন? যদি হ্যাঁ হয়, কি ধরণের সহায়তা _____	হ্যাঁ	না

	প্রচলিত ফোন	স্মার্টফোন
১০. আপনি কোন ধরনের মোবাইল ফোন ব্যবহার করেন?	প্রচলিত ফোন	স্মার্টফোন

প্রশ্নাবলী	প্রবল অসম্মতি	অসম্মতি	নিরপেক্ষ	একমত	প্রবল একমত
বিদেশে কাজ করার জন্য দক্ষতা প্রশিক্ষণ খুবই গুরুত্বপূর্ণ (GF1)	১	২	৩	৪	৫
বিদেশে কাজ করার জন্য ভাষা প্রশিক্ষণ প্রয়োজন (GF2)	১	২	৩	৪	৫
দক্ষতা উন্নয়ন প্রশিক্ষণ আমাকে কার্যকরভাবে কাজ করতে সক্ষম করবে (GF3)	১	২	৩	৪	৫
তথ্য প্রযুক্তির প্রশিক্ষণ কাজের ক্রিয়াকলাপ সম্পাদনের জন্য দরকারী (GF4)	১	২	৩	৪	৫
তথ্য প্রযুক্তি আমার কাজ করার সময় বাঁচাবে (GF5)	১	২	৩	৪	৫
প্রযুক্তি ব্যবহার করা আমার কাজের কর্মক্ষমতা উন্নত করবে (GF6)	১	২	৩	৪	৫
তথ্য প্রযুক্তি অর্থনৈতিক সুবিধা অর্জনে সহায়তা করতে পারে (GF7)	১	২	৩	৪	৫
আমি প্রযুক্তি শিখতে খুব আত্মবিশ্বাসী বোধ করি (GF8)	১	২	৩	৪	৫
প্রযুক্তি চালনা শেখা আমার জন্য সহজ (GF9)	১	২	৩	৪	৫
শিল্প-সম্পর্কিত প্রযুক্তি ব্যবহারে দক্ষ হওয়া আমার জন্য খুব সুবিধাজনক হবে (BF1)	১	২	৩	৪	৫
আমি নতুন ডিজিটাল প্রযুক্তি গ্রহণ বা প্রয়োগ করতে দক্ষতা তৈরি করতে স্বাচ্ছন্দ্যবোধ করি (BF2)	১	২	৩	৪	৫
কার্যকরী দক্ষতা বিকাশের জন্য সঠিক প্রশিক্ষণ পেয়ে আমি আত্মবিশ্বাসী বোধ করি (BF3)	১	২	৩	৪	৫
শিল্পে প্রযুক্তিগত উদ্ভাবন সম্পর্কে আমার সচেতনতা আছে (BF4)	১	২	৩	৪	৫
ম্যানুয়াল ডেটাকে ডিজিটাল ডেটাতে রূপান্তর করার জন্য প্রয়োজনীয় দক্ষতা অর্জন করার ক্ষমতা আমার আছে (BF5)	১	২	৩	৪	৫
বিগ ডেটা অ্যানালিটিক্স (Big Data Analytics) ধারণাটি আমার কাছে পরিষ্কার। (4IR1)	১	২	৩	৪	৫
ইন্টারনেট অফ থিংস (IoT) ধারণাটি আমার কাছে পরিচিত। (4IR2)	১	২	৩	৪	৫
আমি স্বায়ত্তশাসিত রোবট (Autonomous Robot) ধারণাটির সাথে পরিচিত। (4IR3)	১	২	৩	৪	৫
ক্লাউড কম্পিউটিং (Cloud Computing) ধারণাটি আমার কাছে পরিষ্কার।(4IR4)	১	২	৩	৪	৫
আমি বর্ধিত বাস্তবতার (Augmented Reality) ধারণাটির সাথে পরিচিত। (4IR5)	১	২	৩	৪	৫
আমি সংযোজন উৎপাদন প্রক্রিয়া (Additive Manufacturing) ধারণাটির সাথে পরিচিত। (4IR6)	১	২	৩	৪	৫

Appendix 2: FGD Checklist

Discussion Topics of the FGD:

1.   <u>Current Challenges:</u>

  a.   Financial constraints of the migrant workers to get training

  b.   Curriculum in general education;

  c.   Vocational training (availability of facilities, trainers etc.)

  d.   Information unavailability regarding future skills

  e.   Role of intermediaries (Recruiting agencies, NGOs, International organizations)

  f.   Career Counselling

  g.   Cultural adaptaion (such as language)

  h.   Social challenges (female migrants' facilities/acceptance by the family and society)

  i.   Government role evaluation (Gap between initiatives taken and reach to the target migrant citizens)

  j.   Others

2.   <u>Policies / Soloutions of current challenges (proposed).</u>

Appendix 3: List of FGD Participants

1. Dr. Abdus Satter, Assistant Professor, Institute of Information Technology (IIT), University of Dhaka
2. Zakir Hossain Shallem, Director (Operations), Bangladesh Biman
3. Dr. Rafiuddin Ahmed, Associate Professor, Department of Marketing, University of Dhaka
4. ABM Abdul Halim, Deputy Secretary, Bangladesh Overseas Employment and Services Limited
5. Mr. Noor Ahmed, Deputy General Manager, Bangladesh Overseas Employment and Services Limited
6. Rasel Ahmed, Remittance fighter
7. Mohammad Robin, Remittance fighter
8. Mustafizur Rahman, Computer Operator, Employment Section, BMET (FGD)
9. Md. Mohsin Kabir, Assistant Professor, Department of Management, Chuadanga Government College, Chuadanga

Appendix 4: List of KII Participants

1. Md Rakibul Hoque, Professor, Management Information Systems, University of Dhaka
2. Dr. B M Mainul Hossain, Associate Professor, Institute of Information Technology (IIT), University of Dhaka
3. Samiul Hoque, CEO, International Center for Global Skills.
4. Mr. Mohammad Abul Hasan, Director (Admin) & Joint Secretary, NIPORT
5. Mohammad Shamim Reza, Data Entry Operator (Immigration Section), BMET
6. Md Uzir Hossain, Senior Lecturer, Universiti Malaysia Terengganu, Malaysia
7. Md. Enamul Hoque, Skill Trainer, TVET & ILO
8. Mahfuz Khan Siddique, Deputy Executive Project Director, SEIP, Finance Division
9. Alam Ahmed, Remittance fighter

Appendix 5: List of Survey Respondents

Serial	Name	Age	District	Occupation
1	Mosa. Nargis Khatun	37	Meherpur	Home maid
2	Md. Faruk Hossain	39	Chuadanga	Agriculture
3	Md. Nasrin Khatun	35	Chuadanga	Home maid
4	Md. Liton Ali	40	Chuadanga	Business
5	Md. Omar Faruk	24	Meherpur	Unemployed
6	Md. Arif Hossain	42	Meherpur	Unemployed
7	Md. Sujon Mia	40	Meherpur	Agriculture
8	Md. Insaan Ali	35	Tangail	Textile work/Garment work
9	Md. Sujon Ali	27	Kumilla	Unemployed
10	Md. A. Razzak	38	Meherpur	Business
11	Md. Alamgir Hossain	37	Chuadanga	Agriculture
12	Md. Raju Hossain	35	Chuadanga	Business
13	Joy	40	Chuadanga	Business
14	Md. Babor Hossain	30	Chuadanga	Agriculture
15	Md. Nasir Biswas	33	Chuadanga	Agriculture
16	Md. Arif Islam	31	Chuadanga	Construction work
17	Md. Jewel Hossain	30	Chuadanga	Business
18	Md. Hamidul Islam	33	Chuadanga	Agriculture
19	Md. Rintu	30	Chuadanga	Business
20	Mosa. Rowshan Ara	35	Chuadanga	Unemployed
21	Md. Hameedul Islam	30	Chuadanga	Construction work
22	Md. Asadul Hoque	40	Meherpur	Agriculture
23	Md. Salaam Ali	35	Chuadanga	Construction work
24	Md. Naim Hossain	28	Meherpur	Unemployed
25	Md. Mohibul Islam	25	Meherpur	Agriculture
26	Md. Shiblu Malitha	35	Chuadanga	Agriculture
27	Md. Montu Mia	35	Chuadanga	Agriculture
28	Md. Motin Ali	50	Chuadanga	Driving
29	Md. Nazmul Hossain	22	Chuadanga	Agriculture
30	Md. Mabud Hossain	33	Chuadanga	Agriculture
31	Md. Abdul Mojid	45	Chuadanga	Agriculture
32	Md. Akkas Ali	35	Chuadanga	Agriculture
33	Md. Shovon	30	Chuadanga	Agriculture
34	Md. Moktar Ali	36	Chuadanga	Agriculture
35	Md. Alamin Mia	27	Chuadanga	Textile work/Garment work
36	Md. Rony Mia	24	Chuadanga	Agriculture
37	Md. Tarikul Islam	40	Chuadanga	Driving
38	Md. Saju Ahmed	30	Chuadanga	Agriculture
39	Md. Abdullah	40	Meherpur	Construction work
40	Md. Saidur Rahman	37	Chuadanga	Agriculture
41	Abdus Sattar	31	Meherpur	Mechanical work
42	Md. Sobhan	30	Chuadanga	Agriculture

Serial	Name	Age	District	Occupation
43	Md. Milton Sheikh	30	Meherpur	Agriculture
44	Mosa. Shahanaj Khatun	38	Meherpur	Home maid
45	Md. Mahabul Islam	35	Meherpur	Business
46	Md. Dalim	40	Meherpur	Regular Job
47	Md. Jinarul Hossain	35	Chuadanga	Agriculture
48	Md. Tanvir Hasan	22	Chuadanga	Construction work
49	Md. Sojol Islam Rasel	35	Meherpur	Agriculture
50	Md. Biddut	45	Meherpur	Unemployed
51	Md. Atikur Rahman Lalu	24	Jhinaidah	Unemployed
52	Md. Biddut Hasan	31	Dhaka	Unemployed
53	Md. Mamun Hasan	33	Magura	Unemployed
54	Md. Raju Ahmed	38	Meherpur	Unemployed
55	Md. Rana Ahmed	30	Chuadanga	Agriculture
56	Atik	27	Comilla	Unemployed
57	Md. Miju	25	Comilla	Unemployed
58	Md. Hasan	35	Bhramanbaria	Unemployed
59	Md. Mohibul	34	Netrokona	Unemployed
60	Md. Rasel	32	Rajshahi	Unemployed
61	Bipul Biswas	32	Chuadanga	Unemployed
62	Jahid Hasan	27	Noakhali	Unemployed
63	Md. Eklachur Rahman	55	Chuadanga	Agriculture
64	Monowar Hossain Mamun	28	Sherpur	Drawing and Painting
65	Shakil Ahmed	26	Chuadanga	Electrician
66	Sakil Ahmed	28	Tangail	Agriculture
67	Rasel Islam	25	Chuadanga	Textile work/Garment work
68	Md. Azam Ali	37	Sirajganj	Agriculture
69	Md. Shihab	23	Dhaka	Unemployed
70	Sujon Ahmed	30	Chuadanga	Driving
71	Md. Sajjadur Rahman	28	Chuadanga	Unemployed
72	Md. Iqbal Hossain	21	Chuadanga	Unemployed
73	Md. Ripon Ali	35	Chuadanga	Unemployed
74	Ashraful Islam Sojib	24	Chuadanga	Textile work/Garment work
75	Selim Hossain	36	Meherpur	Agriculture
76	Ahmed Ali	45	Chuadanga	Driving
77	Ariful Ahmed	38	Meherpur	Driving
78	Md. Eklachur Rakhman	34	Meherpur	Business
79	Md. Moniruzzaman Modhu	35	Chuadanga	Construction work
80	Md. Akhter Hossain	36	Chadpur	Agriculture
81	Md. Mamunur Rashid Rony	44	Chuadanga	Unemployed
82	Md. Robin	36	Madaripur	Business
83	Munshi Subhan	31	Chuadanga	Unemployed
84	Tanvir Kabir Badhon	35	Chuadanga	Unemployed
85	Md. Ariful Hossain	40	Sherpur	Unemployed
86	Md. Rashedul Islam	42	Dhaka	Home maid
87	Banu	28	Dhaka	Unemployed

Serial	Name	Age	District	Occupation
88	Abdul Halim	56	Munsiganj	Home maid
89	Md. Khurshid Hasan Jewel	49	Dhaka	Regular Job
90	Tajenoor Rahman	44	Tangail	Regular Job
91	Walid Bin Hasan	43	Shariatpur	Regular Job
92	Mohd Asman Ali	44	Chuadanga	IT related work
93	Md. Tarikur Rahman	42	Chuadanga	Research
94	Md. Mojnu	35	Chuadanga	Business
95	Nazmul Hoque	40	Chuadanga	Unemployed
96	Jahangir Alam	43	Chuadanga	Regular Job
97	Tofsir Ahmed Tuhin	46	Chuadanga	Unemployed
98	Md. Mostafizur Rahman	48	Chuadanga	Unemployed
99	Md. Jabed Alam	25	Noakhali	IT related work
100	Md. Selim Hossain	28	Meherpur	Driving
101	Hirdoy Hossain	26	Gazipur	Unemployed
102	Jahirul Islam	27	Chadpur	Unemployed
103	Aktarul Hossain	34	Chuadanga	Agriculture
104	Hossain Reza	25	Chuadanga	Electrician
105	Tanvir Alam	30	Chuadanga	Construction work
106	Jonny Ahmed	29	Chuadanga	Construction work
107	Md. Ramzan Ali	28	Rajbari	Unemployed
108	Md. Mamun Billah	36	Chuadanga	Regular Job
109	Md. Shaheen Reza	37	Meherpur	Unemployed
110	Md. Hasibur Rahman	30	Kushtia	Unemployed
111	Md. Sajjad Ahmed	25	Kumilla	Unemployed
112	Md. Joshim Ali	45	Chuadanga	Unemployed
113	Md. Hossain Ali	50	Chuadanga	Unemployed