

**Report On**  
**Financial Feasibility Study of An Upcoming Real Estate Project of**  
**Elegant Group**

**By**

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**An internship report submitted to the**  
**BRAC Business School in partial fulfillment of the requirements for the degree of**  
**Bachelor of Business Administration (BBA)**

**BRAC Business School**  
**Brac University**  
**June 2021**

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## **Declaration**

It is hereby declared that

1. The internship report submitted is my own original work while completing degree at Brac University.
2. The report does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate referencing.
3. The report does not contain material which has been accepted, or submitted, for any other degree or diploma at a university or other institution.
4. I have acknowledged all main sources of help.

**Student's Full Name & Signature:**

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**Rayan Mahabub Chowdhury**  
17104222

**Supervisor's Full Name & Signature:**

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**Dr. M. Mujibul Haque**  
Professor & Associate Dean,  
BRAC Business School BRAC University

## **Letter of Transmittal**

Dr. M. Mujibul Haque  
Professor & Associate Dean,  
BRAC Business School  
BRAC University, BRAC University  
66 Mohakhali, Dhaka-1212

Subject: Submission of internship report on “**Financial Feasibility Study of An Upcoming Real Estate Project of Elegant Group**”.

Dear Sir,

With due respect, I am hereby submitting my internship report on Elegant Group as a requirement of the BBA Program of BRAC University. I have prepared the report with the help of your guidance and in accordance with the guidelines of BRAC Business School. I have briefly discussed my experiences working as an intern in Elegant Group and conducted a financial feasibility study on their upcoming real estate project.

I have tried my best to provide sufficient and supportive data needed for the report and hope that the report fulfils the desired requirements. Therefore, I pray and hope that you would be kind enough to accept my Internship report.

Sincerely yours,

---

Rayan Mahabub Chowdhury  
17104222  
BRAC Business School  
BRAC University  
Date: June 7, 2021

## **Non-Disclosure Agreement**

This agreement is made and entered into by and between Elegant Group and the undersigned student at BRAC University.

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Rayan Mahabub Chowdhury

## **Acknowledgement**

It has been a great pleasure working as an intern and preparing my internship report as per requirement for the degree of Bachelor of Business Administration. It would not have been possible without the continuous support and guidance provided by others, who have contributed in preparing my internship report.

Firstly, I would like to express my gratitude to Allah Almighty, for giving me the ability and capacity to finish my internship report. In addition, in providing me with the proper attitude and patience in completing my internship and preparing my internship report.

Secondly, I would like to express my gratitude to my Internship Supervisor, Dr. M. Mujibul Haque, Professor & Associate Dean of BRAC Business School at BRAC University for his continuous support and guidance during my internship. Sir has managed to provide me with support in preparing my report in the midst of his busy schedule and shown a lot of patience throughout.

Lastly but not the least, I would like to thank Ms. Tahsina Banu, Elegant Group CFO, for giving me the opportunity to work as an intern under her guidance and supervision. Moreover, I would like to express my gratitude for giving me the experience and also for helping me with proper information to prepare my internship report.

## **Executive Summary**

This internship report reflects my experiences as an intern in the finance department of the head office in Elegant Group. The report also discusses the overview of the company and my project **“Financial Feasibility Study of An Upcoming Real Estate Project of Elegant Group”**.

The report thoroughly analyzes the organizational structure of the company and its policies. Moreover, the report looks at the strategies implemented by the company in its operations. Financial performance of the company is analyzed and compared with past years performances. It will be seen that due to the covid pandemic, the company’s financial performance has been low compared to last year’s performance. Furthermore, a strategic analysis of the company has been conducted, exploring the company’s strengths, weaknesses, opportunities and threats. The company’s main strength has been observed to be its financial backing and its diverse business units and seems to be weak in implementing technology in its operations. As a result, facing threats from other companies who are technologically advanced.

The report extensively focuses on the financial feasibility of a real estate project by Elegant Group. It focuses on the financial aspects and implications of the project. Moreover, the project deals with the calculation of costs associated with the project as well as calculation of the area, sales amount, timeline etc. Keeping the Covid-19 pandemic in mind, the financial estimates and assumptions have been taken accordingly and conservatively by the company. With those estimates all the financial calculations (cost of debt, cost of equity, etc.) have been determined and then the cashflows have been calculated respectively. The net present value, discounted payback period and the MIRR have been calculated and the values have been favorable for the project. So, the project should be accepted. Lastly, but not the least a scenario analysis have been done to test the condition of the project in different scenarios based on the covid-19 pandemic.

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## **List of Acronyms**

RMG	Ready Made Garments
CFO	Chief Financial Officer
ESSL	Elegant Stock & Securities LTD.
NPV	Net Present Value
IRR	Internal Rate of Return
MIRR	Modified Internal Rate of Return

# **Chapter 1**

## **Overview of Internship**

### **1.1 Student Information**

I am Rayan Mahabub Chowdhury, a student of the BRAC Business School of BRAC University and my student ID is ID: 17104222. I started my undergrad program in spring 2017 and majoring in both Finance and Accounting.

### **1.2 Internship Information:**

#### **1.2.1 Period, Company, Department and Address:**

I got an opportunity to do my internship in Elegant Group. The company started as a ready-made garment (RMG) and apparels business and with growing success in the respective field, started different other business ventures/units in Financial Services, Real Estate, Retail, Trading and HealthCare.

The period of my internship was three months long starting from the month of February 10, 2021 to May 10, 2021. Moreover, my internship was situated in the head office with the Finance and Accounts department, under the supervision of the Group CFO. The head office is located at AJ Heights, Cha-72/1/D Progoti Shoroni, Uttar Badda, Dhaka-1212.

#### **1.2.2 Company Supervisor's Information:**

As discussed earlier, my internship was under the supervision of the group CFO, Ms. Tahsina Banu. She is the Group CFO and deals with the financial activities of the Group. Her role is focused more with the garments business but regularly advises and works with the financial activities of other business units with the managing director.

### **1.2.3 Job Scope:**

During my three month internship period, I had to assist the Group CFO in her daily tasks. As I was under the supervision of the Group CFO, my main role was to assist her in daily tasks. Those roles would include doing necessary data entry works, creating proper formats for processing information, preparing reports, communicating instructions to other departments, etc.

In my first month, I was introduced to colleagues working in the Finance and Accounts department and also with colleagues of other departments who had to work with the CFO. Moreover, the CFO explained to me my duties and her scope of work. I was given the responsibility to analyze and prepare reports regarding Elegant Stock & Securities Limited (ESSL), a financial service unit of Elegant Group.

During my second month, I was given tasks with the Finance and Accounts team, preparing proper format to collect and record all financial transactions of the group. Moreover, I assisted the CFO in forecasting budget by collecting all necessary financial information from departments and summarizing them in a format as instructed. My daily task was to prepare and analyze the reports made concerning clients' share value in ESSL.

During my last month, I assisted the Commercial Department in recording and preparing necessary forms regarding cash incentive to submit to banks and the BGMEA, to receive the cash incentive. I assisted the CFO in her daily tasks as per her need and continued my daily task of preparing necessary reports regarding ESSL. Moreover, I was also given the task to monitor and review work which was given to the Finance and Accounts team by the Group CFO. I had to report back to the CFO regarding the task's progress. Overall, my internship under the supervision of the Group CFO allowed me to get engaged with different tasks and responsibilities, which allowed me to gain experience and insight.

## **1.3 Internship Outcomes**

### **1.3.1 My Contribution to the Company:**

As discussed before, my internship was under the supervision of the Group CFO. So, I basically assisted her in her daily tasks. I helped her in gathering necessary information and preparing necessary reports per her need to make further decisions on financial issues. Moreover, I communicated her instructions regarding financial information or details to my colleagues in the Finance and Accounts department as well as other departments.

My most important contribution was analyzing clientele information of ESSL. I was asked to analyze the margin and share balance of every client (total of 200) in ESSL. As the Group CFO was always busy and engaged in other big tasks, she asked me to analyze and inform her of information of the clients, for instance, their status, whether they crossed their margin limit, etc. After one and a half months, I was given responsibility to communicate with the management in ESSL to inform them about certain clients' margin limits and to convey CFO's message of selling shares to minimize their margin percentage.

In conclusion, as an intern I contributed by helping the CFO in her tasks and help her ease the burden of her tasks. Moreover, I tried to help my colleagues in their tasks in any way possible and tried to gain experience.

### **1.3.2 Benefits to the Students:**

My internship in Elegant Group can be called as a fruitful experience. During my time there, I got to know about corporate culture and environment. Moreover, I learned how to prepare and summarize necessary financial information in a report and present it to the CFO. The Group CFO allowed me to assist and also supervise in tasks of the Finance and Accounts team helping



me to gain to necessary skills and experience. In addition, I learned many things and shortcuts in Excel while working the Finance and Accounts team.

During my time, I also got to learn the importance of some important human characteristics needed while working in companies like punctuality, sincerity, discipline, transparency etc. Another important thing I got to experience was to work under pressure. As Elegant Group has different businesses and a huge RMG business, their work schedule is always hectic. So, I got to work in such an environment.

### **1.3.3 Difficulties Faced During Internship:**

As discussed prior to this sub chapter, the head office had a busy and hectic work schedule. So, sometimes I had to work longer than the stated work time to assist the Group CFO. Moreover, as the company is a private company, they do not want to disclose much information. This led me to face much difficulties while writing my internship report as I had to work with whatever concise and little information they gave me about the company. Nonetheless, I enjoyed working in Elegant Group and gained important experience, which will help me in my future work life.

### **1.3.4 Recommendations:**

Working in these big companies is always a challenge. You will be able to learn a lot of new things and be introduced to new challenges. You will also have to work under pressure which will help you develop proper and necessary skills. I gained a lot of experience and knowledge during my time in Elegant Group. I have been able to make some important observations during my time there and so will be able to make some important recommendations.

The company needs to be more efficient in time management regarding their scheduling of events and tasks. Moreover, the company needs to integrate more technology in their work. That is, they need proper implementation of software which will enable them to conduct their task more efficiently and effectively. In addition, it will also help them to integrate all the

departments of the company. The company is understaffed at the moment and lacking many important higher management roles; which if hired, would help them conduct operations and business decisions more efficiently and properly. It would also help them to divide and properly assign tasks to the employees which would ensure productivity and discipline. It would also help to reduce the burden on the managing director, who has to oversee all the businesses and their operations.

## Chapter 2

### Company Part

#### 2.1 Introduction

In this chapter, I will be discussing about the company in which I had done my internship. I will be analyzing and assessing the way my company conducts its operations. Moreover, the company's management, marketing, financial practices will also be discussed as much as possible from the information I have been able to gather and have been disclosed to me.

The company in which I had done my internship is Elegant Group. I worked in the Head office of the respective group which oversaw all the operations of its respective business units. Moreover, my internship was under the supervision of the group CFO.

- **Objective(s):** The objectives of my report are:
  - i. To know about the company, its functions and the value it delivers to the market and its customers.
  - ii. To know about every aspect of operations and inter relation among all the departments of the company.
  - iii. To know how it conducts its different business units.
  - iv. To identify the strengths and weaknesses of the company.
- **Methodology:** In writing this chapter, I had used both primary and secondary sources. My primary source of information was the data I could gather from my respective supervisor i.e., the Group CFO. On the other hand, my secondary source of information were the articles I could find from the internet regarding my company. Moreover, I had

also taken help and collected information from the company's respective website in writing this particular chapter.

- **Scope:** The scope of the report, basically for this particular chapter, is to know and have a clear picture about Elegant Group. The business of Elegant Group, what it does, how it performs, its hierarchy structure, its human resource management, marketing practices, financial practices, operations, etc. are covered in the report. Moreover, the company's corporate culture and its working conditions are also discussed. Furthermore, a SWOT analysis will be conducted to analyze the company's strengths and weaknesses. It is also to be noted that, as Elegant Group is mainly focused on Garment's sector and its head office mainly deals with all activities concerning the RMG business, the report covers mainly the RMG business unit.
- **Limitation:** I had faced some problems and limitations while preparing this report in terms of collecting information. Firstly, internal information is not shared to an intern at a significant amount. Information shared is rather much general than concrete or significant. Secondly, due to the Covid-19 pandemic the country had imposed lockdowns which did not allow to go to the office and work; rather to be restricted within our homes and to work from home. This had played a part in not being able to know and gather much proper information. Lastly but not the least, my supervisor **had** contracted and tested positive for Covid-19, which further acted as a barrier to communicate and know about the functions and strategies of how Elegant Group works.
- **Significance:** The significance in preparing this chapter for the report cannot be avoided or overlooked. Even though, general information about a particular company or company can be found from the internet or from different news articles; preparing

this chapter has helped me know about the company I have worked in. It will also help me to create a proper picture and form proper views or opinions about the company.

## **2.2 Overview of Company:**

### **2.2.1 Introduction to Elegant Group:**

Elegant Group was founded in 1995, starting its journey as a fashion manufacturer. Achieving success, it started to grow and spread its business globally in countries like, Spain, UK, USA, U.A.E, Turkey etc. dealing with customers like Primark, Pep & Co, etc. As the group started to become sustainable in the Garments and Apparels Sector, it started to diversify its business and venture into other sectors like Banking and Financial Service, Hotels, Real Estate, Retail Chain Stores as well as Power & Energy Sectors. Currently, the group has an approximate asset value of more than 2000 crore taka, with the garments and apparel sector alone possessing about 1,800 crore asset value. Moreover, the garments and apparel business unit boast an average turnover of 1000 crore Tk over the last three years. The company's manufacturing and distribution network boasts a capacity of over 5.5 crore pieces of garments and 30 lakh yards of denim every month.<sup>1</sup>

Due to its strict adherence to business ethics and corporate sustainability, the company has been able to shine in the market and attract big name clients for its garments business like Target, Max, Walmart etc. to name a few. Elegant Group has always been committed to provide quality good and always strive towards achieving customer satisfaction. This mantra has not been constricted only within its Garments and Apparels Sector but across its diverse business units.

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<sup>1</sup> <http://www.elegant.com.bd/company/>

And for this reason, Elegant Group has been able to achieve success and maintain sustainability, allowing them to continue strong for the last 25 years and growing in the future.

### **2.2.2 Mission and Vision of Elegant Group:**



*Figure 1: Logo of Elegant Group*

Mission: “Always provide excellent and quality products and services that exceed our customer’s satisfaction.” Elegant Group are constantly striving for excellence and their full commitment in business is aimed at achieving economic success.

Vision: As elegant-group transcends multiple industries, our vision is to utilize the best practices from the industries; to be creative in the way we approach our goals. With fostering strong bonds with our customers, suppliers and employees, we want to be the leading company in the different industries.<sup>2</sup>

The mission and vision clearly show Elegant Group’s commitment to provide and serve its customers with quality driven goods and services as well as strive to become a big player in the economy of the country.

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<sup>2</sup> <http://www.elegant.com.bd/company/#our-mission>

### 2.2.3 Values of Elegant Group:

Elegant Group revolves their whole company and its operations based on five core values. They have adopted these values in providing goods and services across their independent business units. They are:

**i. Integrity with Ethics:** Elegant Group conducts their business and their operations maintaining the highest level of ethics towards their business partners, employees, customers and the community.

**ii. Commitment to our Customers:** Elegant Group focuses their work and spends their time to deliver the utmost joy and satisfaction to their customer through their products and services. They measure their success through the positive feedback and satisfaction of the customers.

**iii. Teamwork:** Elegant Group believes in everyone having an ownership mentality, they want our employees to make an impact on the group. They achieve that through good communication and collaboration in order to develop new ideas to further improve their business.

**iv. Striving for better:** Elegant Group always thinks forward and not on the short-term effect of their decisions. In elegant group, they push themselves to enhance their goods and services that they provide; in order to be the leading company.

**v. Social Responsibility:** Elegant Group also focuses on helping and improving the communities where they work. They commit to the idea of sustainability; always implementing a business strategy that considers of ethical, social, environmental, cultural and economic spheres of the business.<sup>3</sup>

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<sup>3</sup> <http://www.elegant.com.bd/company/#our-values>

## 2.2.4 A Short Look of the Different Business Ventures of Elegant Group:

1. **Garments and Apparels:** Elegant Group started its journey in 1995 as a fashion manufacturer. It started to create an impact in the RMG and Apparel sector and started to vertically integrate its business which provided ultimate optimization and full control over its supply chain. This also helped to create a standard value in their products and design their products in such way meeting the needs and desires of their customers. As a result, they have Elegant Group have been able to expand their business not only locally, but also globally, providing garments in countries like USA, UK, UAE, Spain, Indonesia Turkey and Singapore. Their current asset value of the Garments and Apparels is almost around Tk 1800 crore. Moreover, their average turnover for the last three years has been around Tk 1000 crore. Elegant Group boasts of a big and famed clientele providing garments to namely Primark, Walmart, H&M, Target etc. to name a few.

The different garments and apparels factories and businesses are shown below:

i. **Cassiopea Fashions Limited:** This was started in the year 1995 and its office is situated at Sreepur of Gazipur. It provides different basic styles to fashion items like yarn types, prints, and embellishment all of the products.



*Figure 2: Logo of Cassiopea Fashions LTD.*

ii. **Cassiopea Apparels Limited:** It started its journey in the year 2007 and situated at Bokran Monipur, Vobanipur, Mirzapur, Gazipur.



*Figure 3: Logo of Cassiopea Apparels LTD.*



**iv: Cassiopeia Clothing Limited:** This was started in the year 2012 providing clothes items like men's, women's and child's wear and many more.



*Figure 4: Logo of Cassiopea Clothing LTD.*

**vi: Cassiopea Sweaters Limited:** This was established in the year 2017 and is also export-oriented. It is situated at Joydebpur of Gazipur district.



*Figure 5: Logo of Cassiopea Sweaters LTD*

**viii: Dong Bang Facilities:** It was established in the year 1999 and provides fashionable and designer garments. It is run under South Korean management and maintains to produce top quality south Korean garments. It is situated at Dhaka Export Processing Zone (DEPZ), Savar, which is 50 kms away from Hazrat Shahjalal International Airport. <sup>4</sup>



*Figure 6: Logo of Dong Bang Facilities (BD) LTD.*

**2. Spinning & Textiles:** Elegant Spinning and Textiles was founded at 2008. It manufactures classic, fashion and technical yarns for the knitwear & weaving industries as Readymade

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<sup>4</sup> <http://www.elegant.com.bd/garments-apparels/>

garments, cotton, yarn, silk and other synthetics, wool, hosiery products and rubber goods. They are situated at situated at Ishwardi Export Processing Zone Authority Zone, Pakshi, Ishwardi, Pabna. Its production capacity is about 36 million yards of quality denim with weaving & finishing and 18 million yards of seasonal twill with weaving & dyeing annually.<sup>5</sup>

**3. Financial Services:** Elegant Group has about three different financial institutions in the financial sector providing the people with financial services. They are:

**i. Meghna Bank Ltd.:** It is a fourth-generation bank, starting its journey in the year 2013. It provides the conventional banking services to people. Moreover, it provides both personal and business banking services.

**ii. Meridian Finance:** This financial institution was established in the year 2015, providing customers with a wide range of financial services to consumer, corporate, and SMEs.

**iii. Elegant Securities Ltd.:** This institution acts as a stock broker and provides services related to stocks in the Dhaka Stock Exchange. It was established in the year 2017.

**4. Retail:** Lavender Convenience Store is one of the first super shops in Bangladesh. It was started in the year 1998 and has been one of the leading super shops in the country. It has two branches situated at Gulshan-2 and Shahjadpur in Dhaka and provides standard day to day goods and products to customers.<sup>6</sup>



*Figure 7: Logo of Lavender Retail Shop*

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<sup>5</sup> <http://www.elegant.com.bd/spinning-textiles/>

<sup>6</sup> <http://www.elegant.com.bd/lavender-convenience-store-limited/>

**5. HealthCare:** It is a joint owned Thai Bangladesh diagnostic center which will be situated at Uttara, Dhaka. Its construction has yet not been completed.

**6. Power & Energy Trading:** Another business which is yet to be started in full swing, Elegant Coal and Mining is expected to start its operations by the end of the year 2021. Apart from this Elegant Group owns PT. ARKCO GLOBAL ENERGI, an Indonesia based coal & minerals supplier company. This company exports thermal coal globally adding to the success of Indonesia as being the world's top exporter of thermal coal.<sup>7</sup>

**7. Real Estate:** Elegant Construction Company Ltd. develops, redevelops, acquires, manages, and owns a diverse portfolio of real estate properties. It has constructed/developed more than 100 office properties (including three properties under construction/redevelopment), Chain Super Stores in Bangladesh and two hotels situated in Indonesia.<sup>8</sup> Moreover, its new real estate project is subject to my study of my internship report which has been discussed in detail in chapter 3.

In addition to Elegant Construction Company Ltd., PT. Arkco Mega Raya is also a business unit of Elegant Group, operating in Indonesia. It helps to construct and develop both residential apartments and offices in Indonesia.

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<sup>7</sup> <http://www.elegant.com.bd/power-energy/>

<sup>8</sup> <http://www.elegant.com.bd/real-estate-property/>

### 2.2.5 Social Responsibility:

Elegant Group has set up a philanthropic foundation named “Abinta Kabir Foundation” on 5<sup>th</sup> March, 2017. The foundation works to help the underprivileged and create better opportunities



*Figure 8: Logo of Abinta Kabir Foundation*

for the ones who are in need. Moreover, the foundation has started projects creating the Abinta Kabir Foundation School which helps to provide educational facilities to underprivileged girls. Other great projects include social and environmental projects, financial aid and scholarships to meritorious underprivileged students, relief funds affected by disasters as well as the recent Covid-19 pandemic etc.<sup>9</sup>

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<sup>9</sup> <https://www.abintafoundation.org/>

## 2.3 Management:

### 2.3.1 Organizational Structure of Elegant Group:

The group managing director Tanveer Ahmed manages the whole group and is the top decision maker regarding all the different business units of Elegant Group. It was under his leadership in 1995 that Elegant Group started as a fashion manufacturer and has since risen to these great heights and continuing to grow.

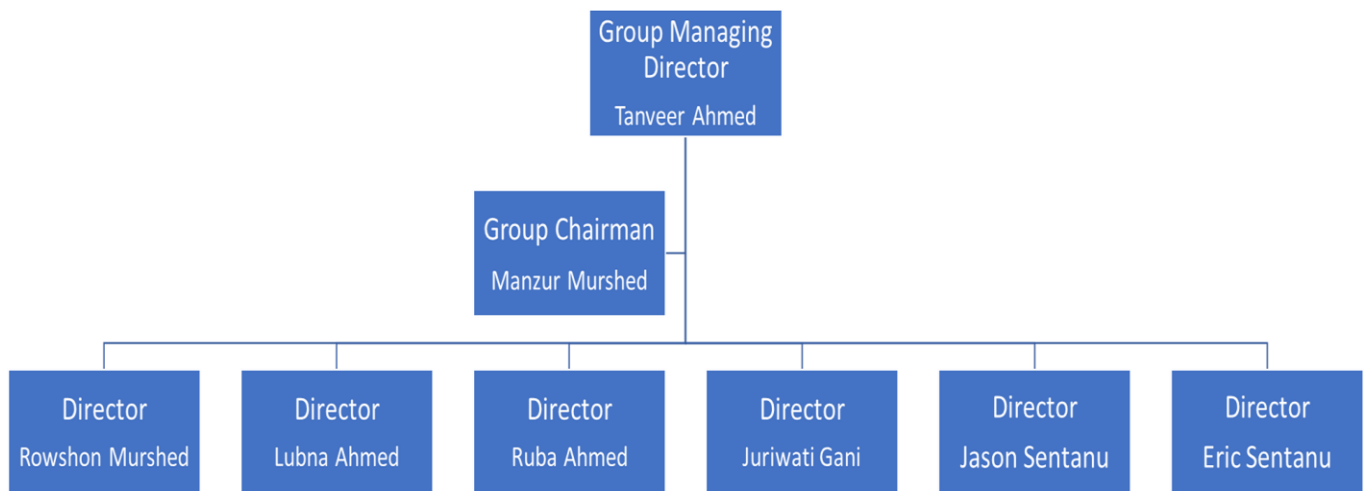
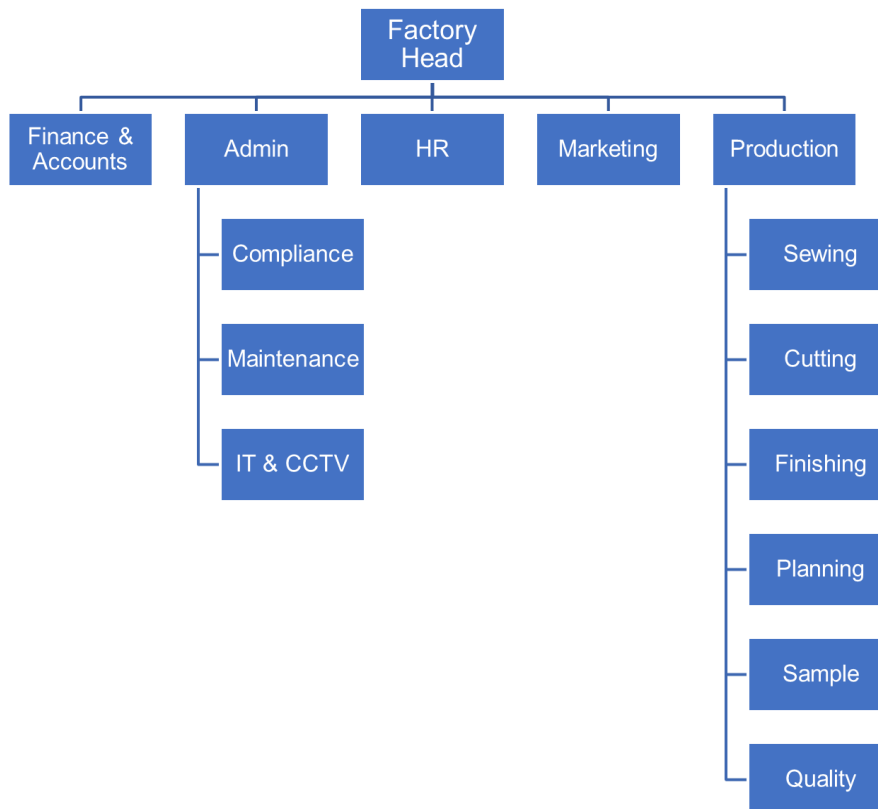


Figure 9: Organizational Structure of Elegant Group

Moreover, each business unit has its own separate top management structure, which is structured under the strict supervision of the group managing director. The organizational structure varies according to the type of business it is for instance real estate, financial institution etc. At the moment, the group lacks a distinct Group CEO, CTO and CSO; although it has a Group CFO who heads the Finance department of the group.

### 2.3.2 Organizational Structure of Garment Factories of Elegant Group:

I could get some information regarding the organogram of the garment factories, although I did not have the full information regarding specific roles and lines of command. In addition, I could get hold of the information regarding the departments present in the garment factories.



*Figure 10: Structure of Elegant Group Garments Factories*

This is the general structure of the garment factories owned by Elegant Group. The factories are supervised under one main head. Under his supervision, there are five main divisions of which Admin and Production has further departments. Each division's employees are categorized in two types. They are

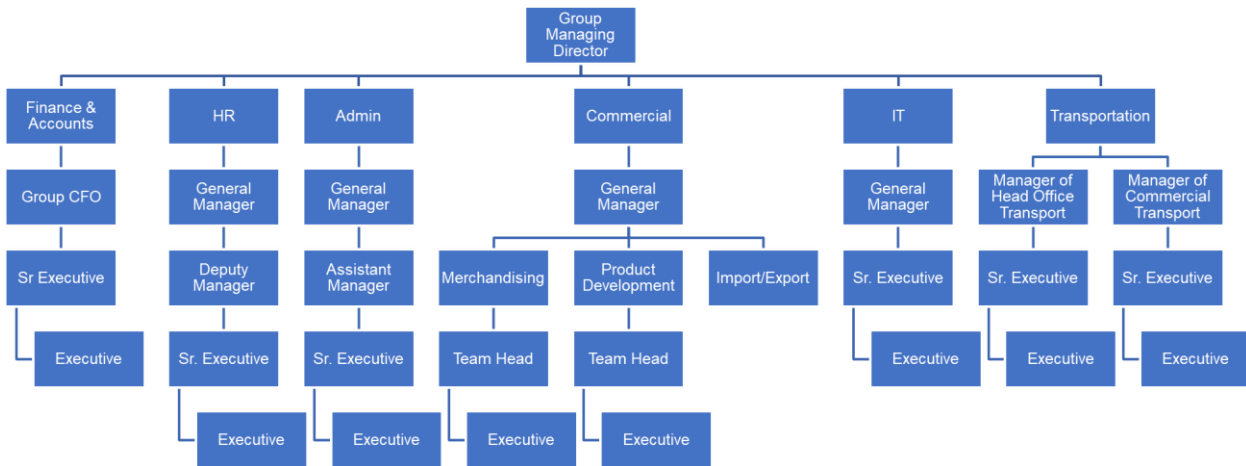
**i) Staff**

**ii) Worker**

Most of the workers are employed in the Production division and stationed under the different departments like Cutting, Sewing, Quality, Finishing, etc. Moreover, these workers are supervised under the different line managers of the respective departments. The staff employees occupy the higher roles and carry out those technical and supervision functions of the factory. All of the division heads report to the factory head who ultimately reports to the group managing director.

### 2.3.3 Organizational Structure of Head Office of Elegant Group:

My internship was in the head/corporate office of Elegant Group. As discussed, it was under the supervision of the Group CFO. The organizational structure of the head office is shown below:



*Figure 11: Organogram of the Head/Corporate Office of Elegant Group*

It can be seen that, there are mainly 6 main divisions in the head office. They are:

- I.** Finance & Accounts
- II.** Human Resources
- III.** Admin
- IV.** Commercial
- V.** IT
- VI.** Transportation

It can be understood from the organogram that the company is a little understaffed at the moment due to which the structure of the departments is lacking some roles. Moreover, the work process is also skipping some roles and thus directly falling under the responsibilities under the lower positions of the departments. In addition, as the company is more garments focused and oriented, thus divisions like transportation and commercial are identified as major divisions of the head office. These divisions play a huge part in the operations of the group. Currently, the group is looking to fill in the missing roles of the departments, to create a more efficient and stable work process flow in the respective departments. All the heads of the divisions report to the Group Managing Director.

#### **2.3.4 HR Management Practices:**

The HR department is a crucial department for every company and works for the well-being of the employees. The HR department in Elegant Group is also not indifferent to this cause. The department deals with the HR issues of the head office as well as issues of the garments sector for instance, payroll, maintaining rules and policies etc. The general manager keeps in touch with the HR department of the garment factories and deals with any issues which arise and need higher authority intervention. The deputy manager also assists the general manager in these matters but one of his main duties is to deal with the human resource responsibilities of the head office. The deputy manager alongside the executives works on the recruitment process, payroll, training and development and other human resource related matters in the head office.

**Rules and Policies:** Elegant Group maintains proper time table regarding work hours. They set the time of work from 9 am to 6 pm. Moreover, they allow up to three late days for employees who come to the office late. After that they fine the employees. The HR department also allows up to 14 sick days leave and at best a three days duration leave for other purposes



for instance, employees taking a vacation etc. In addition, the HR department makes sure the employees get their salaries within the first week of the month. The first week of the month is a hectic day for the HR department as they have to work with the payroll of the employees of both head office and the garment factories. They have to ensure accurate information regarding payroll of all the employees and also ensure their proper distribution. Furthermore, the HR department is in charge of creating job benefits and bonuses. They have to ensure that they are relevant and will have to design them in such a way that will help the employees be motivated. The HR department also has a strict harassment and discrimination policy. Anyone breaking it will receive punishment regarding the act.

**Recruitment Process:** The deputy manager takes the responsibility of the recruitment process. He is made known by the heads of the other divisions if they are in need of recruiting new members. He later creates the job vacancy post in collaboration with the heads of the division. This is because he notes the required job responsibilities and duties from the respective heads. After that, he posts it in different job sites. Moreover, he also tries to make it known through his connections about the job vacancies and whether they can provide him with a suitable candidate. Sometimes, the respective head of a division also lets him know about a suitable candidate from their own connections. In this way, he starts the recruitment process and collects the CVs. The executives assist him in this matter and help him sort out the CVs which meet the criteria set by the respective head of the department. He sets up the interviews after having discussions with the respective head about his/her free time and then inform the candidates their interview time.

**Interview and Selection:** At first, the selected candidates are interviewed by the respective heads of the department. If they are liked by the respective heads, then the candidates are interviewed by the deputy manager who checks their job experiences, qualifications and other introductory matters. Moreover, the deputy manager runs a background check on the

candidates and even checks with their past employers. After everything goes well and seems positive, the candidates are further interviewed by the respective head of the concerned department, alongside the group managing director and the general manager of the HR department. It is to be noted that, this third stage of interview session is only conducted during recruitment of higher job positions in the company. For lower roles, the interview is completed in the second stage and if all criteria are met, the candidate gets selected.

**Recruitment and Training:** After the candidates meet the criteria, they are given an offer letter and given a week or two for signing. This is based on the urgency of the company for new recruits. Moreover, for higher roles, they are given at best a month for signing since the candidate may need time to complete his/her leaving job responsibilities in his/her previous job.

The candidates are kept in probation for a month or two at best based on their experience after selection. During this time, they are introduced to their roles and responsibilities. Moreover, some of them are given training regarding some newer job responsibilities. After the probation period, the employee starts working in his/her job on the regular job contract he/she had signed prior to his/her recruitment to the company.

## **2.4 Marketing Practices of Elegant Group:**

Elegant Group does not have a specific marketing department as seen in the organogram of the head office. Moreover, we said that the group is more garments oriented and its main focus is in the garments sector. In addition, the head office of the group mainly deals with all the operations and functions of the garments business. As I could gather some information from my supervisor regarding the marketing process of the garments business of Elegant Group, I will be discussing about them.

The marketing procedures and strategies are carried out by the merchandizing department of the commercial division. Moreover, the commercial division plays a role in the marketing process of the company. For more efficiency and to take the advantage of proper marketing strategies and plans, the company is looking to hire a marketing agency for their garments business.

The marketing process of the company in regards to its garments business can be explained by the 7Ps of marketing. They are discussed below:

**Product:** As discussed earlier that the merchandizing department plays a role in the marketing process of the company. They contact with the local and foreign clients regarding their order of garments. The merchandizers record their order size, design, style, type etc. and notify it to the factories. Moreover, the merchandizers also promote other garment products to the clients as well as influence them to buy more. This is also done by giving them certain discounts or promotional offers to attract them to buy more garments. The merchandizers constantly communicate with their clients and the people in the factories, to make sure the product is manufactured accordingly to the client's needs. They also make sure the order is manufactured and delivered in the agreed date. The company has been able to ensure quality products and services and for this reason their clients include big names like Dunnes, Boohoo, Walmart, Target, Primark etc.

The product design department also plays a major role in terms of marketing. They continuously try to modify and design newer garment styles which are relevant and attractive to the clients. Moreover, they also check and design the current styles concerning specific orders from clients. The product development team ensures proper products are being shipped to the customers.

**Place:** Elegant Group has built their factories in such places, which has helped them to distribute their product orders quickly all around. They have placed their factories in strategical places, which has helped them to distribute quickly to both locally and globally. The commercial division works closely with the transportation division to ensure this.

The transportation division communicates with the commercial department regarding orders and schedules transports effectively and efficiently. The company has its own supply of trucks which help them to carry products to the ship terminals from the factories. The ships then carry these products to the foreign clients.

**Price:** Elegant Group has been able to distribute and sell their garments products at a lower price than their competitors. This can be justified because of the clientele Elegant Group possesses which include Primark, Dunnes, Boohoo etc. If prices were higher or not worth the products, these clients would not have continued business with the company.

**Promotion:** As discussed earlier, the merchandizing department offers promotions to the clients, which helps to bring customers back. Moreover, loyal customers are provided with certain offers and discounts, creating a positive and healthy relationship between company and customers.

Currently, the company is looking to hire a marketing agency to attract and get more customers more globally.

**Physical Evidence:** Elegant Group has built a legacy of 25years up to date and is still continuing strong. Started from 1995, the company has been able to achieve success, not restricted to local but also global. Their clientele justification of their achievements and success.

**People:** The managing director started this whole company and business all by himself. As a result, he takes care and looks after it with the utmost care. He supervises and looks after all

the operations of all the different businesses. Moreover, he takes care of the employees who play a huge role in the operations of the company. The company has been notable for providing proper customer service which has helped them to keep on attracting orders from big name clients like Primark, Dunnes, Boohoo etc. So, it can be said the company pays heed and takes care people of the company.

**Process:** The whole process of manufacturing and delivering the product takes a combined effort from different departments. In this case, the commercial division alongside the transportation division play a role in taking orders of products and delivering it. The factories work as the middle men, as they take in orders from the merchandizer, manufacture them and then hands it over to the transportation people for delivery. These three always have to maintain proper communication and efficient work handling.

## **2.5 Financial Performance and Accounting Practices of Elegant Group:**

### **2.5.1 Financial and Accounting Practices:**

The finance and accounts department of Elegant Group in the head office play a very crucial role in the company's financial operations. The division, led by the group CFO, has to maintain and perform financial functions regarding the different business of the company. The different roles and functions are described below:

**Group CFO:** The group CFO has to handle day to day financial responsibilities of the company as a whole. She has to manage and supervise financial operations of all the businesses of Elegant Group. Moreover, she to prepare annual budgets which are then distributed throughout the company's businesses. All the financial actions, ranging from small, like buying of cleaning materials for office, to big, like taking loans for investment or preparing annual reports etc. are done with the approval and guidance of the Group CFO. The managing director and the Group CFO discuss on meeting regarding big financial issues. In addition, she creates

plans for financial sustainability and how the company can grow making more revenue and incurring less expenses. The group CFO ensures proper accountability and has created a strict framework where all financial activities are properly recorded and documented as well as done after getting the required approval from her.

**Commercial:** The commercial plays a role in the financial performance and activities of the group. The commercial division helps in recording the import/export details and deals with issues regarding payment of tax, payments regarding trade like UD etc. The commercial department helps the financial department in conducting these activities and helps the accounts team in recording this important financial information.

**Accounts Team:** The accounts team of Elegant Group in the head office plays a role similar to that of HR. They have to maintain records of accounts of both head office and other businesses. Mainly they deal with the garments business but also play a key role in recording and maintaining accounts of other businesses of the company.

In the accounts team, some employees are given the responsibilities of recording and documenting the accounts related with trade. They have to constantly communicate with the commercial team to maintain these accounts.

The accounts team also have to record and prepare daily bank statements. In addition, they have to properly monitor their accounts in different banks. Moreover, they have to continuously update their accounts details regarding payment of loans, interest, payment of certain expenses, receiving money from sales, etc. That is, all the account information is dealt by the accounts team, which is obviously conducted under strict supervision of the Group CFO.

The accounts team deals with the payment of expenses in two ways. In the accounts team, two employees deal with these functions. One of them issues cheque and records them separately while the other employee pays with cash account and also records it separately. Both of them

record these activities and transfers these records with the accounts team who record them in the daily financial and accounting operations. This is how the whole financial and accounting division functions every day.

**Management Information System:** The company lacks use of proper accounting information software but they are planning to set up and integrate software in their daily financial and accounting operations. They are planning to integrate the whole financial and accounting functions so that recording and maintaining accounts becomes easier and efficient. Moreover, it will also help them to monitor and work quickly. It will also help them to make the flow of information accurate and faster. That is, financial activities done in other departments like HR, Admin etc. can flow quickly to the accounts team, helping them to conduct their work more efficiently and quickly.

At present, the company has started using the Tally Accounting software to record the financial information.

### **2.5.2 Financial Performance of Elegant Group:**

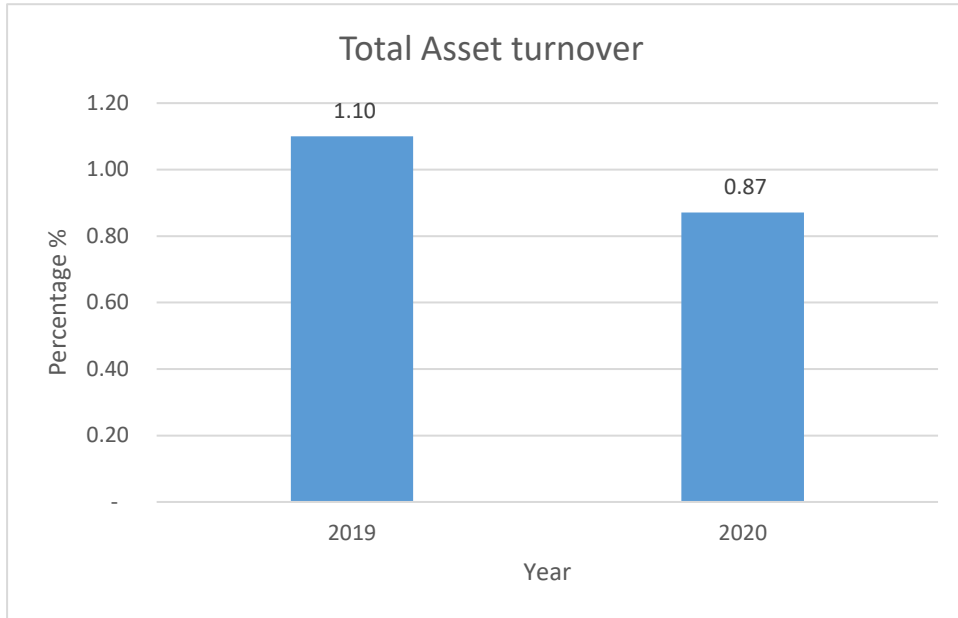
In this sub chapter, I will highlight the financial performance of Elegant Group's Garment's business based on the information I could collect and have been provided to me by my supervisor. It is to be noted that, I was provided with only some key financial highlights like total assets, liabilities etc. instead of the full financial statements (Appendix A). In addition, as an intern they did not want to provide me with the full financial statements. Moreover, I was allowed with only information based off two years (2019 & 2020). I have tried to analyze the financial performance using relevant financial ratios based on the limited data I could gather.

#### **Total Asset Turnover:**

Total asset turnover shows how efficiently a company uses its assets to generate revenue. It is calculated by dividing the total sales by average total assets.

<b>Year</b>	<b>2019</b>	<b>2020</b>
<b>Total Asset Turnover</b>	<b>1.10. times</b>	<b>0.87 times</b>

*Table 1: Total Asset Turnover of RMG Business of Elegant Group*



*Figure 12: Chart of Total Asset Turnover of RMG Business of Elegant Group*

From the above table we see that, the total assets turnover decreased from the year 2019 to the year 2020. The obvious reason for the decline is for the Covid-19 pandemic. Due to the pandemic and lockdowns in different countries as well as in our country; has forced lower sales. This has contributed in the decline of the total asset turnover.

**Total Debt to Total Asset Ratio:**

For this ratio, the total liabilities are divided by the total assets. This ratio indicates how much the business is financed by debt.

<b>Year</b>	<b>2019</b>	<b>2020</b>
<b>Total Debt to Total Assets</b>	<b>29.8%</b>	<b>50.75%</b>

*Table 2: Total Debts to Total Assets Ratio Business of RMG of Elegant Group*



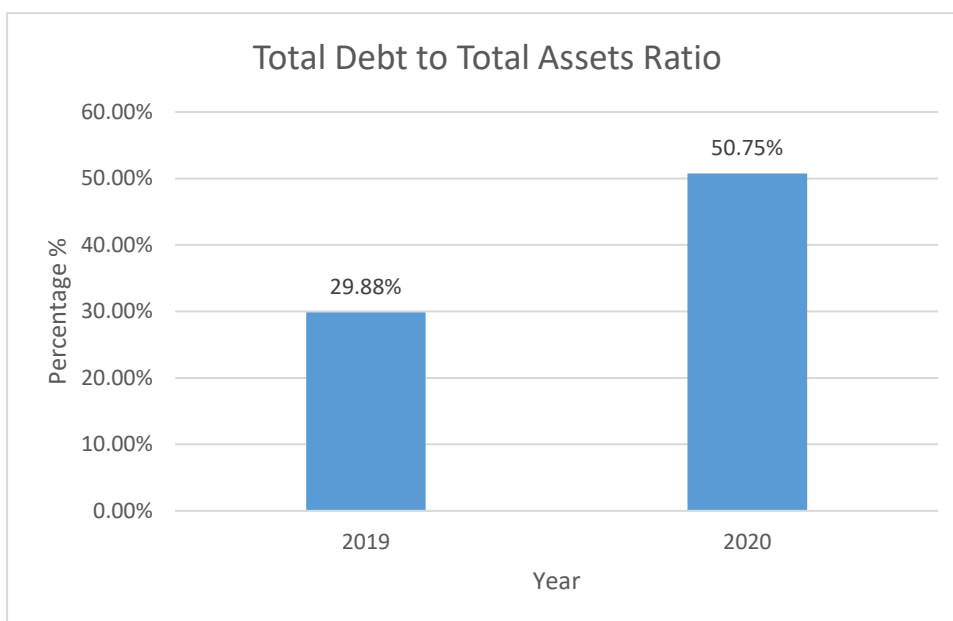


Figure 13: Chart of Total Debt to Total Assets Ratio of RMG Business of Elegant Group

It can be seen that, the total debt to total assets of the company is low in general. That is, the company is not in much risk of debt and its total assets are not much funded by debt. As a result, investing in the company does not pose much of a risk. Moreover, it can be seen that the total debt to total assets ratio increased to almost double of what it was in the year 2020 compared to the year 2019. Covid-19 pandemic is once again to blame as all businesses were affected resulting in lower sales and more losses. As a result, debt increased which contributed to increase of total debt to total assets ratio in the year 2020.

### Net Profit Margin:

This ratio simply shows the percentage of net profit of its revenue. That is, how much profit is earned of every TK of revenue.

Year	2019	2020
Net Profit Margin	6.80%	4.03%

Table 3: Net Profit Margin of RMG Business of Elegant Group

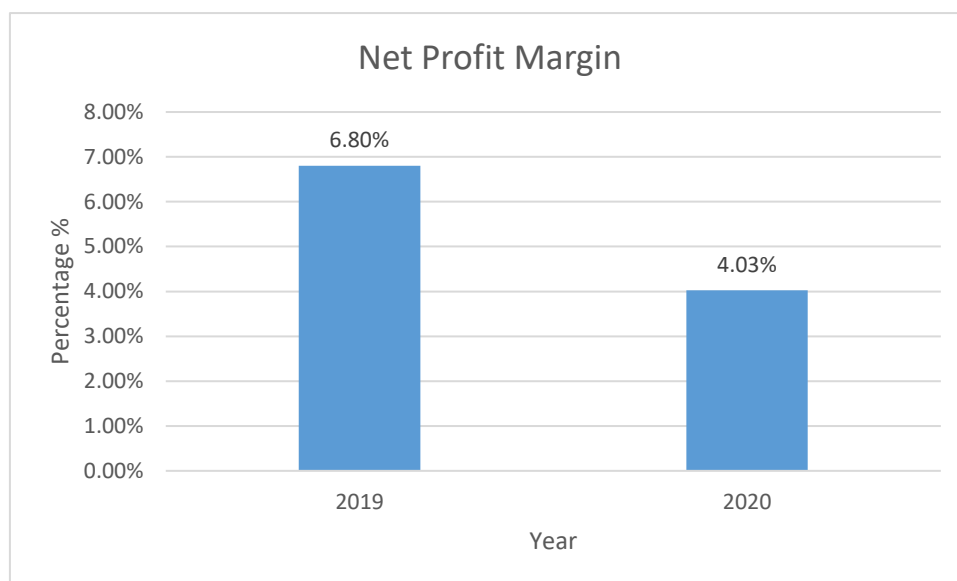


Figure 14: Chart of Net Profit Margin of RMG Business of Elegant Group

In the above case for year 2020, it can be said that for every 100 Tk earned by Elegant Group, 4.03 Tk profit is earned. It can be seen that, the company's net profit is low in both case for the past two years. Moreover, the net profit margin has decreased from 2019 to 2020. As stated for earlier ratios, increasing expenses and losses has contributed to lower profit margins from decreasing sales due to the Covid-19 pandemic.

**Return on Asset:**

Return on Asset (ROA) is key financial ratio and shows how much a company earns returns from each Tk worth of asset. Effectiveness of turning assets into profits can be understood from this ratio. That is, High ROA will indicate high profit with less investment.

Year	2019	2020
ROA	7.49%	3.51

Table 4: Return on Asset Ratio of RMG Business of Elegant Group

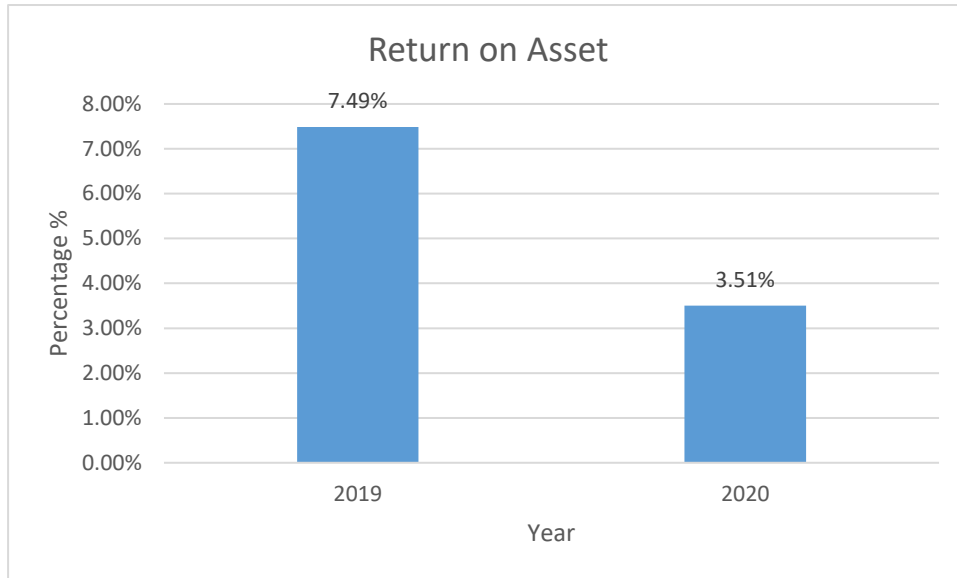


Figure 15: Chart of Return on Asset Ratio of RMG Business of Elegant Group

The same scenario has been seen in terms of all ratios. The ROA is no exception, as it can be seen that it is lower in the year 2020 compared to the year 2019.

### **Return on Equity:**

Return on Equity (ROE) is a financial ratio which helps to measure how much a company earns from each Tk of equity i.e., shareholder's equity. A good ROE ratio can only be judged by comparing the average ROE of a company with its peers in a particular industry.

<b>Year</b>	<b>2019</b>	<b>2020</b>
<b>ROE</b>	<b>10.68%</b>	<b>7.12%</b>

Table 5: Return on Equity Ratio of RMG Business of Elegant Group

The same scenario has been seen in terms of all ratios. The ROE is no exception, as it can be seen that it is lower in the year 2020 compared to the year 2019. Due to the pandemic, the company had to use more of its equity to cover the costs and expenses. Moreover, with less profit the ROE also is seen to be lower than the year 2020.

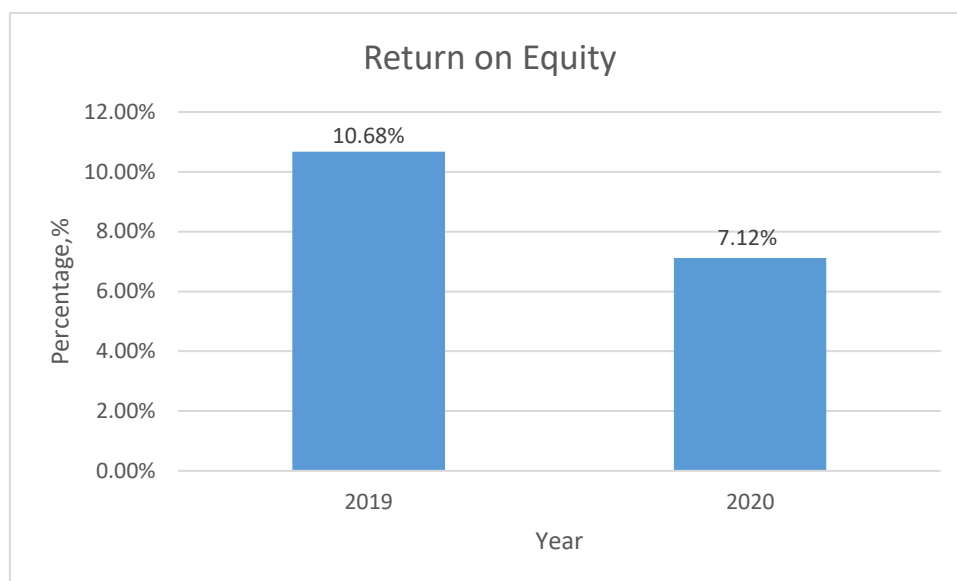


Figure 16: Chart of Return on Equity Ratio of RMG Business of Elegant Group

### Du Pont Equation:

Du Pont's equation breaks down the ROE and looks closely to how the drivers of ROE affect the ROE of a company. According to DU Pont, the three drivers of ROE are net profit margin, asset turnover and equity multiplier/financial leverage. They are calculated as below:

Year	2019	2020
<b>Net Profit Margin</b>	<b>6.80%</b>	<b>4.03%</b>
<b>Total Asset Turnover</b>	<b>1.10</b>	<b>0.87</b>
<b>Equity Multiplier</b>	<b>2.03</b>	<b>1.43</b>
<b>ROE</b>	<b>10.68%</b>	<b>7.12%</b>

Table 6: Calculation of Du Pont's Equation

According to Du Pont's equation,  $\text{Net Profit Margin} \times \text{Total Asset Turnover} \times \text{Equity Multiplier}$  (Total Assets/Total Equity) = Return on Equity (ROE).

From the above table, we can see that the multiplication of the three drivers is equal to 10.68% and 7.12% in 2019 and 2020 respectively. The ROE found from its formula also amounted to these figures. So, the value of ROE matches.

### **2.5.3 Analysis & Feedback on the Financial Performance of Elegant**

#### **Group:**

In conclusion, it can be said Elegant Group's financial performance regards to the Garment's business has been positive. Although, some key figures like sales, profit, assets have decreased in the year 2020 for which the ratios have declined but they are not in a danger position or risk of failure. This is because of their proper handling of the garments business. It was seen from the above ratios, that the company's operations are not run by even 50% debt, which indicates positive asset management. Moreover, the company does not have too much liabilities to worry about and are using their assets to generate enough revenue.

As the Covid-19 Pandemic starts to improve and economic conditions around the world are starting to gain pace, Elegant Group can bounce back from their obstructed performance in the year 2020 and improve their overall financial performance.

### **2.6 Operations Management and Information System Practices of Elegant**

#### **Group:**

It was pointed out prior to this chapter and observed in the organogram that, Elegant Group do not have Group COO or CSO. All the decisions regarding new strategies or designing of operations are taken by the group managing director alongside other members of the members of management of the group. Moreover, the head office does not have a separate operations division. In terms of operations regarding the garments business, the commercial division takes responsibility for performing the tasks.

The commercial division is seen to be divided of three departments, the import/export, product development and merchandizer. The roles of the product development and merchandizing department have been described in details in previous chapters. Their roles can also be counted as functions in the operations. The import/export department play a much more role regards operations. They monitor and keep track of orders going from factories to customers properly and timely. They design the process of movement of products to their customers. In addition, they have to constantly monitor and track the orders until they reach their customers. The import/export department have to prepare the necessary documents for the products for instance, payment order, bill of lading, UD etc. when they are sent to global customers. They have to also communicate with the transportation department regarding transferring of products from the factories to the terminals/ports and vice versa. So, the import/export play a major role in the operations of the garments business.

Elegant Group has a separate IT division in the head office. The IT division helps to connect the computers of all the employees together. They help set up office mail address for the employees and provide them with all the necessary software in their working computer. Moreover, they help with all IT related issues in the head office. During meetings with global clients, they need to set up those meetings and establish a proper network and internet connection. The IT division also monitors the official website of the group and helps to update it regularly. As the company is looking to transform its operations in a more technological way, the IT will play a major role in this regard.

## 2.7 Industry and Competitive Analysis:



*Figure 17: SWOT Analysis*

I have conducted a SWOT (Strength, Weaknesses, Opportunities, Threats) Analysis of Elegant Group based on what information I could collect during my short time as an intern in Elegant Group. Due to limitations regarding key internal information, the analysis has been conducted rather generally.

### **SWOT Analysis:**

**Strength:** One of the key strengths of Elegant Group is its source of funding and investment. The company boasts no term loan liability and has a strong equity balance. This has helped them to rely on less debt financing. Mr. Tanveer Ahmed, the Group Managing Director's intelligence in handling and running of the business has been a key strength for the company's growth and success for the last 25 years. Moreover, the diverse business units are another strength of the company, helping them explore the other sectors and reap its benefits. In addition, the company's global network of operating business is also a strength of the company. This is because it helps the company to attract more global clients and bring in more profits. It helps the country's economy too.

**Weaknesses:** The biggest weakness of Elegant Group is its lack of implementation of technology in its operations. The operations of the company would benefit more technological

implementations. In the head office, I noticed that the departments were not integrated as of many companies or organizations do. Moreover, the companies do not use many accounting software for recording and conducting accounting. This is because of the lack of information recording and integration of data of all the departments due to lack of proper technological implementation and connections. Another weakness of the company is its lack of proper human resource in top positions. Many top positions like CTO, CSO, COO etc. are missing which would have played a major role and helped the company be more effective and efficient. The company also lacks a proper marketing department, which would have helped the company have a proper marketing strategy to attract more clients and raise awareness of their company and their different business units.

**Opportunities:** The company have an opportunity to have a much more influence and a strong foothold in the garments trade in the country. With global big clients, the company should look to attract more clients in other countries using their network. By hiring a marketing agency, they can raise awareness and campaign about their business properly both locally and globally.

**Threats:** Due to lack of advanced and proper technological implementations stated in weaknesses, this will act as a threat to Elegant Group. It is because many garment companies are using technology and integrating it into their business operations which is helping those companies to be more efficient and effective. The Covid-19 pandemic has also acted as a threat to its operations as lockdowns have halted business operations to run. So, the company will face a financial threat.

## **2.8 Impact of Covid-19 Pandemic:**

The impact of covid-19 pandemic has affected every business and companies all over the world. Elegant Group is also not an exception. The company has been affected by the pandemic and it has been reflected in their financial performance.



The company had to cut down on the number of employees in the head office. This has resulted in under staffing in the head office. Moreover with lockdowns and stoppage of trade, the RMG sector suffered a lot because of no orders for the products. Production had to be halted and garment workers faced a threat of losing their jobs. Elegant Group still paid the wages of the garment workers. Due to no orders and trade, the company faced major losses and reduced amount of sales and profit. This has been observed during analyzing the financial performance in sub chapter 2.5.2 and 2.5.3 respectively. The company has been able to balance the setbacks in their finances by the equity. This has resulted in significant decrease of equity of the company.

As expected, Elegant Group also faced the brunt of the Covid-19 pandemic. As the condition of the world is starting to get better, the company is expected to bounce back slowly to their initial stage. Moreover, with lockdowns eased and start of trade, the RMG business is expected to perform well in the following year. It will take time to get back in their initial stage and offset the losses occurred but the company is expected to continue strong in the upcoming years based on the fact the condition gets better.

## **2.9 Summary and Conclusions:**

Elegant Group has come a long way from its inception as a meagre fashion manufacturer back in the year 1995. It has been able to create an impact in the garments business of Bangladesh and with gaining success has been able to provide its products and services to some of the big-name clients.

Over time, the company has explored into other business sectors and diversified its business. Mr. Tanveer Ahmed, the group managing director has been able to run and operate his business with less debt financing and has possession of adequate assets and equity, which is a positive side to a business. Elegant Group has been able to be a big player in the garments trade in the

country. Its performance has been reflected in its financial condition, as we saw it has been in a good financial position excluding the covid-19 pandemic effects. The company's strength has been its financial condition and backing as well as the entrepreneurship skills of the company's managing director, Mr. Tanveer Ahmed. Although, the company has been seen to be behind in technological implementation in its operations, it has opportunities to have a strong foothold in the garments industry by attracting and expanding its network of clients both locally and abroad.

The company has been committed to provide its customers with the best quality and standard products and services and still strives for achieving excellence through their business operations.

### **2.10 Recommendation:**

Although we have seen that Elegant Group has been performing well overall and is consistent, it still has some weaknesses. During my time as an intern, I have noticed in some places where the company might be able to do well. The most important recommendation is the implementation of advanced technology in its operations, which would help to integrate operations of different departments. It would help them to analyze data and conduct their operations more efficiently. The finance and accounts department needs to adopt accounting software to record activities more precisely and quickly.

The company also needs to appoint some high positions like CSO, COO etc. who would help conduct and take decisions regarding the operations of the business. This would also help reduce some of the stress from the managing director and help him take decisions.

## Chapter 3

### Project Part: Financial Feasibility Study of an Upcoming Real Estate

#### Project of Elegant Group.

#### 3.1 Introduction:

Now, I am going to discuss about the topic selected as the project work for my internship report. As it can be seen from the title, my topic will discuss and conduct a financial feasibility study of an upcoming real estate project of Elegant Group. The name of the real estate project is “Elegant Square”, which will be a multi-storied commercial building. It will be located at Gulshan Avenue at plot-3B, road -111 Block CEN(H). Its land area will be about 21 kathas and the building will consist of 26 floors, which will be discussed in detail in the following sub-chapters.

- **Background:** Elegant Group was founded in 1995, starting its journey as a fashion manufacturer. Achieving success, it started to grow and spread its business globally in countries like, Spain, UK, USA, U.A.E, Turkey etc. dealing with customers like Primark, Pep & Co, etc. As the group started to become sustainable in the Garments and Apparels Sector, it started to diverse its business and venture into other sectors like Banking and Financial Service, Hotels, Real Estate, Trading, Retail Chain Stores as well as Power & Energy Sectors. Currently, the group has an approximate asset value of more than 2000 crore taka, with the garments and apparel sector alone possessing about 1,800 crore asset value. Moreover, the garments and apparel business unit boast an average turnover of 1000 crore Tk over the last three years. As Covid-19 has caused disruptions in the economy of the world and affecting the financial conditions of companies all around the world, Elegant Group has also been affected. During these tough times, the Group is trying to regroup and start to grow again. One

of the decisions is to propose a new real estate project. As these times are very sensitive and crucial due to the Covid-19, the Group needs to do a thorough financial feasibility study regarding the real estate project.

- **Objective(s):** The objectives of my report are:
  - i. To conduct a financial feasibility study of an upcoming real estate project of Elegant Group.
  - ii. To assess and focus on the financial aspects of the real estate project, for instance, costs, calculation of sales amount, project timeline, etc.
  - iii. To calculate the cashflows from the project.
  - iv. To judge whether the project is feasible or not by calculating Net present value (NPV), Discounted Payback Period, Modified Internal Rate of Return (MIRR) and Scenario Analysis.
  
- **Significance of the Issue:** The report will be of significance to Elegant Group, as it will help them come to a decision regarding this particular real estate project. Covid-19 has put a stress on the financial conditions of companies throughout the world and Elegant Group is no exception to it. So, a real estate project needs to be carefully and strictly assessed, to know about the financial implications it will put the company in during these tough times. The report will also be of significance to me personally because it will help me gain knowledge of how these decisions are taken and what factors are taken into account in taking these decisions.

### **3.2 Methodology:**

As I am doing this study under the guidance of my supervisor, who is the respected CFO of the group, I will be given the required data needed for doing the study. Moreover, I will also rely on data from the internet regarding the financial aspects needed to cover in a financial

feasibility study. In addition, I will be able to collect the final market assumptions done by the group's research team regarding some financial aspects required during conducting these financial feasibility studies, for example, how much land will be needed to buy, the initial investment, the price of per floor at which it can be sold (final value) etc. As much of the data will be confidential, I will try to gather as much and at least the final values which will help to conduct the study.

Furthermore, for calculation of interest for taking a loan, reducing balance method is used. In this method, the interest is calculated on the outstanding principal amount. I will also be conducting and finding net present value (NPV) analysis, discounted payback period and MRIR on the real estate project to determine if the project should be accepted or not. In addition, a scenario analysis will also be conducted to find how the NPV gets affected in different possible scenarios.

### **3.3 Findings and Analysis:**

#### **3.3.1 Land Purchase and Cost of Land:**

According to the plans and design of the real estate project, the multi-storied commercial building will be needing a land area of 21 kathas. Elegant Group already has 7 katha in its possession, which was bought at 100 crores. So, it will need to buy an additional 14 katha of land, which is estimated to cost 150 crores at the present market. So, total cost needed for land purchase is shown below in the table:

<b>Land Area (In Kathas)</b>	<b>Cost (Estimated in TK crores)</b>
7 (Already Acquired)	100
14	150
<b>Total</b>	<b>250</b>

*Table 7: Cost of Land for the Project*

So, we can see 250 crores will be the initial investment.

### **3.3.2 Layout of Building and Calculation of Area Space:**

The multi-storied building will be of 26 floors consisting of 8 basement floors (including 3 floors for parking area), 3 Podium/Shopping Complex floors, 10 floors for Banks and the rest 13 floors for other commercial offices.

In this part, the calculation of area space available to be constructed will be shown.

Considering 720 sq/ft as 1 katha, total sq/ft available for 21 kathas will be = 21 kathas\*720 sq/ft

$$= 15,210 \text{ sq/ft}$$

In the following table, the total area space calculations for the construction of the project have been determined.

<b>Category of floor</b>	<b>No. of floors</b>	<b>Total Sq. ft area per floor (Sq/ft)</b>	<b>% of total sq/ft area available for construction</b>	<b>Total sq/ft area available for construction per floor</b>	<b>Total sq/ft area available for construction all floor</b>
<b>Basement (including 3 parking floors)</b>	8	15,120	80%	12,096	96,768
<b>Podium</b>	3	15,120	70%	10,584	31,752
<b>Sale to Bank Floors (level 3-level 12)</b>	10	15,120	50%	7,560	83,160*
<b>Sale to Office Floors (level 13-level 25)</b>	13	15,120	50%	7,560	108,108*
<b>Total</b>				<b>37,800</b>	<b>319,788</b>

*Table 8: Total Area Space Calculation of Construction for the Project*

In the above table, the total area space to be constructed is around 319,788 sq/ft. Moreover, the 4<sup>th</sup> column from the left shows that, in real estate projects, the total area is not available for construction. It either gets destroyed or has to be left for keeping empty space etc. So, the % figures have been taken from research of other real estate projects around the country and an estimation has been taken. In addition, we see that an extra 10% has been added to the total area space available for construction of both bank and office floors. The reason being, while constructing these particular floors, extra space is to be allocated regarding front door space, stairs etc. All these estimations have been taken by the construction team in accordance to their market research.

### 3.3.3 Cost of Construction:

From the previous sub-chapter, we have calculated the total area space to be constructed. Now, we will see the total cost estimation of those floors and other costs required to build the whole building.

Cost/Expenses of Items	Total Sq/Ft	Cost (in TK)	Total Cost of Category (in TK)
Construction of floors	319,788	3500 (per sq/ft)	1,120,000,000
Architecture & Decoration	N/A	200,000,000	200,000,000
Cost for Automated Parking	N/A	280,000,000	280,000,000
Others	N/A	200,000,000	200,000,000
<b>Total Cost/Expenses of Construction</b>			<b>1,800,000,000 approx.</b>

*Table 9: Calculation of Total Cost/Expenses of Construction.*

From the above table, it can be seen that a total of Tk 180 crore expenses is associated with the project. These expenses will be incurred during constructing the real estate project (Elegant Square).

**To be noted:** the figures have been taken as assumptions and from market research done by the construction and financial team. The market research data was not disclosed and only the final figures could be gathered.



### 3.3.4 Timeline of Construction:

The whole construction of the project is planned to finish by the year 2024. The purchase of land and its development is ongoing and said to finish by this year 2021. The construction of floors is to start by next year and said to complete by the year 2024. Moreover, the architectural designs and interior are to start by the year 2023 and end by the year 2024. An estimate of completion by percentage of the specific activities have been represented in the following chart.

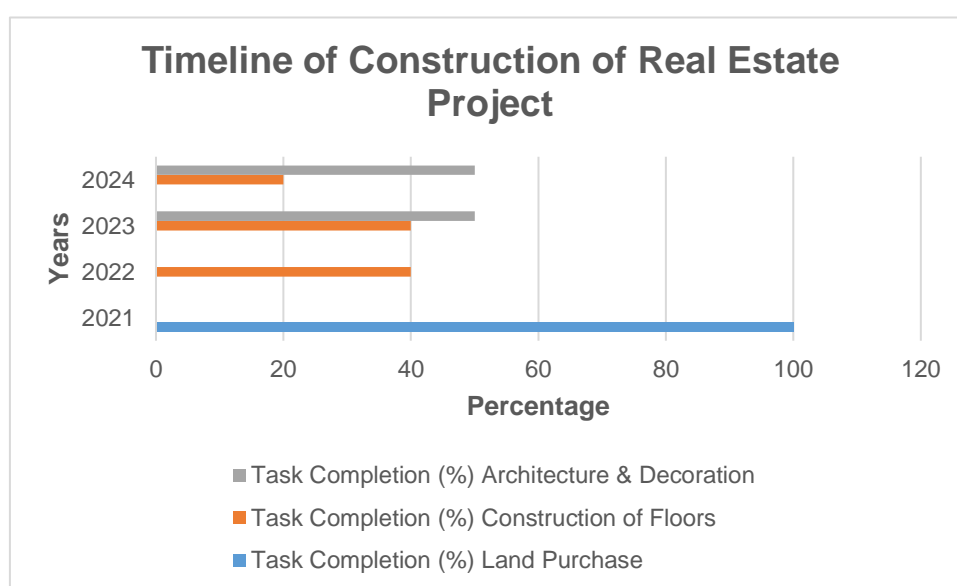


Figure 18: Chart Showing Timeline of Construction of Real Estate Project

### 3.3.5 Calculation of Sales Value of Floors:

In this sub chapter, we will see the calculation and pricing of the floors, which will enable cashflow in for Elegant Group from the real estate project (Elegant Square). The pricing has been done based on assumptions, considering how these floors are valued and what would their price be in the current market. Once again, this research has been done by the concerned team and is not subject to disclose, except the final figures.

<b>Category of Floor</b>	<b>No. of floors</b>	<b>Total Sq. ft area per floor (Sq. ft)</b>	<b>% of Saleable Area</b>	<b>Available area per category floor (Sq. ft)</b>	<b>Total Saleable Area of Category of Floor (Sq. ft)</b>	<b>Pricing Per Sq. ft of Category of Floor (TK/ Sq. ft)</b>	<b>Total Price of Category of Floor (TK)</b>
<b>Basement *</b>	5	15,120	80%	12,096	60,480	20,000	1,209,600,000
<b>Podium</b>	3	15,120	70%	10,584	19,051	60,000	1,143,072,000
<b>Sale to Bank Floors (level 3-level 12)</b>	10	15,120	50%	7,560	8,316	30,000	2,494,800,000
<b>Sale to Office Floors (level 13-level 25)</b>	13	15,120	50%	7,560	8,316	25,000	2,702,700,000
<b>Total</b>							<b>7,550,172,000</b>

*Table 10: Calculation of Sales Value of Floors.*

**Assumptions to be noted:**

\* Total 8 basement floors. 3 floors will be used for parking.

1. **Total Area Land:** 21 Katha

2. Considering 720 sq. ft/katha, 21 katha translates into 15,120 sq. ft

3. **Available area:** Basement: 80%, Podium: 70%, Bank and Commercial floors: 50%

4. **Podium saleable area:** 60% of the 70% available area. So, when calculating the total saleable area of category of floor of Podium, the value is obtained by multiplying the available area of category of floor by 60%.

5. **Office floors saleable area:** 10% extra of the 50% available is added. So, when calculating the total saleable area of category of floor of office floors, the value is obtained by multiplying the available area of category of floor by 1.1%.

6. The price per sq. ft has been taken as estimates after considering market value of the floors in the market.

From the above table, we can see that the total price amounts to Tk 7,550,172,000. That is, Elegant Group is predicting to get Tk 7,550,172,000 cash inflow by selling these floors.

### 3.3.6 Sales Projection Timeline:

Assumption of % sales across timeline for different categories of floors - conservative									
Years		2021		2022		2023		2024	
Half Yearly		H1	H2	H1	H2	H1	H2	H1	H2
Floor Category	No. of floors								
<b>A. Basement</b>	<b>5</b>						<b>50%</b>	<b>50%</b>	
<b>B. Podium</b>	<b>3</b>				<b>20%</b>		<b>20%</b>	<b>60%</b>	
<b>C. Bank/FI (level 3-12)</b>	<b>10</b>				<b>40%</b>		<b>60%</b>		
<b>D. Office Floors (level 13- 25)</b>	<b>13</b>				<b>30%</b>		<b>40%</b>	<b>30%</b>	

Table 11: Conservative Assumptions and Timeline of % of Sales of Different Categories of Floors

From the above table, we see that Elegant Group has predicted % of the total sales of the different categories of floors across different years. Moreover, it shows that the sales will start to occur midway through the construction timeline.

Sales projection based on above projection											TOTAL(TK)
Years		2021		2022		2023		2024		Half Yearly	
Category of Floor	No. of floors	H1	H2	H1	H2	H1	H2	H1	H2		
		Basement	5				-		604,800,000	604,800,000	
Podium	3		-	-	228,614,400		228,614,400	685,843,200		1,143,072,000	
Sale to Bank Floors (level 3-level 12)	10				997,920,000		1,496,880,000			2,494,800,000	
Sale to Office Floors (level 13-level 25)	13			-	810,810,000	-	1,081,080,000	810,810,000		2,702,700,000	
<b>Total</b>		-		-	2,037,344,400	-	3,411,374,400	2,101,453,200		<b>7,550,172,000</b>	

Table 12: Calculation of Sales Value of Different Categories of Floors across the timeline.

The above table shows the sales in Tk, the project will generate throughout the timeline. The figures have been determined based on the assumptions of sales in the previous table 11.

Elegant Group will not receive the full payments of the sales in the respective period but they will receive it gradually throughout the timeline. That is, from the above table it is seen that

total sale value of Podium in H2 of the year 2022 is Tk 228,614,400. Instead of receiving the full payment in this particular time period, they will receive it throughout the timeline installment wise. The estimates of cash payment to be received from each sale have been taken as 30% down payment in the first year and then 35% respectively the following two years. For example, in case of Podium/Shopping Floors, 20% is projected to be sold at the year 2022. The cash from those 20% sale will come to Elegant Group as installments of 30%,35%,35% in 2022,2023,2024 respectively. In this way, the rest of the sales amount has been received.

### 3.3.7 Calculation of Principal Payment and Interest Payment:

A 150 crore term loan for 4 years will be taken by Elegant Group for the real estate project. The loan will have a 1-year moratorium on principal payment, i.e., the principal repayments will start after 1 whole year from taking the loan. The loan will be taken on January 1, 2021. So, the principal payments will start after 1 whole year and will be made at the end of H2 of the year 2022. The interest payments will be made at the end of each half yearly period. The timeline is shown below:

Calculation of Principal Payments and Interest Payments										
Years	2021		2022		2023		2024		2025	
Half Yearly	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2
Items										
Principal Installment (150 crore Term Loan 4 years, 1 year moratorium)				250,000,000	250,000,000	250,000,000	250,000,000	250,000,000	250,000,000	250,000,000
Interest		67,500,000	67,500,000	64,687,500	53,437,500	42,187,500	30,937,500	19,687,500	8,437,500	

Table 13: Calculation of Principal Payment and Interest Payment of Loan Taken

The interest calculations for payment have been done by reducing balance method. The interest rate of the loan is 9%. It is to be noted that the interest payments have been calculated quarterly but the payments have been accumulated and paid half-yearly.

As discussed, prior the interest payments have been done in a reducing balance method. That is, the interest is calculated on a reduced principal amount after every principal payment. So, calculation of interest in the reducing balance method for above project is,

The first two interest payments will be normal calculation as no principal are paid during that period.

$$\begin{aligned} \text{Third Interest payment} &= (1500000000 * 0.09 * 3/12) + (1500000000 - 125000000) * 0.09 * (3/12) \\ &= \text{Tk } 64,687,500 \end{aligned}$$

$$\begin{aligned} \text{Fourth Interest Payment} &= [(1375000000 - 125000000) * 0.09 * (3/12)] + [(1250000000 - 125000000) * 0.09 * (3/12)] \\ &= \text{Tk } 53,437,500 \end{aligned}$$

Likewise, the rest of the calculations have been done and shown in the appendix (Appendix C).

**To be noted:** In the table the total accumulated interest sum to be paid within 6 months or half yearly has been shown, whereas the interest calculations have been done on a quarterly basis.

### **3.3.8 Project Timeline and Cashflow Projection:**

The total cashflow projection can now be shown as all the necessary elements needed have been determined prior to this sub chapter. The corporate tax rate for non-listed companies have been fixed at 32.5% by the finance minister of Bangladesh for the 2020-2021 fiscal year (Hasan, Budget FY21: Corporate tax rate remains unchanged, except for non-listed companies, 2020). So, by taking this tax rate of 32.5%, the net cashflow after tax has been calculated.

Cashflow Projection (in Tk)													
Cash Inflow													
Years	2021		2022		2023		2024		2025		2026		
Half Yearly	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	
Items													
Category of Floor	No. of floors												
Sale of Basement Floors	5	0	0	0	0	0	181,440,000	181,440,000	211,680,000	211,680,000	211,680,000	211,680,000	
Sale of Podium Floors	3	0		68,584,320			148,599,360	205,752,960	160,030,080	240,045,120	80,015,040	240,045,120	
Sale to Bank Floors (level 3-level 12)	10	0	0	299,376,000	0		798,336,000	0	873,180,000		523,908,000		
Sale to Office Floors (level 13-level 25)	13	0	0	243,243,000	0	0	608,107,500	243,243,000	662,161,500	283,783,500	378,378,000	283,783,500	
<b>Total Cash Inflow</b>		0	0	611,203,320	0	0	1,736,482,860	630,435,960	1,907,051,580	735,508,620	1,193,981,040	735,508,620	0
<b>Cash Outflow</b>													
Land Purchase		2,500,000,000	0										
Construction Cost				300,000,000	300,000,000	300,000,000	300,000,000	300,000,000	300,000,000				
<b>Total Cash Outflow</b>		2,500,000,000	0	300,000,000	300,000,000	300,000,000	300,000,000	300,000,000	300,000,000	0	0	0	0
<b>Net Cashflow</b>		(2,500,000,000)	-	311,203,320	(300,000,000)	(300,000,000)	1,436,482,860	330,435,960	1,607,051,580	735,508,620	1,193,981,040	735,508,620	-
<b>Net After Tax Cashflow</b>		(2,500,000,000)	-	202,282,158	(195,000,000)	(195,000,000)	933,713,859	214,783,374	1,044,583,527	478,080,603	776,087,676	478,080,603	-

Table 14: Total Cashflow Projection and Net Cashflow Projection after Tax

It should also be mentioned that, the sales cashflows have been calculated following the information stated in sub chapter 3.3.6. It was stated that the total sales amount of each floor would be received in three installments 30%,35%,35%.

At last, I have created a project timeline chart taking the summary of data as determined and found from all the above findings and analysis.

## Project Timeline

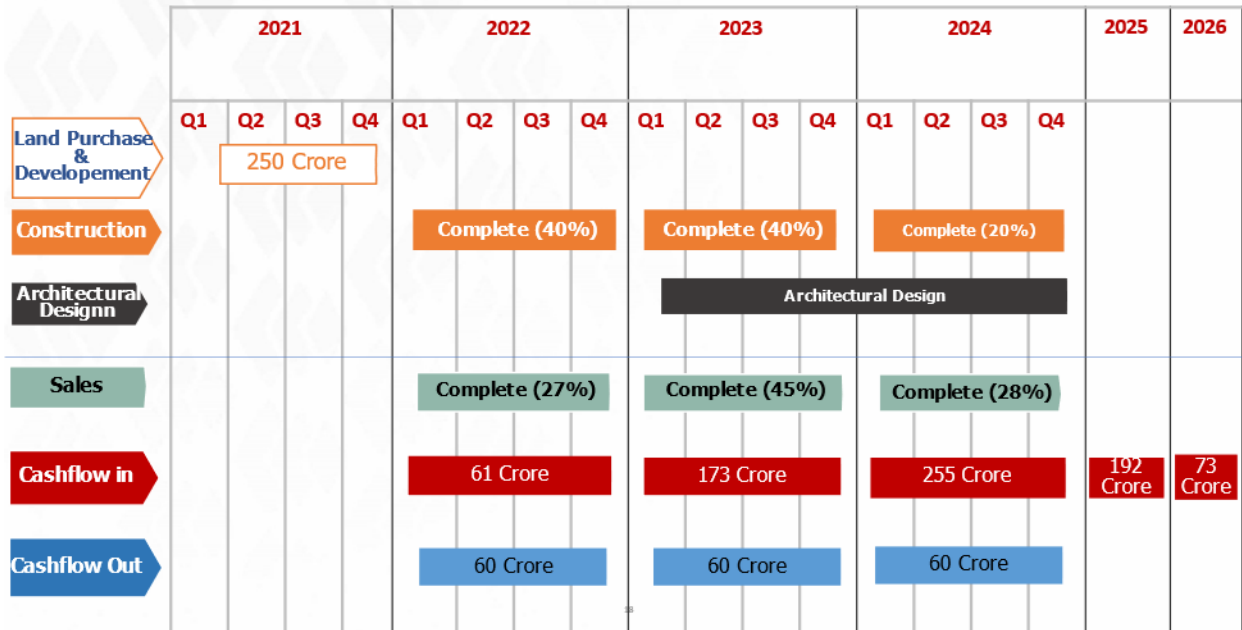


Figure 19: A Project Timeline Highlighting All Related Events

The timeline shows the summary of the conservative cashflow estimates made and determined from the previous sub chapters.

### 3.3.9 Financial Feasibility Measurement Methods:

#### i. Net Present Value (NPV):

There are many methods to measure the feasibility of a project. NPV is one of them, which helps to find the present value of all future cashflows. It analyzes the profitability of the project, by measuring the present value of the future cashflows from the project considering the time value of money. This will help in making a decision whether investing money will bring back positive returns in the future and to accept the project. If the NPV is positive, then the project is said to be feasible and attractive and should be accepted.

To calculate the NPV, the weighted-average cost of capital (WACC) is to be determined. To calculate the WACC, the cost of debt and cost of equity is to be calculated. The calculations are mentioned below:



**Cost of Debt:** The internal rate of return (IRR) of the loan that will be taken for the project has been calculated. The semi-annual principal and interest payments of the loan is considered for calculating the IRR. The IRR is calculated to be 4.31%.

**Cost of Equity:** The cost of equity was determined by following the cost of debt + risk premium approach. Here, the cost of debt is 4.31%, which was found out from calculating the cost of debt. The risk premium was taken as an assumption. The assumption was based on the fact that, the risk premium usually lies between (3-5) % annually (Subject 3. Cost of Common Equity, n.d.). Moreover, according to the data of World Bank the risk premium in Bangladesh for the year 2020 was 3.53% (data.worldbank.org, n.d.). So, an average assumption of 4% annually has been taken.

Therefore, cost of equity = 4.31% + 2% (since 4% is annual and we are considering semi-annual rate)

$$= 6.31\%$$

So, the cost of equity is 6.31%

**Weighted-Average Cost of Capital (WACC):** Now, the WACC is to be calculated. The weight of equity and debt for the project is considered as 60% and 40% respectively. So, the WACC is,

$$(60\% * 6.31\%) + (40\% * 4.31\%) \text{ or, } 5.51\%.$$

Hence the WACC is 5.51%.

From the above assumptions and calculations, we have come to know our projected cashflows throughout the project timeline and the WACC. So, the NPV of the project can be calculated.

The net after tax cashflows projected from table 14 are given below:

Years	2021		2022		2023		2024		2025		2026	
Half Yearly	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2
Net Cash flow	(2,500,000,000)	-	311,203,320	(300,000,000)	(300,000,000)	1,436,482,860	330,435,960	1,607,051,580	735,508,620	1,193,981,040	735,508,620	-
Net After Tax Cash flow	(2,500,000,000)	-	210,062,241	(202,500,000)	(202,500,000)	969,625,931	223,044,273	1,084,759,817	496,468,319	805,937,202	496,468,319	-

Table 15: Net After Tax Cashflows of Real Estate Project

Now, the present value of all these cashflows after discounting them by the WACC are given below:

$$\text{NPV} = (2,500,000,000) + 0 + 188,695,154.59 + (172,402,737.87) + (163,399,429.32) + 741,542,601.18 + 161,669,962.78 + 745,209,234.05 + 323,252,993.56 + 497,345,961.65 + 290,372,383.45 + 0$$

$$\text{NPV} = \text{Tk } 112,286,124.07$$

Hence, we can see that the NPV is positive. So, the project is feasible and should be accepted.

## ii. Discounted Payback Period:

The discounted payback period takes into account the time value of money and finds out the time required to get back the initial investment from the returns of the project.

At first, the net after tax cashflows are discounted by the WACC rate. Then the cumulative cashflows are determined by subtracting the discounted inflows from the initial investment.

The discounted cash inflows are determined. Now, the payback period is calculated as shown below:

<b>Half Yearly Periods</b>	<b>Cash Inflows</b>	<b>Cumulative Cash Flow</b>
0		(2,500,000,000)
1	0	(2,500,000,000)
2	188,695,154.59	(2,311,304,845.41)
3	(172,402,737.87)	(2,483,707,583.29)
4	(163,399,429.32)	(2,647,107,012.61)
5	741,542,601.18	(1,905,564,411.43)
6	161,669,962.78	(1,743,894,448.65)
7	745,209,234.05	(998,685,214.59)
8	323,252,993.57	(675,432,221.03)
9	497,345,961.65	(178,086,259.38)
10	290,372,383.45	112,286,124.07

*Table 16: Calculation of Discounted Payback Period*

So, from the table the number of periods can be determined. That is,

$$\text{Number of Half Yearly periods} = 9 + 178,086,259.38 / 290,372,383.45$$

= 9.6 half yearly periods or 5.8 years

### **iii. MIRR (Modified Internal Rate of Return):**

The MIRR formula is,  $MIRR = [(FV \text{ of } +ve \text{ cashflows} / PV \text{ of } -ve \text{ cashflows})^{1/11}] - 1$

At first, we find the future value (FV) of the positive cashflows and the present value (PV) of the negative cashflows by using the WACC rate from the table 15. They are as follows:

Sum of FV of +ve cashflows = **37,249,414,574.59**

Sum of PV of -ve cashflows = **(2,835,802,167)**

Number of periods,  $n = 11$

Therefore,  $MIRR = 26\%$

We know, if the MIRR is greater than WACC, the project is to be accepted. In this case as MIRR is greater than WACC (5.51%), so the project should be accepted.

### **3.3.10 Sensitivity Analysis:**

We have already determined the NPV of the real estate project in the previous sub-chapters. It has been seen that, the NPV is positive. As a result, the project should be accepted as it will provide Elegant Group with positive returns. We will now conduct sensitivity analysis based on the above the cash flows and find out the difference in the NPV.

Sensitivity analysis helps to determine the condition and analyze the returns of a project or portfolio, when it is subjected to different scenarios. For example, the change in NPV if the costs of a project increase by 10% due to some economic event. There is always a probability that the economic condition might change due to internal or external factors. Scenario analysis helps to test the effects of such economic changes to a portfolio or project.

In my case, I have come up with four different scenarios based on the impact of the Covid pandemic in our economy. They are “Very Pessimistic”, “Pessimistic”, “Optimistic” and “Very Optimistic”. In these scenarios, two major inputs have been analyzed which are crucial in determining the NPV of the project. They are:

**a.** Change in inflation per half yearly period from the year 2022 (Keeping the Cost of Debt and Equity constant, i.e., the WACC constant)

**b.** Changing the WACC (Keeping the inflation constant, i.e., the cashflows remain constant)

The change in NPV is then measured based on above two conditional inputs. The calculations are shown in the Appendix (Appendix E and Appendix G). The results are discussed below:

**a. Change in inflation per half yearly period from the year 2022 (Keeping the Cost of Debt and Equity constant, i.e., the WACC constant):**

**i. Very Pessimistic:**

In this scenario, it is assumed that the Covid scenario gets worse. Strict lockdowns are imposed and there are also shutdowns of economic activities like trading etc. As a result, a 1.25% change in deflation in prices per half yearly is considered. The probability of this scenario has been assumed to be 5%, indicating a lower chance of this scenario to happen.

Now, the sales value and construction costs get reduced due to harsh economic conditions, as there is less demand. They are reduced by this assumed change in deflation per half yearly period (1.25%) and net after tax cashflows are calculated simultaneously. It is seen that the net after tax cashflows gets decreased due to the decreasing cash flows. The NPV is calculated from these resulting cashflows and it is found out to be Tk (86,092,143). As the NPV turns out to be negative, the project cannot be accepted during this very pessimistic scenario.

### **ii. Pessimistic:**

In this scenario, it is assumed the Covid scenario is bad but better than the very pessimistic scenario. There are relaxed lockdowns and economic activities are allowed in small numbers and by maintaining proper health guidelines. In this scenario, we consider a 0.5% change in deflation in prices per half yearly period. The probability of this scenario has been assumed to be 10%, indicating a slightly higher chance of this scenario to happen compared to very pessimistic. This is because of the disastrous impact of the Covid pandemic in the neighboring countries of Bangladesh.

Similarly, like very pessimistic scenario, the cashflows are calculated by decreasing the sales amount and construction cost. The NPV is calculated simultaneously from the resulting cashflows. It turns out to be Tk 31,197,760.36. In this case, the NPV is still positive. So, the company can accept the project, even if the economic condition becomes pessimistic. It is to be noted that, the change in inflation rate is -0.5 % per half yearly period. Hence, the company can accept only if this condition is maintained.

### **iii. Optimistic:**

In this scenario, it is assumed the Covid pandemic eases in the country. This will bring about an improvement in the economy and demand will increase. So, costs will ultimately increase, i.e., inflation will occur. A 0.75% change in inflation in prices per half yearly period is considered during this scenario. The probability of this scenario has been assumed to be 15%, indicating a higher chance of this scenario to happen compared to pessimistic. This is because of the start of vaccination program and proper maintenance of health guidelines.

Likewise, the previous scenarios the NPV is calculated from the resulting increased net after tax cash flows. The NPV for this scenario turns out to be positive and equal to Tk 238,414,946.82. So, the project is to be accepted during this scenario.

#### **iv. Very Optimistic:**

This scenario has been assumed based on the fact the Covid pandemic is almost over due to the wide-ranging vaccination program. Moreover, proper implementation and maintaining of health guidelines have helped reduce the Covid pandemic drastically. As a result, the economy will boom and improve a lot. Inflation of prices will also increase due to increased demand and supply. A high 1.5% change in inflation of prices per half yearly is assumed. The probability of this scenario has been assumed to be 10%, indicating a lower chance of this scenario to happen compared to optimistic. As proper awareness for the vaccination program has not been made.

After calculating the cash flows from the increased sales and increased cost expenses, the NPV is calculated from the resulting net after tax cash flows. The NPV is seen to be Tk 370,129,593.33. As the NPV is positive, the project is to be accepted.

#### **Summary of Sensitivity Analysis (a):**

Different scenarios resulted in different NPVs of the project. This was due to the change in the sales amount and construction costs. As a result, from this analysis, a picture can be drawn as to what the project may look like due to the economic changes. This will help to evaluate decisions regarding pricings and other financial decisions concerning the project. A summary of the change in NPVs based on the different scenarios is shown below in a table:

Scenarios	Probability of Scenarios	Change in Inflation Rate per Half Yearly Period	NPV	Change in NPV(%)	Decision of Project
Very Pessimistic	5%	1.25%	(86,092,143)	-177%	No
Pessimistic	10%	0.50%	31,197,760.36	-72%	Yes
Moderate	60%	0	112,286,124.07	0%	Yes
Optimistic	15%	0.75%	238,414,946.82	112%	Yes
Very Optimistic	10%	1.50%	370,129,593.33	230%	Yes

Table 17: Summary of Sensitivity Analysis (a)

It can be seen from the above table, that 4 out of 5 scenarios keeping other factors constant turns out to be feasible for the project. If the scenarios do occur with all the above assumptions, then Elegant Group can continue the project except during very pessimistic period. The moderate or current economic condition is hoped to continue, resulting in a large probability of 60% compared to other events.

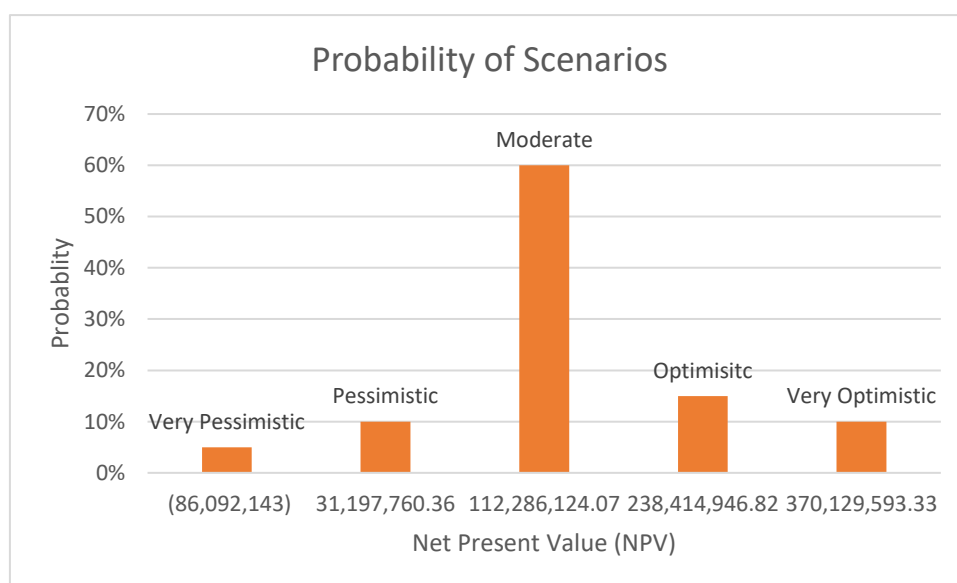


Figure 20: Chart of Probability of Scenario NPV (a)

**Expected NPV:** The expected NPV has been calculated from the information of Table 17. The expected NPV has been found out to be Tk 138,962,044.70 (calculations have been shown in the Appendix F). This indicates that, the uncertainty of the scenarios has been adjusted in the normal NPV value. That is, since there is a probability of economic condition to change,



resulting in NPV change, the expected NPV shows us the NPV value of the project if any of the above scenario occurs.

**Standard Deviation:** The standard deviation was calculated and it was found out to be Tk 127,619,994.40. This indicates that, the dispersion or variation of the scenario NPVs from the expected NPV can be considered a standard, if their variation is equal to +/- 127,619,994.40. That is, the project will still be feasible if the NPV value's is deviated from the expected NPV is equal to +/- 127,619,994.40.

**Co-efficient of Variation:** The co-efficient of variation was calculated by finding the ratio of standard deviation to expected NPV. It was found out to be around 0.92. This indicates a lower dispersion of scenario NPVs around the expected NPV.

**b. Changing the WACC (Keeping the inflation constant, i.e., the cashflows remain constant):**

**i. Very Pessimistic:**

In this scenario, similarly like in (a) the economic condition worsens. Due to strict lockdowns and shutdown of economic activities, the cost of equity reduces to minimize the effect. The cost of equity reduces to about 1.5% which also brings down the WACC by 1.5%. The probability of this scenario is about 5%.

Now the NPV is calculated and it is seen that the NPV increases from the moderate scenario to about 150% and is positive. So, the project seems feasible in this scenario.

**ii. Pessimistic**

In this scenario the lockdowns are relaxed and economic activities are slowly starting. As a result, the cost of equity gets reduced slightly compared to very pessimistic and is reduced by .75%.

Now the NPV is calculated and it seen that the NPV increases by 74% than the moderate scenario. The NPV is positive and hence should be accepted during this scenario.

### **iii. Optimistic:**

In this scenario, the economic condition improves as the situation of Covid-19 pandemic is better. The cost of equity increases due to improving economic condition. The WACC increases by .75%.

Now the NPV is calculated and it is seen that the NPV gets reduced by 71% from the moderate NPV. The project is still feasible as the NPV is positive.

### **iv. Very Optimistic**

The economic condition is booming in this scenario based on the assumption that the Covid-19 pandemic is almost over due to wide ranging vaccination and proper implementation of health guidelines. As a result, the WACC increases a lot and that is by 1.5%.

The NPV calculations show a negative value indicating the project is not feasible during this scenario with this high WACC change. As a result, the project should not be accepted.

### **Summary of Sensitivity Analysis (b):**

Different scenarios with change in WACC resulted in different NPVs. As a result, a picture can be drawn as to what the project will look like if the WACC changes with other factors remaining constant. A summary is shown below:

Scenarios	Probability of Scenarios	Change in Cost of Equity	WACC	NPV	Change in NPV(%)	Decision of Project
Very Pessimistic	5%	-1.5	4.61%	281,160,158.45	150%	Yes
Pessimistic	10%	-0.75	5.06%	195,141,864.55	74%	Yes
Moderate	60%	0	5.51%	112,286,124.07	0%	Yes
Optimistic	15%	0.75	5.96%	32,460,295.44	-71%	Yes
Very Optimistic	10%	1.5	6.41%	(44,462,050.61)	-140%	No

Table 18: Summary of Sensitivity Analysis (b)

It can be seen from the above table, that 4 out of 5 scenarios keeping other factors constant turns out to be feasible for the project. If the scenarios do occur with all the above assumptions, then Elegant Group can continue the project except during very pessimistic period. The moderate or current economic condition is hoped to continue, resulting in a large probability of 60% compared to other events.

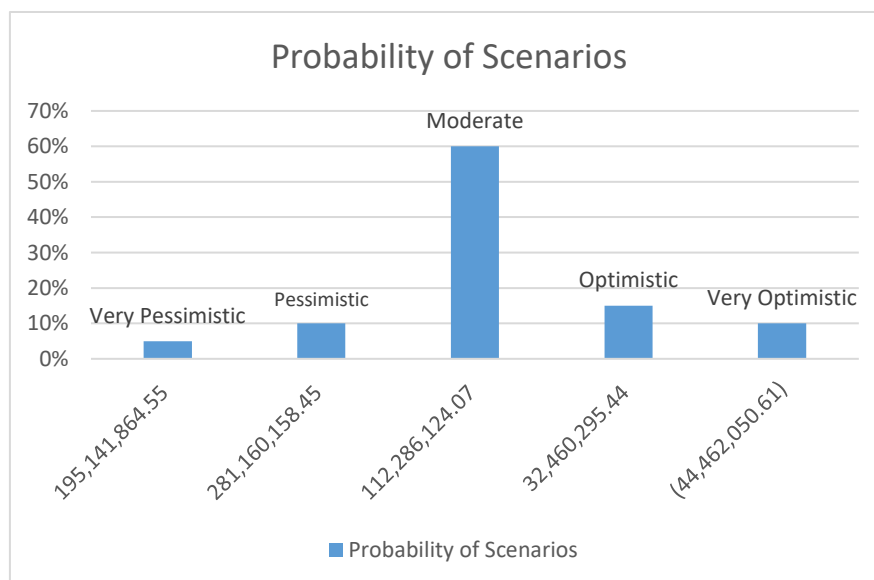


Figure 21: Chart of Probability of Scenario NPV (b)

**Expected NPV:** The expected NPV has been calculated from the information of Table 18. The expected NPV has been found out to be Tk 101,366,708.08 (calculations have been shown in the Appendix). This indicates that, the uncertainty of the scenarios has been adjusted in the

normal NPV value. That is, since there is a probability of economic condition to change, resulting in NPV change, the expected NPV shows us the NPV value of the project if any of the above scenario occurs.

**Standard Deviation:** The standard deviation was calculated and it was found out to be Tk 94,850,511.90. This indicates that, the dispersion or variation of the scenario NPVs from the expected NPV can be considered a standard, if their variation is equal to +/- 94,850,511.90. That is, the project will still be feasible if the NPV value's is deviated from the expected NPV is equal to +/- 94,850,511.90.

**Co-efficient of Variation:** The co-efficient of variation was calculated by finding the ratio of standard deviation to expected NPV. It was found out to be around 0.94. This indicates a lower dispersion of scenario NPVs around the expected NPV.

### **3.4 Summary & Conclusions:**

Elegant Group has planned to set up a real estate project named “Elegant Square” with 250 crore investment, and constructing costs amounting to 180 crores. Moreover, it was seen that, the building would consist 26 floors in total of which 3 floors would be sold for shopping/Podium purpose, 5 floors would be sold for basement purposes, 10 floors will be sold to banks and the rest 13 floors to offices. The sales figure projected is Tk 7,550,172,000. The construction is said to be finished by the year 2024 and sales of floors are projected to start from the year 2022.

After conducting a NPV analysis, it has been seen that the NPV is positive and equal to Tk 112,286,124.07. This indicates that, the real estate project is feasible to Elegant Group and they should go ahead with this project. Moreover, we have seen that, the sales would generate a major gain against the investment. In addition, the payback period was calculated to be around 5.8 years. The MIRR was also calculated (26%) and it was greater than the WACC (5.51%). As a result, this project plan can be considered to be a good plan if they can execute it properly.

Furthermore, a sensitivity analysis showed the outcomes of the project based on different scenarios and also two major inputs. The NPV was calculated during those scenarios and it was seen that in 4 out of 5 scenarios, the project's NPV is positive. Hence, the project can be accepted if those scenarios do occur if all the assumptions are maintained and other factors remain constant.

### **3.5 Recommendations:**

After calculations of concerned cashflows and doing a financial feasibility analysis, I would recommend Elegant Group to go ahead with the proposed real estate project. Moreover, the estimates taken above for all the calculations, have been conservative and taken with great caution. So, even after conservative estimates as the financial feasibility analysis shows positive outcomes, the project should be accepted.

Moreover, the sensitivity analysis also enabled to create a picture of how the cashflows would be affected if economic condition changes. It can be recommended that, the project should be accepted during worse economic times only up to .5% of deflation per half yearly and only when the cost of equity increases up to .75%. Above these rates, the project should not be accepted, as it will not be feasible.

## References

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- [2] "Subject 3. Cost of Common Equity," [Online]. Available: <https://analystnotes.com/cfa-study-notes-calculate-and-interpret-the-cost-of-equity-capital-using-the-capital-asset-pricing-model-approach-the-dividend-discount-model-approach-and-the-bond-yield-plus-risk-premium-approach.html>.
- [3] [Online]. Available: <https://data.worldbank.org/indicator/FR.INR.RISK?locations=BD>.

## Appendix

### Appendix A (Financial Information of Elegant Group RMG)

<b>Years</b>	2019	2020
<b>Items</b>	In BDT	In BDT
Net Sales/Revenue	9,013,299,420	6,789,698,505
Net Profit	613,224,563	273,446,012
Total Liabilities	2,447,523,994	3,958,592,387
Total Asset	8,190,928,633	7,800,000,000
Total Equity	5,743,404,639	3,841,407,613

*Table A.1: Financial Information of Elegant Group RMG*

## Appendix B (Calculation of Financial Ratios)

### i. Total Asset Turnover:

Formula: Net Sales/Total Assets

Year 2019	Year 2020
$=9,013,299,420/8,190,928,633$	$=6,789,698,505/7,800,000,000$
=1.10 times	= 0.87 times

### ii. Total Debt to Total Assets:

Formula: Total Liabilities/Total Assets

Year 2019	Year 2020
$=2,447,523,994/8,190,928,633$	$=3,958,592,387/7,800,000,000$
=29.88%	= 50.75%

### iii. Net Profit Margin:

Formula: Net profit/Net Sales

Year 2019	Year 2020
$=613,224,563/9,013,299,420$	$=273,446,012/6,789,698,505$
=6.80%	= 4.03%

### iv. Return on Asset:

Formula: Net Profit/Total Asset



Year 2019	Year 2020
=613,224,563/8,190,928,633	=273,446,012/7,800,000,000
=7.49%	= 3.51%

**v. Return on Equity:**

Formula: Net Profit/Total Equity

Year 2019	Year 2020
=613,224,563/5,743,404,639	=273,446,012/3,841,407,613
=10.68%	= 7.12%

## Appendix C (Calculation of Interest Payments)

Elegant Group has secured a Tk 1,500,000,000 loan from a respective bank for the project. The interest payments have been calculated by using the reducing balance method mentioned as per the loan deal. The interest calculations have been done quarterly wise using 9% as interest rate. The quarterly payments have been accumulated for payment in half yearly wise. The interest payment for each year have been shown below:

Year	2021			
Quarters	Q1	Q2	Q3	Q4
<b>Interest</b>			=1500000000*0.09*(3/12) =33,750,000	=1500000000*0.09*(3/12) =33,750,000
<b>Half Yearly</b>	<b>H1</b>		<b>H2</b>	
<b>Accumulated Interest Half Yearly</b>			=33,750,000+33,750,000 <b>=67,500,000</b>	

*Table C.1: Interest calculation for Year 2021*

Year	2022			
Quarters	Q1	Q2	Q3	Q4
<b>Interest</b>	=1500000000*0.09*(3/12) =33,750,000	=1500000000*0.09*(3/12) =33,750,000	=1500000000*0.09*(3/12) =33,750,000	=(1500000000 - 1250000000)*0.09*(3/12) =30,937,500
<b>Half Yearly</b>	<b>H1</b>		<b>H2</b>	
<b>Accumulated Interest Half Yearly</b>	=33,750,000+33,750,000 <b>=67,500,000</b>		=33,750,000+30,937,500 <b>=64,687,500</b>	

*Table C.2: Interest calculation for Year 2022*

Year	2023			
Quarters	Q1	Q2	Q3	Q4
Interest	$=(1375000000-125000000)*0.09*(3/12)$ =28,125,000	$=(1250000000-125000000)*0.09*(3/12)$ =25,312,500	$=(1125000000-125000000)*0.09*(3/12)$ =22,500,000	$=(1000000000-125000000)*0.09*(3/12)$ =19,687,500
Half Yearly	H1		H2	
Accumulated Interest Half Yearly	=28,125,000+25,312,500 =53,437,500		=22,500,000 +19,687,500 =42,187,500	

Table C.3: Interest calculation for Year 2023

Year	2024			
Quarters	Q1	Q2	Q3	Q4
Interest	$=(875000000-125000000)*0.09*(3/12)$ =16,875,000	$=(750000000-125000000)*0.09*(3/12)$ =14,062,500	$=(625000000-125000000)*0.09*(3/12)$ =11,250,000	$=(500000000-125000000)*0.09*(3/12)$ =8,437,500
Half Yearly	H1		H2	
Accumulated Interest Half Yearly	=16,875,000+14,062,500 =30,937,500		=11,250,000 +8,437,500 =42,187,500	

Table C.4: Interest calculation for Year 2024

Year	2025			
Quarters	Q1	Q2	Q3	Q4
Interest	$=(375000000-125000000)*0.09*(3/12)$ =5,625,000	$=(250000000-125000000)*0.09*(3/12)$ =2,812,500		
Half Yearly	H1		H2	
Accumulated Interest Half Yearly	=5,625,000+2,812,500 =8,437,500			

Table C.5: Interest calculation for Year 2025

## Appendix D (Calculation of Cost of Debt and NPV)

As mentioned, prior that a Tk 1,500,000,000 loan has been taken for the project. Therefore, we will calculate the cost of debt by finding the half yearly internal rate of return (IRR) for the loan which will act as the cost of debt for the project.

<b>Semi-Annual</b>	
<b>Times</b>	<b>Cashflow</b>
0	1,500,000,000
1	(67,500,000)
2	(67,500,000)
3	= - (250000000+64687500) = (314,687,500)
4	= - (250000000+53437500) = (303,437,500)
5	= - (250000000+42187500) = (292,187,500)
6	= - (250000000+30937500) = (280,937,500)
7	= - (250000000+19687500) = (269,687,500)
8	= - (250000000+8437500) = (258,437,500)
<b>IRR</b>	4.31%

*TableD.1: Calculation of Cost of Debt*

In the above table the total loan has been taken in times 0. And the following cash out flows have been taken by calculating the sum of the principal payments with the interest payments.

The IRR has been calculated by using the IRR formula in Microsoft excel.

Now, for the NPV calculations, the cashflows have been discounted using the WACC and then added according to the formula of NPV.

$$\text{NPV} = \text{Initial Investment} - [\text{Cashflow 1}/(1+\text{WACC})^n + \text{Cashflow 2}/(1+\text{WACC})^n \dots\dots\dots]$$

## Appendix E (Sensitivity Analysis for a)

The calculations of the cashflows of the respective four scenarios are given below:

### i. Very Pessimistic:

In this scenario, it is assumed that 1.25% change in deflation per half yearly period occurs from the year 2022. The calculation per half yearly period is shown below:

Year s	2021		2022		2023		2024		2025		2026	
	H 1	H 2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H 2
Chan ge in Infla tion Rate per Half Yearl y Perio d  1.25 %			1- 1.25 %	=0.988*	=0.975*	=0.96*	=0.95*	=0.94*	=0.93*	=0.92*	=0.9*	
			= 0.98 8%	0.988  = 0.975	0.988  = 0.96	0.988  =0.95	0.988  =0.94	0.988  =0.93.	0.988  =0.92	0.988  =0.90	0.988  =0.89	

*Table E.1: Calculation of Change of Inflation Rate per Half Yearly Period*

Now the cashflows based on above change in deflation per half yearly period are shown below:

Cashflow Projection (in Tk)													
Cash Inflow		2021		2022		2023		2024		2025		2026	
Years		H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2
Half Yearly													
Items													
Category of Floor	No. of floors												
Sale of Basement Floors	5	0	0	0	0	0	172,536,687	170,379,978	196,291,933	193,838,284	191,415,306	189,022,614	
Sale of Podium Floors	3	0		67,727,016			141,307,547	193,210,895	148,396,702	219,812,614	72,354,986	214,351,645	
Sale to Bank Floors (level 3-level 12)	10	0	0	295,633,800	0		759,161,422	0	809,704,225		473,752,882		
Sale to Office Floors (level 13-level 25)	13	0	0	240,202,463	0	0	578,267,490	228,415,658	614,025,704	259,864,450	342,154,859	253,408,442	
<b>Total Cash Inflow</b>		0	0	603,563,279	0	0	1,651,273,146	592,006,532	1,768,418,564	673,515,348	1,079,678,032	656,782,701	0
<b>Cash Outflow</b>													
Land Purchase		2,500,000,000	0										
Construction Cost				296,250,000	292,546,875	288,890,039	285,278,914	281,712,927	278,191,516				
<b>Total Cash Outflow</b>		2,500,000,000	0	296,250,000	292,546,875	288,890,039	285,278,914	281,712,927	278,191,516	0	0	0	0
<b>Net Cashflow</b>		(2,500,000,000)	-	307,313,279	(292,546,875)	(288,890,039)	1,365,994,232	310,293,605	1,490,227,049	673,515,348	1,079,678,032	656,782,701	-
<b>Net After Tax Cashflow</b>		(2,500,000,000)	-	207,436,463	(197,469,141)	(195,000,776)	922,046,107	209,448,183	1,005,903,258	454,622,860	728,782,671	443,328,323	-

Table E.2: NPV Calculation of Very Pessimistic Scenario

The NPV has been calculated for this scenario based on the above net after tax cashflows.

**i. Pessimistic:**

In this scenario, it is assumed that 0.5% change in deflation per half yearly period occurs from the year 2022. The calculation per half yearly period is shown below:

Year s	2021		2022		2023		2024		2025		2026	
	H 1	H 2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H 2
<b>Change in Inflation Rate per Half</b>			1-0.5% = 0.9	=0.995 *0.995 = 0.990	=0.99*0.995 = 0.985	=0.985*0.995 = 0.98	=0.98*0.995 = 0.975	=0.975*0.995 = 0.97	=0.97*0.995 = 0.965	=0.965*0.995 = 0.96	=0.96*0.995 = 0.955	

Yearly Period	1.25 %	95 %										

Table E.3: Calculation of Change of Inflation Rate per Half Yearly Period

Now the cashflows based on above change in deflation per half yearly period are shown below:

Cashflow Projection (in Tk)													
Cash Inflow		2021		2022		2023		2024		2025		2026	
Years		H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2
Half Yearly													
Items													
Category of Floor	No. of floors												
Sale of Basement Floors	5	0	0	0	0	0	177,838,325	176,949,134	205,408,453	204,381,411	203,359,503	202,342,706	
Sale of Podium Floors	3	0		68,241,398			145,649,588	200,660,318	155,288,790	231,768,520	76,869,892	229,456,629	
Sale to Bank Floors (level 3-level 12)	10	0	0	297,879,120	0		782,488,632	0	847,309,868		503,314,771		
Sale to Office Floors (level 13-level 25)	13	0	0	242,026,785	0	0	596,036,262	237,222,432	642,543,316	273,998,828	363,505,112	271,265,690	
<b>Total Cash Inflow</b>		0	0	608,147,303	0	0	1,702,012,808	614,831,884	1,850,550,427	710,148,759	1,147,049,279	703,065,025	0
<b>Cash Outflow</b>													
Land Purchase		2,500,000,000	0										
Construction Cost				298,500,000	297,007,500	295,522,463	294,044,850	292,574,626	291,111,753				
<b>Total Cash Outflow</b>		2,500,000,000	0	298,500,000	297,007,500	295,522,463	294,044,850	292,574,626	291,111,753	0	0	0	0
<b>Net Cashflow</b>		(2,500,000,000)	-	309,647,303	(297,007,500)	(295,522,463)	1,407,967,958	322,257,258	1,559,438,674	710,148,759	1,147,049,279	703,065,025	-
<b>Net After Tax Cashflow</b>		(2,500,000,000)	-	209,011,930	(200,480,063)	(199,477,662)	950,378,372	217,523,649	1,052,621,105	479,350,412	774,258,264	474,568,892	-

Table E.4: NPV Calculation of Pessimistic Scenario

The NPV has been calculated for this scenario based on the above net after tax cashflows.



### iii. Optimistic

In this scenario, it is assumed that 0.75% change in inflation per half yearly period occurs from the year 2022. The calculation per half yearly period is shown below:

Years	2021		2022		2023		2024		2025		2026	
	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2
Change in Inflation Rate per Half Yearly Period			1+0.75%	=1.0075	=1.02*	=1.023	=1.03*	=1.04*	=1.05*	=1.06*	=1.07*	
1.25%			=	= 1.02	= 1.023	=1.03	=1.04	=1.05	=1.054	=1.06	=1.07	

*Table E.5: Calculation of Change of Inflation Rate per Half Yearly Period*

Now the cashflows based on above change in inflation per half yearly period are shown below:

Cashflow Projection (in Tk)													
Cash Inflow		2021		2022		2023		2024		2025		2026	
Years		H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2
Items													
Category of Floor	No. of floors												
Sale of Basement Floors	5	0	0	0	0	0	186,944,743	188,346,828	221,386,001	223,046,296	224,719,244	226,404,638	
Sale of Podium Floors	3	0		69,098,702			153,107,744	213,585,303	167,367,817	252,934,613	84,943,874	256,742,860	
Sale to Bank Floors (level 3-level 12)	10	0	0	301,621,320	0		822,556,868	0	913,217,255		556,180,129		
Sale to Office Floors (level 13-level 25)	13	0	0	245,067,323	0	0	626,556,989	252,502,467	692,523,085	299,021,575	401,685,649	303,523,718	
<b>Total Cash Inflow</b>		0	0	615,787,345	0	0	1,789,166,345	654,434,598	1,994,494,157	775,002,584	1,267,528,896	786,671,217	0
Cash Outflow													
Land Purchase		2,500,000,000	0										
Construction Cost				302,250,000	304,516,875	306,800,752	309,101,757	311,420,020	313,755,671				
<b>Total Cash Outflow</b>		2,500,000,000	0	302,250,000	304,516,875	306,800,752	309,101,757	311,420,020	313,755,671	0	0	0	0
<b>Net Cashflow</b>		(2,500,000,000)	-	313,537,345	(304,516,875)	(306,800,752)	1,480,064,587	343,014,578	1,680,738,487	775,002,584	1,267,528,896	786,671,217	-
<b>Net After Tax Cashflow</b>		(2,500,000,000)	-	211,637,708	(205,548,891)	(207,090,507)	999,043,596	231,534,840	1,134,498,479	523,126,744	855,582,005	531,003,071	-

Table E.6: NPV Calculation of Optimistic Scenario

The NPV has been calculated for this scenario based on the above net after tax cashflows.

#### iv. Very Optimistic

In this scenario, it is assumed that 1.5% change in inflation per half yearly period occurs from the year 2022. The calculation per half yearly period is shown below:

Year s	2021		2022		2023		2024		2025		2026	
	H 1	H 2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H 2
<b>Change in Inflation Rate per Half</b>			1+1.5%	=1.015* 1.015	=1.03* 1.015	=1.05* 1.015	=1.06* 1.015	=1.08* 1.015	=1.09* 1.015	=1.11* 1.015	=1.13* 1.015	
			= 1.015	= 1.03	= 1.05	=1.06	=1.08	=1.09	=1.11	=1.13	=1.14	

<b>Yearly Period</b>													
<b>1.25 %</b>													

Table E.7: Calculation of Change of Inflation Rate per Half Yearly Period

Now the cashflows based on above change in inflation per half yearly period are shown below:

Cashflow Projection (in Tk)													
Cash Inflow		2021		2022		2023		2024		2025		2026	
Years		H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2
Half Yearly													
Items													
Category of Floor	No. of floors												
Sale of Basement Floors	5	0	0	0	0	0	192,573,803	195,462,410	231,460,070	234,931,971	238,455,951	242,032,790	
Sale of Podium Floors	3	0		69,613,085			157,717,944	221,654,373	174,983,813	266,412,855	90,136,349	274,465,184	
Sale to Bank Floors (level 3-level 12)	10	0	0	303,866,640	0		847,324,732	0	954,772,789		590,178,478		
Sale to Office Floors (level 13-level 25)	13	0	0	246,891,645	0	0	645,423,135	262,041,793	724,036,032	314,955,674	426,240,012	324,475,209	
<b>Total Cash Inflow</b>		0	0	620,371,370	0	0	1,843,039,614	679,158,575	2,085,252,704	816,300,500	1,345,010,790	840,973,183	0
<b>Cash Outflow</b>													
Land Purchase		2,500,000,000	0										
Construction Cost				304,500,000	309,067,500	313,703,513	318,409,065	323,185,201	328,032,979				
<b>Total Cash Outflow</b>		2,500,000,000	0	304,500,000	309,067,500	313,703,513	318,409,065	323,185,201	328,032,979	0	0	0	0
<b>Net Cashflow</b>		(2,500,000,000)	-	315,871,370	(309,067,500)	(313,703,513)	1,524,630,549	355,973,374	1,757,219,725	816,300,500	1,345,010,790	840,973,183	-
<b>Net After Tax Cashflow</b>		(2,500,000,000)	-	213,213,175	(208,620,563)	(211,749,871)	1,029,125,620	240,282,027	1,186,123,314	551,002,838	907,882,283	567,656,898	-

Table E.8: NPV Calculation of Very Optimistic Scenario

The NPV has been calculated for this scenario based on the above net after tax cashflows.

## Appendix F (Expected NPV, Standard Deviation and Co-efficient of Variation for a)

### i. Expected NPV:

Formula: Sum of [(Probability\*Very Pessimistic NPV) + (Probability\*Pessimistic NPV) + (Probability\*Moderate NPV) + (Probability\*Optimistic NPV) + (Probability\*Very Optimistic NPV)]

$$= [ \{5\%*(86,092,143)\} + (10\%*31,197,760.36) + (60\%*112,286,124.07) + (15\%*238,414,946.82) + (10\%*370,129,593.33) ]$$

$$=138,962,044.7$$

### ii. Standard Deviation:

Scenarios	Probability of Scenarios	NPV	(Probability*Scenario NPV)-ENPV)^2
Very Pessimistic	5%	(86,092,143)	20,525,333,528,304,600
Pessimistic	10%	31,197,760.36	18,453,121,956,834,500
Moderate	60%	112,286,124.07	5,125,181,113,887,640
Optimistic	15%	238,414,946.82	10,650,199,273,507,400
Very Optimistic	10%	370,129,593.33	10,393,616,008,058,800
Total	100%		65,147,451,880,593,000

Now, n is = 5-1=4

$$\text{Formula: } \sqrt{(65,147,451,880,593,000/4)}$$

: 127,619,994.40

**iii. Co-efficient of Variation:**

Formula: Standard Deviation/Expected NPV

: 127,619,994.40/138,962,044.7

: 0.92

## Appendix G (Sensitivity Analysis for b)

The calculations of the cashflows of the respective four scenarios are given below:

### i. Very Pessimistic:

Cashflow Projection (in Tk)													
Cash Inflow													
Years		2021		2022		2023		2024		2025		2026	
Half Yearly		H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2
Items													
Category of Floor	No. of floors												
Sale of Basement Floors	5	0	0	0	0	0	181,440,000	181,440,000	211,680,000	211,680,000	211,680,000	211,680,000	
Sale of Podium Floors	3	0		68,584,320			148,599,360	205,752,960	160,030,080	240,045,120	80,015,040	240,045,120	
Sale to Bank Floors (level 3-level 12)	10	0	0	299,376,000	0		798,336,000	0	873,180,000		523,908,000		
Sale to Office Floors (level 13-level 25)	13	0	0	243,243,000	0	0	608,107,500	243,243,000	662,161,500	283,783,500	378,378,000	283,783,500	
<b>Inflow</b>		0	0	611,203,320	0	0	1,736,482,860	630,435,960	1,907,051,580	735,508,620	1,193,981,040	735,508,620	0
<b>Cash Outflow</b>													
Land Purchase		2,500,000,000	0										
Cost				300,000,000	300,000,000	300,000,000	300,000,000	300,000,000	300,000,000				
<b>Outflow</b>		2,500,000,000	0	300,000,000	300,000,000	300,000,000	300,000,000	300,000,000	300,000,000	0	0	0	0
<b>Net Cashflow</b>		(2,500,000,000)	-	311,203,320	(300,000,000)	(300,000,000)	1,436,482,860	330,435,960	1,607,051,580	735,508,620	1,193,981,040	735,508,620	-
<b>Cashflow</b>		(2,500,000,000)	-	210,062,241	(202,500,000)	(202,500,000)	969,625,931	223,044,273	1,084,759,817	496,468,319	805,937,202	496,468,319	-

Cost of Debt	4.31%
Cost of Equity	4.81%
WACC (60% weight COE, 40% weight COD)	4.61%

NPV	(2,500,000,000)	-	191,955,955.21	(176,890,871.36)	(169,095,565.78)	773,995,099.07	170,196,985.62	791,263,575.72	346,183,148.12	537,207,892.26	316,343,939.59	-
	<b>281,160,158.45</b>											

Table G.1: Calculation of Very Pessimistic Scenario NPV

ii. Pessimistic:

Cashflow Projection (in Tk)													
Cash Inflow													
Years	2021		2022		2023		2024		2025		2026		
Half Yearly	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	
Items													
Category of Floor	No. of floors												
Sale of Basement Floors	5	0	0	0	0	0	181,440,000	181,440,000	211,680,000	211,680,000	211,680,000	211,680,000	
Sale of Podium Floors	3	0		68,584,320			148,599,360	205,752,960	160,030,080	240,045,120	80,015,040	240,045,120	
Sale to Bank Floors (level 3-level 12)	10	0	0	299,376,000	0		798,336,000	0	873,180,000		523,908,000		
Sale to Office Floors (level 13-level 25)	13	0	0	243,243,000	0	0	608,107,500	243,243,000	662,161,500	283,783,500	378,378,000	283,783,500	
<b>Inflow</b>		0	0	611,203,320	0	0	1,736,482,860	630,435,960	1,907,051,580	735,508,620	1,193,981,040	735,508,620	0
<b>Cash Outflow</b>													
Land Purchase		2,500,000,000	0										
Cost				300,000,000	300,000,000	300,000,000	300,000,000	300,000,000	300,000,000				
<b>Outflow</b>		2,500,000,000	0	300,000,000	300,000,000	300,000,000	300,000,000	300,000,000	300,000,000	0	0	0	0
<b>Net Cashflow</b>		(2,500,000,000)	-	311,203,320	(300,000,000)	(300,000,000)	1,436,482,860	330,435,960	1,607,051,580	735,508,620	1,193,981,040	735,508,620	-
<b>Cashflow</b>		(2,500,000,000)	-	210,062,241	(202,500,000)	(202,500,000)	969,625,931	223,044,273	1,084,759,817	496,468,319	805,937,202	496,468,319	-

Cost of Debt	4.31%
Cost of Equity	5.56%
WACC (60% weight COE, 40% weight COD)	5.06%

NPV	(2,500,000,000)	-	190,315,079.81	(174,627,581.04)	(166,217,000.80)	757,560,355.00	165,869,561.96	767,841,911.40	334,497,108.56	516,850,136.17	303,052,293.49	-
	<b>195,141,864.55</b>											

Table G.2: Calculation of Pessimistic Scenario NPV

### iii. Optimistic:

Cashflow Projection (in Tk)													
Cash Inflow													
Years	2021		2022		2023		2024		2025		2026		
Half Yearly	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	
Items													
Category of Floor	No. of floors												
Sale of Basement Floors	5	0	0	0	0	181,440,000	181,440,000	211,680,000	211,680,000	211,680,000	211,680,000		
Sale of Podium Floors	3	0	68,584,320			148,599,360	205,752,960	160,030,080	240,045,120	80,015,040	240,045,120		
Sale to Bank Floors (level 3-level 12)	10	0	299,376,000	0		798,336,000	0	873,180,000		523,908,000			
Sale to Office Floors (level 13-level 25)	13	0	243,243,000	0	0	608,107,500	243,243,000	662,161,500	283,783,500	378,378,000	283,783,500		
<b>Inflow</b>		0	611,203,320	0	0	1,736,482,860	630,435,960	1,907,051,580	735,508,620	1,193,981,040	735,508,620	0	
<b>Cash Outflow</b>													
Land Purchase		2,500,000,000	0										
Cost			300,000,000	300,000,000	300,000,000	300,000,000	300,000,000	300,000,000					
<b>Outflow</b>		2,500,000,000	0	300,000,000	300,000,000	300,000,000	300,000,000	300,000,000	0	0	0	0	
<b>Net Cashflow</b>		(2,500,000,000)	-	311,203,320	(300,000,000)	(300,000,000)	1,436,482,860	330,435,960	1,607,051,580	735,508,620	1,193,981,040	735,508,620	-
<b>Cashflow</b>		(2,500,000,000)	-	210,062,241	(202,500,000)	(202,500,000)	969,625,931	223,044,273	1,084,759,817	496,468,319	805,937,202	496,468,319	-

Cost of Debt	4.31%
Cost of Equity	7.06%
WACC (60% weight COE, 40% weight COD)	5.96%

NPV	(2,500,000,000)	-	187,095,824.42	(170,215,528.93)	(160,641,307.03)	725,929,546.25	157,593,891.14	723,335,769.10	312,432,312.11	478,656,164.66	278,273,623.72	-
	<b>32,460,295.44</b>											

Table G.3: Calculation of Optimistic Scenario NPV



**iv. Very Optimistic:**

Cashflow Projection (in Tk)												
Cash Inflow												
Years	2021		2022		2023		2024		2025		2026	
Half Yearly	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2
Items												
Category of Floor	No. of floors											
Sale of Basement Floors	5	0	0	0	0	0	181,440,000	181,440,000	211,680,000	211,680,000	211,680,000	211,680,000
Sale of Podium Floors	3	0		68,584,320			148,599,360	205,752,960	160,030,080	240,045,120	80,015,040	240,045,120
Sale to Bank Floors (level 3-level 12)	10	0	0	299,376,000	0		798,336,000	0	873,180,000		523,908,000	
Sale to Office Floors (level 13-level 25)	13	0	0	243,243,000	0	0	608,107,500	243,243,000	662,161,500	283,783,500	378,378,000	283,783,500
<b>Inflow</b>		0	0	611,203,320	0	0	1,736,482,860	630,435,960	1,907,051,580	735,508,620	1,193,981,040	735,508,620
<b>Cash Outflow</b>												
Land Purchase		2,500,000,000	0									
Cost				300,000,000	300,000,000	300,000,000	300,000,000	300,000,000	300,000,000			
<b>Outflow</b>		2,500,000,000	0	300,000,000	300,000,000	300,000,000	300,000,000	300,000,000	300,000,000	0	0	0
<b>Net Cashflow</b>		(2,500,000,000)	-	311,203,320	(300,000,000)	(300,000,000)	1,436,482,860	330,435,960	1,607,051,580	735,508,620	1,193,981,040	735,508,620
<b>Cashflow</b>		(2,500,000,000)	-	210,062,241	(202,500,000)	(202,500,000)	969,625,931	223,044,273	1,084,759,817	496,468,319	805,937,202	496,468,319

Cost of Debt	4.31%
Cost of Equity	7.81%
WACC (60% weight COE, 40% weight COD)	6.41%

NPV	(2,500,000,000)	-	185,516,741.67	(168,065,161.82)	(157,941,135.06)	710,709,311.15	153,637,211.94	702,192,985.19	302,017,420.67	460,743,497.29	266,727,078.34	-
	<b>(44,462,050.61)</b>											

Table G.4: Calculation of Very Optimistic Scenario NPV

## Appendix H (Expected NPV, Standard Deviation and Co-efficient of Variation for b)

### i. Expected NPV:

Formula: Sum of [(Probability\*Very Pessimistic NPV) + (Probability\*Pessimistic NPV) + (Probability\*Moderate NPV) + (Probability\*Optimistic NPV) + (Probability\*Very Optimistic NPV)]

$$= [(5\% * 281,160,158.45) + (10\% * 195,141,864.55) + (60\% * 112,286,124.07) + (15\% * 32,460,295.44) + \{10\% * (44,462,050.61)\}]$$

$$= \text{Tk } 101,366,708.08$$

### ii. Standard Deviation:

Scenarios	Probability of Scenarios	NPV	(Probability*Scenario NPV)-ENPV)^2
Very Pessimistic	5%	281,160,158.45	7,622,809,122,760,100.00
Pessimistic	10%	195,141,864.55	6,699,835,295,924,140.00
Moderate	60%	112,286,124.07	1,155,662,311,711,540.00
Optimistic	15%	32,460,295.44	9,311,799,111,434,640.00
Very Optimistic	10%	(44,462,050.61)	11,196,372,586,895,200.00
Total	100%		<b>35,986,478,428,725,600.00</b>

Now, n is = 5-1=4

$$\text{Formula: } \sqrt{(35,986,478,428,725,600.00 / 4)}$$

: Tk 94,850,511.90

**iii. Co-efficient of Variation:**

Formula: Standard Deviation/Expected NPV

: 94,850,511.90 /101,366,708.08

: 0.94