



## Employment Status, Challenges, Opportunity for Diploma Engineering Graduate from Survey Institute

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### Abstract:

Surveying technology is a demand-based technology (Journal of Surveying Engineering, American Society of Civil Engineers,1992). Although there is a lot of demand in the current job market (Prothom alo, march,2022), there has been very few previous research about Graduates status, challenges and opportunity. This research evaluates the employment status, challenges and opportunity for Diploma Engineering Graduate from Survey Institute in Bangladesh. This Study provides present situation of Survey Graduates at current Job Sector in Bangladesh. This study provides a comprehensive idea of the current state of the job market for survey graduates in Bangladesh. In this research the targeted population are the Principal of Survey Institutes, teachers, Survey graduates, Employers, surveyors and key informers. The study was carried out mixed method survey research design. Twelve structured questionnaire and ten Key informants interview scheduled were developed and also pre tested. In this study data has been collected from a total of 291 respondents and among them 236 Surveyors, 45 Survey Graduates (Freshers),4 key informers,6 Principal of Survey Institutes.For data analysis SPSS software are used. after analyzing the collected data, the present status is found. The study also identified the various challenges faced by survey graduate in Bangladesh. There is a shortage of modern equipment's in the institution, limited scope of technology, salary grade problem in government sector (Recruitment of ministry of land,2023), skilled Teacher's problem in private institutes, as skills mismatch, lack of training facilities in teachers and graduates (Source field survey ,2023). Besides these challenges, survey graduates are getting various opportunities in their workplace. Survey graduates are entering the public and private sector with job security, benefits and professional recognition. Strategies to solve the challenges, salary grade of governments job sectors are developed as well as others diploma engineering graduates. Policymakers, educators, and employers should work collaboratively to develop and implement effective policies and initiatives to promote employment Opportunities and support the transition of graduates into the job market purpose in Bangladesh. If all survey Graduates included in NTVQF level, they will benefit from greater access to training and skills development programs to enhance their employability and career prospects.

### Abbreviations

KII	Key informant interviews
DLRS	Directorate of Land Records and Surveys
RHD	Roads & Highways Departments
LGED	local Government and Engineering Department
BIWTA	Bangladesh Inland Water Transport Authority
GIS	Geographic information system
GPS	Global Positioning System
GNSS	Global navigation satellite system
RTK	Real-time kinematic
SPSS	Statistical Package for Social Science
NTVQF	National Training and Vocational Qualifications Framework
TMED	Technical and Madrasah Education Division
DTE	Department of Technical Education
BTEB	Bangladesh Technical Education Board
BSI	Bangladesh Survey Institute
ESIR	Engineering & Survey Institute, Rajshahi.
BBS	Bangladesh Bureau of Statistics

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# Chapter One: Introduction

## 1.1 Introduction

Bangladesh is a developing country with a population of about 165 million (BBS, July 2022). Compared to such a huge population, the amount of land in this country is insignificant. Engineering survey is an important technology applied in the quality management of construction engineering (Liu Lique & Zhang Caixia,2020). Due to this reason, land related problem (case, litigation) in Bangladesh is increasing day by day. There are not enough number of surveyors to solve land related problems. Surveying technology is running in only two govt institute (Bangladesh survey Institute, Cumilla and engineering and survey institute, Rajshahi) and a small number of private institutes which are much less than required. (Source DTE, Bangladesh) In recent years, the use of modern surveying technology has increased significantly in Bangladesh. Global positioning system (GPS), Total station, GNSS, RTK and remote sensing technologies are being used to carry out various types of surveys, including topographic surveys, cadastral surveys, and engineering surveys. (Journal of Surveying Engineering, American Society of Civil Engineers,1992) These technologies have improved the accuracy and efficiency of surveying activities, enabling surveyors to produce more accurate maps and data for development planning.

## 1.2 Justification of the study

Studying the Status, Challenges, and Opportunities of survey graduates in Bangladesh, its necessary to developing the country's surveying sector has an adequate supply of skilled professionals to meet the growing demand for surveying services. It is also crucial for developing policies and strategies to address the challenges faced by survey graduates and guide their career choices. Through a comprehensive understanding of the employment status, challenges, and opportunities, the research can contribute to improving graduate outcomes. It can provide graduates with valuable insights into the job market, enabling them to make informed decisions about their career paths, acquire necessary skills, and leverage available opportunities. There are many governments and private sector where survey graduates are working such as Land Ministry, Directorate of land Records and surveys(DLRS),Roads & Highways Departments(RHD), Bangladesh water development board, BIWTA, Rajdhani Unnayan kartipakkho, COXDA, City Corporation, local government and engineering department(LGED), Different private organization and development project Such as Padma multipurpose Bridge, metro rail, Bangabandhu tunnel, Rooppur nuclear Power plant, Dhaka elevated express way, Matarbari coal power plant, Matarbari deep sea port, Dhaka airport third terminal etc. This research aims to address this gap by examining the employment status, challenges, and opportunities faced by survey graduates in Bangladeshi survey Job Sector.

## 1.3 Statement of the Problem

Surveying is a crucial field that plays a significant role in various Government and private department such as construction, engineering and mapping. Survey graduates are expected to have the necessary skills and knowledge to work in the survey related engineering field. The

purpose of this research is to identify the problems they face and propose solutions to improve their employability and job prospects. By addressing issues such as unemployment rates, skills mismatches, limited industry exposure, insufficient soft skills development, and lack of networking and job placement support, the research objectives to contribute to the overall development of the job sector and foster better career opportunities for survey graduates in Bangladesh. This study will also identify areas where improvements can be made to better prepare survey graduates for the workplace and provide recommendations for policymakers, educators, and organization professionals to enhance the recruitment, training, and skill development of survey graduates. Survey graduates passed diploma in engineering (Surveying) but they are not getting decent salary compared to their degree. Especially in government jobs they are not getting respect and status like other diploma holders along with 10th grade. (Recruitment of ministry of land,2023). So, it is being neglected socially as well as in the workplace. Although it is a separate diploma in engineering department, they are not covered by NTVQF.

#### **1.4 Literature Review**

This literature review highlights the existing research on employment status, challenges, and opportunities for diploma engineering graduates from survey institutes. This study reveals the importance of addressing challenges such as limited job opportunities, skills mismatches, lack of industry exposure, and intense competition. It also emphasizes the potential opportunities in emerging sectors, the value of further education, and the significance of industry-academia collaboration in improving graduate outcomes. This literature review provides a foundation for conducting research on the employment status, challenges, and opportunities for diploma engineering graduates from survey institutes, helping to inform strategies and policies that enhance their employability and career prospects.

In a study (Gomes et al.2019), reveals that a significant percentage of diploma engineering graduates from survey institutes were able to secure employment. However, the study also highlighted regional disparities in employment rates, with graduates from certain areas facing more challenges in finding jobs. (Rahman, et al.2020) conducted research on the employment status of diploma engineering graduates in Bangladesh and identified that while the overall employment rate was satisfactory, a considerable number of graduates were underemployed, working in jobs that did not fully utilize their skills and qualifications.

(Ahmed and Maniruzzaman,2018) investigated the challenges faced by diploma engineering graduates in Bangladesh. Their study revealed that limited job opportunities, lack of industry exposure during education, and inadequate soft skills were major challenges faced by graduates, hindering their employability. According to a study by Hassan et al. (2017), diploma engineering graduates often face fierce competition in the job market due to a large number of graduates entering the workforce each year. This high competition intensifies the challenges faced by graduates in securing suitable employment.

A research study (Bhowmik and Shahrear,2018) focused on the potential for further education and specialization for diploma engineering graduates. The study emphasized the benefits of pursuing higher degrees or certifications to enhance career prospects and open up opportunities for graduates in specialized areas of engineering.

(Alam and Wahid,2019) examined the importance of industry-academia collaboration for improving the employability of diploma engineering graduates. The study emphasized the need for educational institutions to establish strong ties with industries to align curriculum with industry requirements and provide students with practical skills and knowledge.

In a study by (Hoque et al,2018) industry experts and employers expressed the importance of industry visits, internships, and on-the-job training opportunities for diploma engineering graduates. Such experiences enhance graduates' understanding of industry practices, increase their employability, and bridge the gap between theoretical education and practical skills.

Although there have been many studies on the status, challenges and opportunities of diploma in engineering graduates, no study has been reported on graduates from survey institutes. Therefore, we have worked on the status, challenges and opportunities of survey graduates at all levels, starting from the field level. In this paper, we explore the specific issues related to survey research, focusing on the different stages of the research process that include defining the study population and gaining data access, data collection, development, data analysis, and finally publication of the results.

## **1.5 Objectives of this study**

The survey diploma graduates who are currently working in different sectors in the labor market, will get a real picture of their job status, various obstacles and opportunities in their workplace. This research addresses this gap by examining the employment Status, Challenges, and Opportunities faced by survey graduates in Bangladeshi survey Job Sector. This research study aimed to explore the present status, challenges and opportunity of survey graduates in Bangladesh. From this study the challenges of survey graduate can be found in detail. In Recent years, the expansion of survey education in Bangladesh and its importance has increased remarkable.

In this study find out the Socio- economic condition of Bangladesh, contributing to the infrastructural development of our Country.

In this Study we also find out the social employment status and challenges faced by the survey graduates at their working Sector.

This study has been completed with three objectives; The objectives were:

1. To evaluate the employment status of survey diploma graduates from survey Institute.
2. To identify the challenges of survey diploma graduates.
3. Find out/recognize the opportunities of diploma graduate at their job Sector.

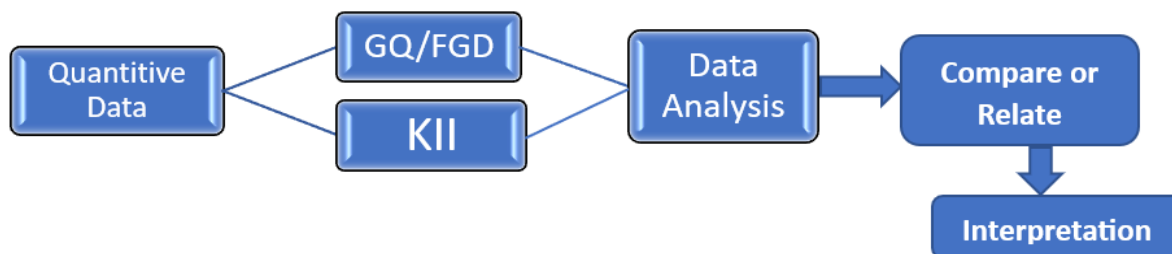
## 1.6 Methodology

This Section consist of research method, research design, research instruments, target population and sampling procedure, data collection and analysis technique etc.

### 1.6.1 Research Design

This study used a quantitative research design and collected data through an offline and online survey of survey graduates in Bangladesh. The survey was distributed use a purposive sampling technique to ensure that the sample is representative of the population of survey graduates in Bangladesh. The survey was included closed-ended and open-ended questions about employment status, faced challenges, and opportunities of Survey Graduates.

General questionnaire and FGD (Focus Group Discussion) data was Collected from different employees from govt and private sector, KII from govt and private survey Institutions head and different engineering organization head. Collected the feedback from them and then required modification and finalization was done. This final questionnaire was the data collection instrument, whose copies were distributed to the target population and gathered & sorted the valid data. 15 FGD, 10 KII and 6 Foreign employee’s interviews (Zoom Platform) commenced for qualitative data. All quantitative data was processed for analysis and findings.



**Fig: Research Design**

### 1.6.2 Research inquiry Strategy

Table:1.1-Research Strategy

Research Questions	Strategy of Inquiry
What is the current employment status of survey graduates in Bangladesh?	Quantitative
What are the challenges faced by survey graduates when entering the job market in Bangladesh?	Quantitative
What opportunities are available for survey graduates in terms of career advancement and professional development in the Bangladesh?	Quantitative

This study had been conducted through the mixed method of research design. For quantitative research questionnaire, FGD and KII were used for collection both primary and secondary data by sharing participation previous knowledge, Experience, opinion, observation also to get details present status of Survey graduates. Data were collected also by the help of BTEB, Job placement



cell, X-student portal([www.bsiedu.gov.bd](http://www.bsiedu.gov.bd)) and govt. and private survey Institutional record database in Bangladesh. (Ahmed & Azim,2016)

### 1.6.3: Target Population, Samples and sampling

The target population for this research will be graduates who have completed diploma in surveying from survey institutes in Bangladesh. The target population will also include recent graduates who have completed their studies in the last five years. Our target population was 291 nos. such as-

Principal of survey institute (Government)

Principal of survey institute (Private)

Engineering organization head

Survey graduates (Freshers)

Surveyors (Govt & private Sector)

The sample size determined based on the specific research objectives, research questions, and the overall design of the study. In this study the sample size is sufficient to address the research objectives and provide meaningful insights from both the qualitative and quantitative components of the study of survey graduates.

To obtain a representative sample of the target population, a purposive sampling technique will be used. A purposive sample will be selected based on the following criteria:

1. Graduates who have completed a degree or diploma in surveying from Survey institutes in Bangladesh.
2. Graduates who have completed their studies in the last five years.

Random and purposive Sampling has been used as per the research study demand.

#### Sample Selection Procedure

**Table:1.2: Sample Size and Sampling**

Source of Data	Sample Size	Sampling Method
Principal of Survey Institute (Government)	02	Purposive Sampling
Principal of Survey Institute (Private)	04	Purposive Sampling
Engineering Organization Head	04	Purposive Sampling
Survey Graduates (Freshers)	45	Random Sampling
Surveyors (Govt & Private Sector)	236	Random Sampling
Total=	291	

This study source of data was principal of survey Institute (Government)-02nos, Principal of survey institute (Private)-04nos, Engineering organization head-04nos, survey graduates

(Freshers)-45nos and surveyors (Govt & Private Sector)-236nos. our sampling system was purposive and random sampling. (Rakib and Munshi,2022)

#### **1.6.4 Research Tools**

Research tools and instruments that can be used for the study on employment status, challenges, and opportunities of survey graduates in Bangladesh.

Questionnaires: This Research involves a set of structured question like general questionnaire for survey graduates about their employment status, challenges and opportunity. Also, Online survey platforms such as google forms are used for data collection.

Interviews: In this research, Interviews involved face-to-face or virtual discussions (zoom platforms) between a researcher and participants to gather qualitative data. Questions types were structured and semi-structured questions and Focus groups discussion. Twelve FGD, ten KII and six foreign employee's interviews (Zoom Platform) commenced for qualitative data. All quantitative data was processed for analysis and findings.

#### **1.6.5 Data Collection technique**

The survey questionnaire can be distributed among the survey graduates through different methods such as face to face Group discussion, e-mail, and online methods. The survey can be designed to include both closed-ended and open-ended questions to gather both quantitative and qualitative data. (Ahmed and Azim,2016)

To ensure the reliability and validity of the data collected through the survey questionnaire, the following measures can be taken:

The survey questionnaire was pre-tested in Engineering and survey institute Rajshahi and CCN polytechnic institute to identify and address any potential issues with the questions or response options. Then the random sampling technique used to ensure that the survey results are representative of the population of survey graduates in Bangladesh.

At last, the data collected through the survey can be analyzed using statistical software such as SPSS to identify trends, patterns, and relationships among the variables.

#### **1.6.6: Research Region**

The research region is conducted by five regions of Bangladesh such as Dhaka, Cumilla, Chittagong, Rajshahi, Patuakhali and various department including the Bangladesh survey institute, Engineering and survey institute Rajshahi(ESIR),Land ministry, Directorate of land records and surveys(DLRS),Roads & Highways Departments, Bangladesh water development board, BIWTA, Rajdhani Unnayan katripakkho, COXDA, City Corporation, local government and engineering Department(LGED), Different Private Organization and development project such as Padma multipurpose Bridge, metro rail, Bangabandhu tunnel, Rooppur nuclear power plant, Dhaka elevated express way, Matarbari coal power plant, Matarbari deep sea port, Dhaka airport third terminal etc.

The research covers the current status, challenges and opportunity of survey graduates located in different district and cities of Bangladesh.

## 1.6.7: Chapter outline of the Report

**This Research paper consist of five chapters. Which are described below:**

**In The first chapter, it was based on the entire study to the introduction of the study.**

Background information on the study and its purpose, Overview of the research questions and objectives and brief discussion of the methodology used to conduct the study

### **Status of Survey Graduates in Bangladesh**

Overview of the employment status of survey graduates in Bangladesh, Discussion of the factors contributing to high rates of unemployment and underemployment and Comparison of the employment status of male and female survey graduates

### **Challenges Facing Survey Graduates in Bangladesh**

Analysis of the challenges faced by survey graduates in securing employment and career advancement opportunities, Discussion of the skills gap and the mismatch between the skills possessed by graduates and the skills demanded by employers And Examination of the gender disparities in the labor market and the challenges faced by female graduates.

### **Opportunities for Survey Graduates in Bangladesh**

Identification of the sectors and industries that offer employment opportunities for survey graduates, Analysis of the potential for private sector employment and entrepreneurship and Discussion of the importance of investment in higher education and skills development to enhance employability and career prospects

### **Conclusion**

Summary of the key findings of the study, discussion of the broader implications for the labor market and the economy and final thoughts on the study and its potential impact on future research and policy development.

### **Implications and Recommendations**

Analysis of the implications of the study's findings for policymakers, educators, and employers. Discussion of evidence-based strategies to address the challenges facing survey graduates in Bangladesh. Recommendations for policymakers, educators, and employers to promote greater opportunities and support the transition of graduates into the labor force

## Chapter Two: Employment Status

### 2.1 Introduction

The global drivers for change in the spatial information world can be identified as technology development, micro-economic reform, globalization, and sustainable development (Williamson and Ting, 1999)

The engineering and surveying sector in Bangladesh have been growing in recent years, with the government investing heavily in infrastructure development projects such as highways, bridges, power plants, and water supply systems. As a result, the demand for engineering and surveying professionals has been increasing. In this Study Find-out the present Status of survey graduate of Bangladesh who are currently working in different engineering job sector. conducted research on the employment status of diploma engineering graduates in Bangladesh and identified that while the overall employment rate was satisfactory, a considerable number of graduates were underemployed, working in jobs that did not fully utilize their skills and qualifications. (Rahman et al.2020)

This Chapter analyzed the received primary and secondary data and present the data addressing research question, the existing status of survey graduate in Bangladesh. By the help of Website of BTEB, X-Student Portal, Job Placement Cell and every Institutional record data base, we find-out the present Status of Survey Graduate. The number of survey institutional head, different engineering organization head, fresh graduate and surveyors who are working at different survey engineering sector in Bangladesh etc. Had to take into consideration in a few structured questionnaires for data analysis.

A research study on employment status in Bangladesh can provide a comprehensive understanding of the current employment situation in the country. This can help policymakers and stakeholders identify the challenges faced by job seekers and develop strategies to address them. this study can analyze the impact of government policies and initiatives aimed at creating employment opportunities in Bangladesh.

In this Chapter main Purpose of the study is to identify the Challenges of survey diploma graduates.

In This Study we focused about the present status Survey Graduates from Survey Institute in Bangladesh who are Currently working at different Engineering Job sector. Find out the Socio-Economic Condition of Bangladesh, how Survey Graduates are contributing to the infrastructural development of our Country. also find out the Social Status by the survey Graduates at their working Sector.

## 2.2 Status and personal information Analysis of Survey graduates in Bangladesh

**Table:2.1: Number and Percentage of Gender:**

Male Respondents	Female Respondents	Total Respondents
255	26	281
91%	9%	100%

Source: Field survey,2023

In This table-2.1 indicates that there are 281 target population in this study located at different districts in Bangladesh. And about 281 Respondents which of them male respondents are 255(91%) and Female Respondents are 26(9%) respectively are working various survey engineering departments in Bangladesh. Maximum survey graduates are male and small number of survey graduates are female reason for huge fieldwork.

**Table:2.2: Employment and Unemployment Status of Survey Graduates**

Employed	Fresher's	Total Respondents
198	83	281
71%	29%	100%

Source: Field survey,2023

In This table-2.2 indicates that there are 281 target population in this study located at different districts in Bangladesh. And about 281 Respondents which of them employed respondents are 198(71%) and Freshers Respondents are 83(29%) respectively are working various survey engineering departments in Bangladesh. To obtain the survey data on this topic, I recommend checking reputable sources such as government sector and job market of survey graduates in Bangladesh. These sources are likely to provide up-to-date and accurate information on the status of graduates in Bangladesh.

**Table:2.3: Salary Grade and Percentage of Survey Graduates**

Grade	Number of participants	Percentage
7th	1	0.5%
10th	8	2.5%
12th	4	1.5%
14th	186	66%
15th	4	1.5%

16th	11	4%
others	67	24%
Total=	281	100%

Source: Field survey,2023.

The Table-2.3 Shows various salary grades of Survey Graduates who are working at different survey engineering sector in Bangladesh. The maximum respondents of table 2.3 shows that (186 of 66%) who are working at govt Job sector, their salary grade is 14<sup>th</sup>, on other hand 67 respondents working at different grades, 11 respondents are working at 16<sup>th</sup> grade, 8 respondents are working at 10<sup>th</sup> grade, only 4 respondents are working at 12<sup>th</sup> and 15<sup>th</sup> grades. According to Government Diploma in Engineering organogram all Diploma Engineers are recruited at 10<sup>th</sup> Grade salary but its discrimination that surveying diploma Graduates are not get their proper 10<sup>th</sup> grades salary scale.

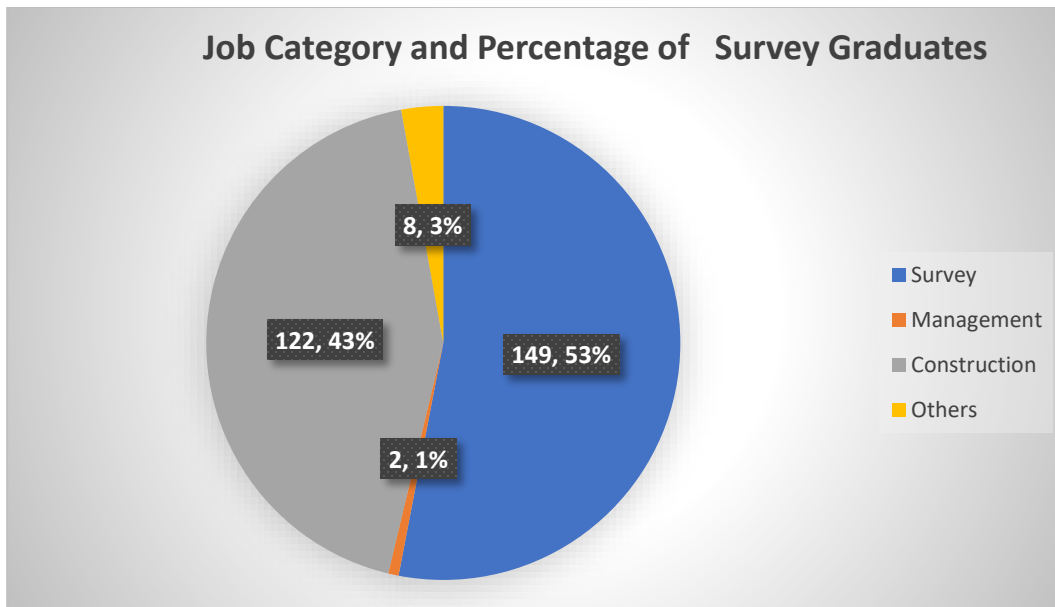
Source: Field survey/2023 and job placement cell of different survey institute.

**Table:2.4: Job Category and Percentage of Survey Graduates**

Category of Organization	Number of Respondents	Percentage of Respondents
Survey	149	53%
Management	02	0.7%
Construction	122	43.3%
Others	8	3%
Total	281	100%

Source: Field survey,2023.

In this table-2.4 most of Survey Graduates works at Survey related Engineering sector in Bangladesh. we see the table:2.4, 149(53%) respondents are working at survey related organizations. 122(43.3%) respondents are working at Construction sector, 2 (0.7%) respondents are working at management level in engineering sector.

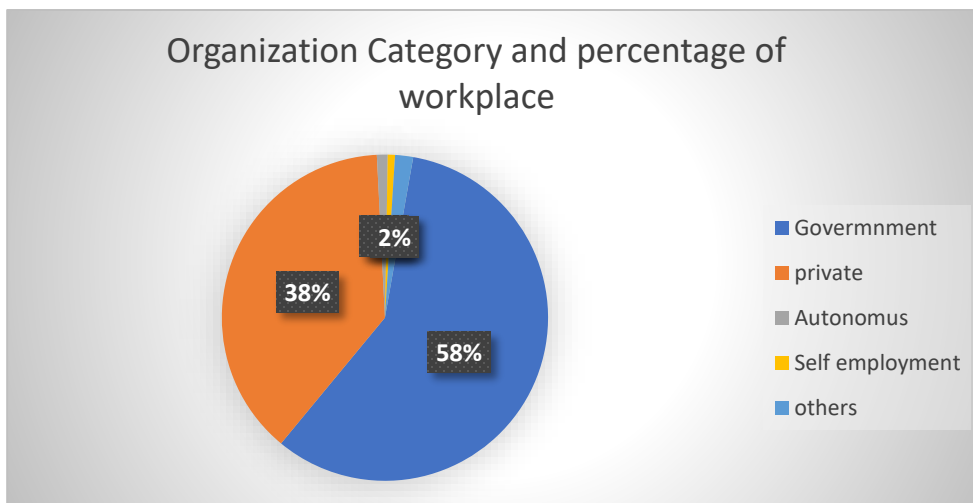


**Chart-2.1: Job Category and Percentage of Survey Graduates**

**Table:2.5: Organization Category and percentage of workplace**

Organization Name	Employed Respondents	Percentage of Employed
Government	163	58%
Private	107	38%
Autonomous	3	1%
Self-employment	2	1%
others	5	2%
Total	281	100%

Source: Field survey,2023.

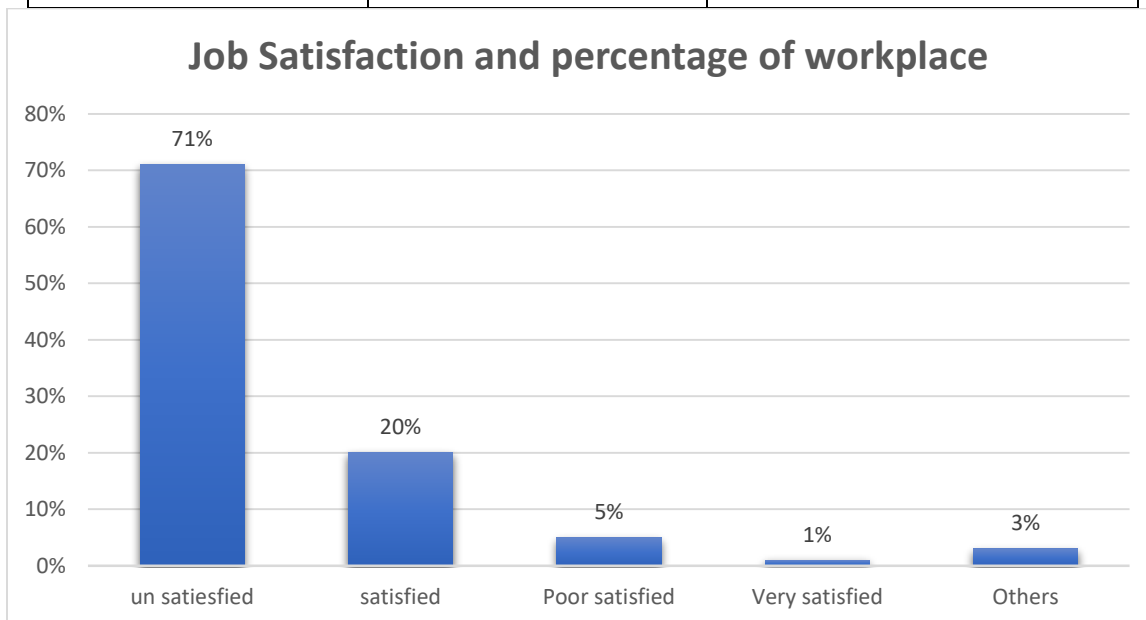


**Chart:2.2: Organization Category and percentage of workplace**

In The chart-2.2 Shows the different category of survey engineering where survey graduates are working. Such as Government (58%), Private (38%), Autonomous (1%), Self-employment (1%) and others (2%). (Rakib and munshi,2022)

**Table:2.6: Job Satisfaction and percentage of workplace:**

Category of Satisfaction	Employed Respondents	Percentage of Satisfaction level
Dissatisfied	198	71%
satisfied	56	20%
Poor satisfied	13	5%
Very satisfied	1	1%
others	13	3%
Total	281	100%



**Chart-2.3: Job Satisfaction and percentage of workplace.**

**The chart 2.3** Shows the job satisfaction level of survey graduates in Bangladesh. Maximum 71% Employees Comments are Dissatisfied due to their lowest salary grade in government sector. According to Government Diploma in Engineering organogram all Diploma Engineers are recruited at 10<sup>th</sup> Grade salary but its matter of sorrow that surveying diploma Graduates are not get their proper 10<sup>th</sup> grades salary scale. Satisfied and very satisfied percentage level of respondents are 20% and 1% because of their higher salary grade in private organization, development projects and foreign job sector. (Luqman & jamil,2012)



## **Conclusion**

From this study the status of survey graduates in Bangladesh can be found in detail. Based on our analysis of survey data, there are 281 target population in this study located at different districts in Bangladesh. And 281 Respondents which of them employed respondents are 198(71%) and Freshers Respondents are 83(29%) respectively are working various survey engineering departments in Bangladesh. To obtain the survey data on this topic, recommend checking reputable sources such as government sector and job market of survey graduates in Bangladesh (Field survey,2023). Furthermore, this study revealed that the majority of employed graduates work in the public sector and private sector, with a smaller percentage in the self-employment. This suggests a need for policies and initiatives to promote entrepreneurship and self-employment opportunities for graduates. Further research is needed to explore the underlying factors contributing to these trends and to develop effective strategies for improving employment outcomes for survey graduates in Bangladesh.

## Chapter Three: Challenges of Employment

### 3.1 Introduction

This Chapter analyzes the received primary and secondary data and present the data addressing research question “what are the challenges faced by survey graduates at their job sector in Bangladesh?” In Bangladesh, graduates from survey-related disciplines such as Surveying face several employment challenges. This research paper discusses major challenges in some details (stig Enemark,2009)

In this Section main Purpose of the study is to identify the Challenges of survey diploma graduates in Bangladesh. To find out the challenged faced by survey graduates, Data was collected by the help of Website of BTEB, X-Student Portal, Job Placement Cell and every Institutional record data base. Discuss the various challenges faced by survey graduates in Bangladesh, such as limited job opportunities, low Salaries, inadequate training and education.

### 3.2: Types of Challenges

The Participants(N=291nos) opinions was taken for consideration their statements related to Challenges faced by survey graduates at their job sector:

#### 1. **Low salaries:**

Bangladesh is the existing salary structure and grading system. The salary structure for government employees in Bangladesh is based on the National Pay Scale, which has a fixed set of pay grades for different levels of positions in the Govt sector. The salary scale for surveying professionals is lower compared to other technical professions such as engineering Sector.

Additionally, the salary scale for government employees in Bangladesh is determined by the job category and educational qualification, rather than the specific skills and experience of the individual. This means that surveying professionals with higher levels of experience and expertise may not receive a higher salary, which could result in low morale and motivation.

graduates from survey Institute receive lower salaries than other engineers in Bangladesh. Survey graduates passed diploma in engineering (Surveying) but they are not getting decent salary compared to their degree. Especially in government jobs they are not getting respect and status like other diploma holders along with 10th grade. (Recruitment of ministry of land,2023)

#### 2. **Skills mismatch:** Graduates may have skills that do not match the requirements of potential employers. This can be due to the lack of exposure to the latest technologies, inadequate training, or a mismatch between the curriculum and the needs of the job sector.

the skills mismatch of survey graduates in Bangladesh can be attributed to several factors, such as the quality of education and training, updated curriculum, and limited exposure to modern surveying techniques and technology. There were some discrepancies with the 2010 and 2016 regulations, where there were inconsistencies in credit and practical matters.

(Source:bteb.gov.bd)

Another factor contributing to the skills mismatch is outdated curriculum. Many surveying programs in Bangladesh use updated curriculum that do not adequately prepare students for the

modern job market. This can result in a mismatch between the skills and knowledge that surveying graduates possess and the skills and knowledge that employers require.

Additionally, surveying graduates in Bangladesh may have limited exposure to modern surveying techniques and technology due to the lack of resources and training opportunities. This can make it difficult for them to adapt to the changing demands of the job market and can result in a skills mismatch.

- 3. Lack of training and education:** There is a shortage of trained surveying professionals in Bangladesh, which means that many survey Graduates may not have the necessary skills or knowledge to perform their jobs effectively. the lack of training and education opportunities for survey graduates in Bangladesh is a major issue that can affect their employability and career prospects. This lack of training and education can be attributed to several factors, including a lack of resources and funding, a shortage of qualified instructors, and a lack of coordination between organization employer and employees.

One of the main reasons for the lack of training and education opportunities for survey graduates in Bangladesh is the shortage of resources and funding. Many survey institutes and training institutions in Bangladesh do not have the necessary resources, such as modern equipment and software, to provide students with hands-on training and practical experience. This can limit the quality of education and training that surveying graduates receive and can make it difficult for them to adapt to the demands of the job market.

- 4. Lack of modern equipment and technology:** Many Survey Graduates in Bangladesh lack access to the latest surveying equipment and technology base software, which can make their work time-consuming and making it more difficult for survey graduates to procedure accurate and reliable data.

The lack of modern equipment and technology such as RTK, DRONE, GNSS and GIS is a significant challenge for survey graduates in Bangladesh. It can limit their ability to perform their job duties effectively and can also reduce their competitiveness in the job market.

One of the primary reasons for the lack of modern equipment and technology is the limited availability of resources and funding. Many surveying firms and educational institutions in Bangladesh do not have the financial resources to purchase or upgrade modern equipment and technology. This can result in outdated equipment and technology being used, which can limit the accuracy and efficiency of surveying work.

Another contributing factor to the lack of modern equipment and technology is the limited access to training and education opportunities. Without proper training and education, surveying graduates may not be aware of the latest equipment and technology trends and how to use them effectively. This can result in a skills gap between what the graduates have learned in school and what is required in the job market.

### 3.3: Challenges Analysis of Survey graduates in Bangladesh

**Table-3.1: Inconsistency between course curriculum and job sector**

Answer Types	Respondents Employees	Percentage of Respondents
Yes	222	79%
No	57	20.3%
No Cements	02	0.7
Total	281	100%

Source: Field Survey,2023.

Table-3.1 indicates the respondent’s opinion about Inconsistency between course curriculum of academic studies and their job field. (Stig Enemark,2009) Maximum 222(About 79%) To obtain specific research claims or more comprehensive information on the topic, I recommend referring to Inconsistency between course curriculum and job sector and government surveys that focus on graduate employment and education in Bangladesh. Participants opinion to update the course curriculum with modern technological equipment’s like GIS, RTK, GNSS, GPS, Drone Survey & Satellite Surveying include with course curriculum. Graduates may have skills that do not match the requirements of potential employers. This can be due to the lack of exposure to the latest technologies, inadequate training, or a mismatch between the curriculum and the needs of the job sector. The skills mismatch of survey graduates in Bangladesh can be attributed to several factors, such as the quality of education and training, outdated curriculum, and limited exposure to modern surveying techniques and technology. Poor Number of Participants comments no Inconsistency with Course Curriculum. (Source:bteb.gov.bd)

**Table-3.2: Skill Required outside of academic Studies**

Answer Types	Respondents Employees	Percentage of Respondents
Yes	211	75.1%
No	66	23.5%
No Cements	04	1.4%
Total	281	100%

Source: Field survey,2023

Data about skill required outside of academic studies have been collected by target population on field. The table-3.2 indicates that maximum 75.1% participates says that update skill required related to surveying technology in the behinds of academic studies those who update their skill level with present modern technology their performance is high at their work field. This research aims to investigate the significance of non-academic skills in the field of surveying engineering, focusing on their impact on graduate outcomes. Technical skill required hydrographic survey,

ocean survey, aerial photogrammetry, drone survey and geo-informatics. While academic knowledge and technical competencies are crucial for surveying graduates, it is essential to explore the complementary non-academic skills that contribute to professional success and career advancement. This study seeks to provide empirical evidence on the non-academic skills that are highly valued in the surveying engineering industry and their correlation with favorable graduate outcomes. The Others skill required in the job sector are Communication skills, Analytical and problem-solving skills, technical skills, time management skills, teamwork and leadership skills etc.

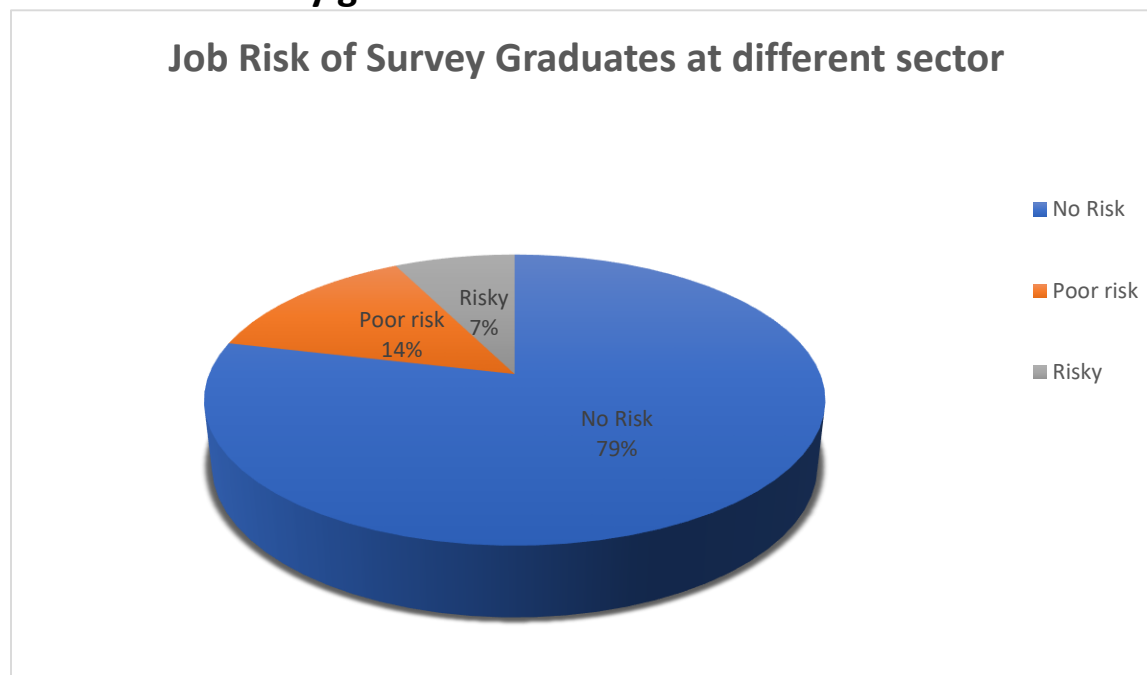
**Table-3.3: Technological Demand of surveying respected to Current Job Market**

Answer Types	Respondents Employees	Percentage of Respondents
Yes	276	98.2%
No	05	1.8%
Total	281	100%

Source: Field survey,2023.

The demand of surveying technology in Bangladesh is increasing due to various reasons. Bangladesh is a rapidly developing country, and there is a growing need for accurate and up-to-date spatial data for infrastructure development, land-use planning, environmental management and resource management. The respondent's opinion about technological demand of surveying is very positive. About 98.2% respondent's opinion are YES for technological demand at their job place. The engineering quality management work cannot be separated from the support of engineering survey, so in the process of carrying out the management, we must strengthen the engineering survey work, reduce the quality problems caused by the error as far as possible, and improve the project quality (Liu Ligue & Zhang Caixia,2020). Conduct a comprehensive review of academic literature, industry reports, and relevant publications to identify the emerging technological trends and advancements in surveying engineering within the context of Bangladesh. This research purpose to examine the technological demand for surveying engineering professionals in Bangladesh and its correlation with the current job market. With the rapid advancement of technology in various industries, it is crucial to understand the specific technological skills and competencies that are sought after by employers in the surveying engineering sector. This study seeks to provide empirical evidence on the technological requirements and trends in the field and their impact on the demand for surveying engineering professionals.

## Job Risk of Survey graduates



**Chart-3.2: Job Risk of Survey graduates**

Surveyor in Bangladesh can carry various risks. Surveyors often work in outdoor environments, which can expose them to extreme weather conditions such as heat, rain, and flooding. (Koth et al. (2017), physical risks faced by land surveyors were identified, including exposure to extreme weather conditions, hazardous terrain, and potential accidents on-site. The study emphasized the importance of implementing safety measures and providing proper training to mitigate these risks. Additionally, they may encounter physical hazards such as unsafe structures, uneven terrain, and dangerous wildlife. This research provides to investigate the job risk and employment vulnerability faced by surveying graduates in Bangladesh. Job risk refers to the likelihood of unemployment, underemployment, or precarious employment for graduates in the field of surveying. Understanding the factors contributing to job risk and identifying potential mitigation strategies is crucial for informing policy interventions and improving the employment prospects of surveying graduates. This study seeks to provide empirical evidence on the job risk levels, key contributing factors, and potential strategies to mitigate job risk for surveying graduates in Bangladesh. (Stumpf et al.2019) explored the technological risks faced by land surveyors, including errors in data collection, equipment malfunctions, and data security breaches.

The Chart-3.2 shows the job risk at Survey Graduates workplace. The maximum participants about 79% and 14% said no risk and poor risk at their job sector. Only 7% participants said risk at their job sector who worked private and Construction organization in Bangladesh.

## Conclusion

The challenges will be to integrate modern surveying technology into a broader process of problem solving and decision making within the land management regime (Stig Enemark,2009) Our Study suggest that there is a need for a more comprehensive and integrated approach to addressing the employment challenges faced by survey graduates in Bangladesh. Some of Challenges faced by Survey graduates in Bangladesh are Limited job opportunities, Low salaries, Lack of modern equipment and technology, Lack of training and education, Skills mismatch etc. In this study also revealed that there are significant gender disparities in employment outcomes, with female graduates facing greater challenges in securing employment and career advancement opportunities. This highlights the need for targeted policies and initiatives to address gender inequality in the job market and empower women in the workforce. Policymakers, educators, and employers may need to work collaboratively to develop and implement effective policies and initiatives to support the transition of graduates into the job market and address the underlying factors contributing to the challenges faced by survey graduates in Bangladesh. Further research is needed to explore these issues in greater depth and develop evidence-based strategies for improving employment outcomes for survey graduates in Bangladesh.

## Chapter Four: Opportunity

### 4.1: Introduction

This Chapter analyzes the received primary and secondary data and present the data addressing research question “what types of opportunities/benefits get by survey graduates at their job sector in Bangladesh?” Despite the challenges, there are several opportunities for Survey graduates in Bangladesh. Such as good salary in foreign job and different development projects, Increasing demand for Survey Graduates, Government initiatives, international development project and potential for entrepreneurship.

### 4.2: Justification of Opportunity

In this section we taken into consideration about our target population opinions to find out the different types of personal and social benefits they get at their job place. Overall, surveyors can bring personal and social benefits to their job sector in Bangladesh by contributing to the generation of information, increasing transparency and accountability, and improving quality of life and economic development.

Survey Graduates can bring personal and social benefits to their job sector in Bangladesh. Some potential benefits include:

Survey Graduates have the opportunity to develop a range of technical and soft skills, including survey design, data collection and analysis, project management, and communication. This personal development can enhance their career prospects and help them become more effective professionals.

Survey Graduates play an important role in generating information that can inform public policy and decision-making. By collecting and analyzing data on social and economic trends, Survey Graduates can help policymakers and government agencies make informed decisions that benefit society.

Survey Graduates can provide valuable insights into the needs, preferences, and experiences of different communities. By understanding these needs, organizations can design and implement policies and programs that improve quality of life for individuals and communities.

Survey Graduates can also contribute to economic development by identifying opportunities for growth and innovation. By collecting data on consumer behavior, market trends, and business practices, surveyors can help organizations make informed decisions that lead to economic growth and development.

Overall, surveyors can bring personal and social benefits to their job sector in Bangladesh by contributing to the generation of information, increasing transparency and accountability, and improving quality of life and economic development.



### 4.3: Objectives of Opportunity

In this Chapter main Purpose of the study is to identify the opportunity/benefits of survey graduates in Bangladesh.

In This Study we mainly focused about the opportunities Survey Graduates from Survey Institute in Bangladesh who are Currently working at different Engineering Job sector. Find out the Social and personal opportunity of survey graduates of Bangladesh, how Survey Graduates are contributing to the infrastructural development of our Country.

### 4.4: Opportunities Analysis of Survey graduates in Bangladesh

**Table-4.1: Govt. Organization/institution facilities of Graduate**

Name Of Facilities	Number of Respondents	Percentage of Respondents
Salary+ Medical Allowance + Education Allowance + Bonus	227	80.8%
Salary+ Medical Allowance + Education Allowance + Bonus+ Transport facilities	07	2.5%
Extra facilities	47	16.7%
Total	281	100%

Source: Field Survey,2023

Bangladesh is a developing country with a large population, and the job market is highly competitive. Despite the growing number of graduates, the employment rate has not increased proportionately, which poses a significant challenge for fresh graduates.

The Table 4.1 summarized results indicates that the graduates who are working in the government sector 80.8% employees are get different facilities such as Salary, Medical Allowance, Education Allowance, Bonus. Besides these facilities only 2.5 % employees are getting extra transportation facilities.16.7% employees are getting extra facilities in their job sector. (Rahman & Hasan,2022). Therefore, the aim of this research is to conduct an opportunities analysis of survey graduates in Bangladesh to identify the challenges they face and propose potential solutions.

**Table:4.2: Private Organization/institution facilities to Graduate**

Name Of Facilities	Number of Respondents	Percentage of Respondents
High salary+ Medical allowance +Education allowance and Bonus	63	22.50%

Source of Data: Field data,2023

The	High salary+ Medical allowance +Education allowance +Bonus Increment+ transportation.	171	60.50%
	Extra facilities	47	17%
	Total	281	100%

Table 4.2 shows that majority of the respondents who are working in the private organization or development base project, they get more facilities from private job compared to govt job. Most of the respondents 60.50% are getting different facilities such as High salary, medical allowance, Education allowance, Bonus, Increment & transportation. Besides these facilities, 22.50% employees get all facilities which describe in the above without transportation facilities. 17% employees are getting extra more facilities in their organization. (Bolstad and Zhan,2018) highlighted the importance of providing land surveyors with modern and reliable field equipment and tools. This includes Global Positioning System (GPS) receivers, total stations, levels, and other measurement instruments.

**Table-4.3: Are Graduates (Working abroad) Contributing to the Economic Development of the Country**

Answer Types	Respondents Employees	Percentage of Respondents
Yes	280	99.60%
No	01	0.40%
No Comments	00	0%
Total	281	100%

Source of Data: Field survey,2023

Survey Graduates can find job opportunities both domestically and internationally, and may choose to work abroad for a variety of reasons, including personal and professional growth, better job opportunities. In this table-4.3 maximum respondents 99.60% think that survey graduates who are working in abroad Contributing to the Economic Development of the Country. Survey graduates contribute to economic growth through increased labor force participation and productivity. Skills and knowledge acquired by survey graduates positively impact the performance and competitiveness of industries and sectors. Survey graduates play a significant role in driving innovation and technological advancements, leading to economic development.

## Conclusion

This study provides valuable Information into the employment opportunities available to survey graduates in Bangladesh. Personal benefits such as salary, house allowance, medical facilities and transportation facilities, contributing to society in different ways specially the contribute the infrastructure development and construction site, survey digitalization in land sector and Improved Economic development. Based on our analysis of survey data, we found that a

significant percentage of graduates are employed in the Government and private sector, with a smaller proportion in the self-employment. In job sector female and personal disability persons opportunities in workplace.

## Chapter five: Conclusion

The Findings of this study Concludes that first of all, current employment status of survey graduates in Bangladesh, the second one is the main challenges faced by survey graduates in Bangladesh in their job sector. Third one is the key opportunities for survey graduates in Bangladesh, and in which sectors do they have the greatest potential for employment. This study aimed to explore the present status, challenges and opportunity in Bangladesh. From this study the challenges of survey graduate can be found in detail. In Recent years, the expansion of survey education in Bangladesh and its importance has increased remarkable.

Our findings suggest that there is a need for greater investment in higher education and skills development to address the challenges faced by survey graduates in securing employment. Policymakers and educators may need to consider these findings when developing policies and programs to address employment-related issues and support the transition of graduates into the job market. Further research is needed to explore the underlying factors contributing to these trends and to develop effective strategies for improving employment outcomes for survey graduates in Bangladesh.

**Status:** A significant proportion of survey graduates in Bangladesh are employed. Governments and Private sector employment is the most common form of employment for survey graduates in Bangladesh.

The employment status of survey graduates can vary depending on several factors such as their qualifications, skills, experience, and the current job market. Generally, surveying is a specialized field, and survey graduates are in demand in several engineering sector, including construction, engineering, land development, mining, and government organization.

According to the U.S. Bureau of Labor Statistics (BLS), the employment of surveyors is projected to grow 2 percent from 2020 to 2030, which is about as fast as the average for all occupations.

A revolutionary change in the surveying profession has come in Bangladesh like other countries. Due to its continuity, the demand for surveying technology is increasing day by day for the development of the country. The demand for survey graduates is expected to increase as population growth and infrastructure projects drive the need for more accurate mapping and land surveying services. Survey graduates generally have good job prospects and can find employment opportunities in several industries, both in the public and private sectors. However, like in any other profession, job opportunities may vary based on location, economic conditions, and individual qualifications.

**Challenges:** Survey graduates in Bangladesh face challenges related to limited opportunities for career advancement and skills development. Gender disparities exist, with female graduates facing greater challenges in securing employment and career advancement opportunities. Challenges of survey graduates in Bangladesh may face is the lack of modern surveying equipment and technology. This can limit their job opportunities as some companies may not have the resources to purchase modern equipment. As a result, the types of jobs available to survey graduates may be limited.

Additionally, there is a lack of research and development funding in the surveying sector in Bangladesh. This may limit the availability of jobs that require advanced skills or specialized knowledge, which could affect the career prospects of survey graduates.

Overall, the employment challenges faced by survey graduates in Bangladesh included limited job opportunities, low grade salary in govt sector, a lack of modern technology and equipment, limited funding for research and development.

**Opportunities:** There are opportunities for survey graduates in Bangladesh, particularly in the Governments and private sector. Investment in higher education and skills development is needed to ensure that graduates are equipped with the skills and knowledge required to succeed in the job market.

In Bangladesh, there is a growing demand for survey graduates in various engineering sector such as construction, land development, mining, and government organization. The government of Bangladesh is one of the largest employers of survey graduates in the country. Directorate of Land Records and Surveys (DLRS), under the Ministry of Land, is responsible for land surveying and mapping activities in the country and employees a large number of survey graduates as land surveyors, Sub assistant engineers, Kanungo, sub surveyor, Computer and mapping specialists.

Private construction companies and engineering firms also employ survey graduates in Bangladesh. These companies require surveyors to carry out land surveys and mapping for construction projects such as roads, bridges, and buildings. Additionally, agriculture and mining companies also employ survey graduates to carry out topographical surveys and mapping.

The use of Geographic Information System (GIS) technology has increased in Bangladesh in recent years, and survey graduates with knowledge of GIS are in demand. GIS technology is used in various organization such as urban planning, environmental monitoring, and disaster management.

Overall, survey graduates in Bangladesh have good job prospects, with job opportunities in both the governments and private sectors. However, job opportunities may vary based on location, economic conditions, and individual qualifications.

### **Implication/ Recommendation in this Study**

Based on the findings of this study the following recommendations to prospectives governments, educator and policy makers: Therefor our recommend are as follows:

1. Graduates may benefit from governments job sector salary grades same as others diploma in engineering graduates, If the proper steps taken by the Government and policy makers.
2. survey institutes of Bangladesh have found that there is a huge shortage of teachers. To eliminate this, good quality training of teachers can be arranged at home/abroad.
3. If all survey Graduates included in NTVQF level Graduates may benefit from greater access to training and skills development programs to enhance their employability and career prospects.
4. Policymakers, educators, and employers should work collaboratively to develop and implement effective policies and initiatives to promote employment opportunities and support the transition of graduates into the job market purpose in Bangladesh.

5. Efforts should be made to reduce gender disparities in the Job market, including promoting equal pay, creating flexible work arrangements, and developing mentorship and networking programs for female graduates.
6. The findings suggest that there is a need for greater alignment between the skills possessed by graduates and the skills demanded by employers to enhance employability and career prospects.
7. Adequate job facilities are available for survey graduates in different government and private sector in Bangladesh and abroad.
8. Maximum respondents are unsatisfied about their job in govt sector because of low salary grade. If they get proper salary scale compared to others diploma Graduates in govt. job sector. They participate spontaneously to contribute infrastructural development of the country. If the government of Bangladesh should take proper steps to change the organogram of survey graduates in different job sector. Then, survey graduates will deserve their right pay grade.

For further research is needed to develop evidence-based strategies for improving the employment outcomes of survey graduates in Bangladesh. By addressing these challenges and promoting greater opportunities for survey graduates, Bangladesh can build a more skilled and productive workforce that contributes to the country's economic growth and development.

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