Report On

FKN Textiles Limited Organization's different vital operations

By

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An internship report submitted to the Executive Development Center, BRAC Institute of Governance and Development (BIGD), BRAC University in partial fulfillment of the requirements for the degree of
Post Graduate Diploma in Knitwear Industry Management (PGD-KIM)

Executive Development Center, BIGD
BRAC University
16th November 2025

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.

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Leads, Grant Management, BRAC Institute of Governance and Development (BIGD),
BRAC University

Letter of Transmittal

Ali Navir Khan

Leads, Grant Management,

BIGD, Brac University

66 Mohakhali, Dhaka-1212

Subject: Submission of internship report

Dear Sir / Madam,

This is my pleasure to demonstrate details of 5 departments of FKN Textiles Limited, which I was appointed by your direction.

I have attempted my best to finish the report with the essential data and recommended proposition in a significant compact and comprehensive manner as possible.

I trust that the report will meet the desires.

Sincerely yours,

_____

Student Full Name: Nur Uddin Ahmed

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Executive Development Center, BIGD

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Date: November 16th, 2025

Non-Disclosure Agreement

This agreement is made and entered into by and between FKN Textiles Limited and the undersigned student at EDC, BIGD, BRAC University.

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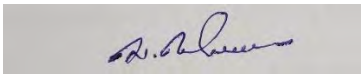
Industry Supervisor's Full Name & Signature:



Md. Rizaur Rahman
Operations Head, FKN Textile Limited

Acknowledgement

First and foremost, thanks to Almighty for giving me the opportunity to reach the end of the PGD KIM course. I would be grateful to Operational Head Sir of FKN Textiles Limited for guiding me all the way to finish the report.

I am indebted to the Managing Director of FKN Textiles Limited for allowing to write a report on this company.

I am grateful for all the department supervisors like dyeing, finishing, lab, administration and finances for all the support. Otherwise, it would be very difficult to finish the report. Credit goes to all the stuffs of the various departments too.

No words can express the counselling and the support of my Academic Supervisor; without him it would not be possible to complete it. He has been helpful all throughout the period.

Credit goes to the BRAC Institute of Governance and Development (BIGD), as they supported to me all over the course.

Acknowledgement should go to our Director Madam of PGD KIM for creating such a standard work-related course, which helped in many ways in RMG sector.

Lastly, I am grateful to World Bank for financing the course and BRAC University for giving me the chance for the completion of the subject.

Executive Summary

The time span for completing the report was around 12 weeks. I had worked on many departments like batching, lab, water treatment plant (WTP), effluent treatment plant (ETP), finance, account, planning, security and many others. The most important department is the dyeing and finishing unit; since it generates output. The dyeing unit consists of fongs machine along with the highly skilled manpower to produce optimum quality output so we can have a good place in a highly competitive market. Our water consumption by using this machine as the material:liquor ratio is 1:6. Most of chemicals are being imported from Europe (Switzerland, Germany and Turkey) and China to meet the desired output. All the chemicals are sustainable and meet the compliance standard. It does not harm the environment by any means. The effluent treatment plant (ETP) reuses 10% of the effluent and its being send back to dyeing for reusing. Chemical is being used here. Rest of the effluent is being processed to neutral pH (7) before dumping to the local water body. Boiler's hot water is being used in dyeing, leading to less energy consumption. Our main goal is to provide sustainable dyed fabric to the apparel company so they can produce high quality garments with it. I think the courses that are used in the class like business communication helped me a lot during internship report. New machines can be introduced in the dyeing and finishing floor to increase the overall efficiency. In conclusion the report helps me to enhance my skill in writing in a concise way.

Keywords: dyeing and finishing unit; state-of-the-art machineries; highly skilled manpower; material:liquor ratio is 1:6; sustainable; reuses; neutral pH; sustainable dyed fabric

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ETP	Effluent Treatment Plant
WTP	Water Treatment Plant
BIGD	BRAC Institute of Governance and Development
GSM	Gram Per Square Meter
DMF	Dual Media Filter
HCL	Hydrochloric Acid
pH	Power of Hydrogen

Chapter 1

About FKN Textiles Limited

1.1 Overview of the Industry

FKN Textiles Limited was formed in 1997 in Tarabo, Narayanganj. They are the pioneer in knit all over print (AOP) in Bangladesh. At their initial stage, they ran by a printing and stentering machine. It's been almost 3 decades; they are in the business. There are 3 units; 2 are in Narayanganj and one is in Savar, Dhaka.

The company has 12 flatbed printing machines, along with knitting, dyeing and finishing units. They have a small garments unit too. Almost 800 employees work in this company. Mostly, they do sub contract work of big garments like DBL Group, Masco, HAMS, microfibre and many others. They have a good water treatment plant (WTP) and Effluent Treatment Plant (ETP).

1.2 Vision & Mission

The company's vision is to provide the optimum printed fabric at the lowest price. The quality of the print is very high. Our mission to thrive in the printing sector as much as possible. In order to be competitive in the market; good quality machines are being used to bring out the desired output.

1.3 Goals & Objectives

Our main target is to reach sustainability in every aspect of the company. Optimum production is required to achieve. We are planning to supply all sorts of printing solutions to the client like chest printing and digital printing which we do not currently have. Employee and customer's satisfaction is our top priority. In every production department, high end chemicals are used to produce good quality fabric. We started dyeing production since 2016, every day we try to produce 7000 kilograms of dyed fabric. 30% of water is being reused for dyeing, we are trying to increase by 10%.

1.4 Organizational structure, Organogram, Branches and Departments

Traditional top-down structure is being followed since the beginning.

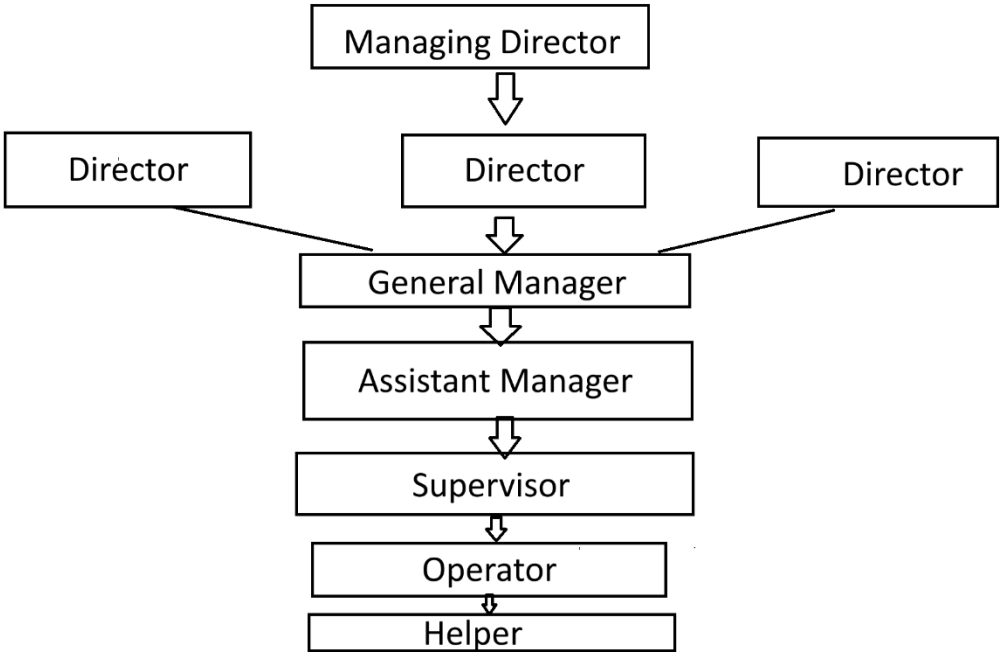

Fig: Organogram of FKN Textiles Limited

They are several branches in the company: Batching, dyeing and finishing

Lots of departments harmoniously work together to produce the optimum output. We have finance, administrative, security, accounting, production, batching, finishing, mechanical and electrical departments.

1.5 Products/services produced by the industry

They are several branches in the company: Batching, dyeing and finishing. Lots of departments harmoniously work together to produce the optimum output. We have finance, administrative, security, lab, accounting, production, batching, finishing, ETP, WTP, mechanical and electrical departments.

Chapter 2 Description about Task Accomplishment

During my internship work, I worked on several departments in my office. For this report; I will write about the five departments I have worked with. They are:

2.1 Batching

2.2 Lab

2.3 Dyeing Department

2.4 Finishing Department

2.5 ETP and WTP

2.1 Batching

I think batching is the first step to prepare the fabric for dyeing. It is the process of receiving and sending the grey fabric to the dyeing section according to the color and lots. Here the customer gives the fabric to the batching section for sorting out according to the order sheet. Then the batch according to the quantity of the machine. It's one of the fundamental parts of the dyeing floor, one mistake can lead to the wrong dyeing of the entire lot.

2.1.1 Objective

After working over a week in the batch section, the main objectives are to prepare the batch according to the order sheet, machine capacity, machine's ability and type of fabric. I have seen how the batch card is being prepared. The batch has to be prepared in such a way that no dyeing machines are kept idle. For each nozzle, fabric has to be divided equally and weighed for the machine by the batch section, otherwise entanglement in the fabric may occur; which leads to uneven dyeing. Rope length is required to maintain in the batch section. Collar and cuff are weighed properly and added to the dyeing floor. Fabric's Gram per square meter (GSM) and color has to be considered while preparing a batch.

2.1.2 Batch management

Generally, I have seen the batch is being ordered by the dyeing manager according to the urgency and it is being prepared by the batch manager. So, no machine is being kept idle in the dyeing floor. Reprocess batch are also prepared by the batch section.

2.1.3 Process and precaution

In this factory, I have observed the process of batching. Firstly, the batch is being prepared according to the requirement from the dyeing floor. According to the quantity, the batch is being made and divided to the nozzle of the machine evenly. For single jersey (S/J) fabric, it is turned by the air turner machine so the face side does not get any unevenness after dyeing. The fabric is being stitched by the stitching machine and made it into ropes. Collar and cuffs are being added together.

The main precaution that is needed to be observed while preparing a batch is to send fabrics in all nozzles of the machines evenly, otherwise it can get entangled inside the machine.

2.1.4 Machines used in the batching section

The main machines that are used in the batching units are the air turner machine which is used to turn the fabric. Weighing scale is being used for measuring the weight of the fabric. Overlock machine is being used here to join the end of the fabric roll.

2.2 Lab section

I think lab section is the heart of the dyeing floor. Here, a recipe is being made which colors will match with that of the given swatch from the buyer via trial-and-error method. Different colors and chemicals are experimented in the lab to get the optimum recipe which is cost effective for the company. Before bulk production, a dyeing sample is made according to the customer's standard and is being sent for approval; which is known as lab dip.

2.2.1 Purpose of lab

I think the main purpose of the lab is to produce the lab dip according to the buyer within a short period of time. The lab dip swatch needs to get approved from the buyer. I think the recipe has to be prepared in such a way that it does not deviate from the bulk production. Lab recipe is only successful when the bulk recipe needs less adjustment. Different types of chemical and physical test are done on the fabric. The deviation of the shade is being measured by spectrophotometer machine. If the value lies within the standard measurement, it passes.

2.2.2 Machines in the lab:

We have 3 washing Electrolux washing machine for washing the swatch. I have observed the effect of 20 times washing of a garment to check the quality; it passes the quality requirements. We also have 2 dryers of the same brand, which is used to dry to swatch. Verivide light box is

used to check the shade of the fabric. Pilling machines are used to check the pill of the fabric. James Heal fabric rubbing machine is used to test the rubbing fastness of the fabric; both in dry and wet condition. Dimensional stability measuring scale is used to measure how much shrinkage the fabric gained after washing and GSM (Gram Per Square Meter) cutter is used to measure the GSM of the fabric. LABTEC sample dyeing machine is used to dye the small swatch. Spectrophotometer is used to measure how much the color deviated from the given swatch.

2.2.3 Dyeing in the sample unit

In the sample unit, I tried to dye a black swatch according to the buyer's swatch, and it matched after 3 trials. Firstly, I matched the swatch with the black swatch from the lab unit. Then after doing some adjustment in the recipe; I put the grey swatch in the labtec dyeing machine. After few trials, the test sample matched with the given swatch of the buyer. The rubbing fastness report's result was 3-4 which matched with the buyer's requirements. Dry rubbing fastness and weight rubbing fastness also matches with the standard range.

2.3 Dyeing Department

Before dyeing, I have observed that pretreatment process has to be carried out.

Sometimes protonic treatment is done in the first stage of pre-treatment process. The purpose of this treatment is to increase the absorbency of the fabric.

2.3.1 Pretreatment

Scouring & Bleaching:

Grey fabric contains fat, waxes and other impurities. These impurities have an adverse effect on the dye uptake of the fabric. This leads to improper dyeing, printing and finishing process. These impurities are removed from the fabric by a chemical treatment. This treatment is called the scouring process. On other hand bleaching is a process which removes the natural colouring materials and imparts the adequate whiteness to the fabric. In factories, scouring and bleaching of the fabric is done in one bath or combine process. I have seen this process initially.

Bio-scouring:

FKN Textiles has recently introduces a new type of scouring with enzyme which is called bio scouring. In this process some special types of composite chemicals are used which contain enzyme, sequestering agent, hydrogen per oxide etc.

Peroxide killing and Enzyme treatment:

Per oxide killing is done to remove the remaining hydrogen per oxide after the bleaching process. Enzyme treatment is also done to remove the protruding fibre from the fabric surface. It is also known as Bio-polishing. Then the fabric is ready for dyeing.

2.3.2 Dyeing Process

I have observed that salt is being added to the fabric with 2 to 3 dosing according to the shade of the fabric. Then color is added with 2 to 3 intervals: if it is added all at a time, uneven shade can come. After these 2 processes, soda is being added for fixation. The process is being run for 40-60 minutes to obtain the required shade. Neutralization is done by acid after obtaining the shade. Soaping is done finally using soaping agent to remove any unhydrolyzed dyestuff. Finally, softener is being added to enhance the hand feel of the fabric. If the shade does not match, stripping or addition is being done to require the acquired shade.

2.3.4 List of machines

I have observed that the total capacity of the dyeing in this floor is 7 tonnes per day. Reactive and disperse dye can be done in this floor. Here, we have two 1 tonne capacity of Fongs machine. There are two 500 kg capacity dyeing machines also from the Fongs brand. We also have 250 kg and 700 kg capacity Fongs machine respectively. These are all high pressure and high temperature machines. We also have 2 sample dyeing machines which are of 50 and 60 kg respectively, both are from Texlink brand.[1]

2.3.5 Working on a Critical Shade

Turquoise shade is one of the toughest in dyeing department. Lots of problems like dye spot, uneven dyeing and running shade are common in the process. Firstly, I have observed that scouring is done for 70 minutes to obtain the optimum result. Generally, 60 minutes are used, here 10 extra minutes are added to get the maximum outcome. 1:7 material: liquor ratio is used. Since, turquoise colors are bigger than the normal color; more water is required to transfer the color to the fabric. After the enzyme process, salt is given in the machine in 3 intervals for the even transfer of charge to the fabric. Turquoise color is first dissolved in a drum then it is filtered using a fabric and then added to the dosing tank. By this process, any lump from the color is being avoided.

Salt and soda are being added within 1 hour with six intervals. Then a runtime of 1 hour is being given to obtain the shade at 80°Celsius. Neutralization is being done by acid and soaping is done with a soaping agent to remove any unhydrolyzed dyes.

2.3.6 Critical Assessment

The water supply in this region is quite good, since the water is extracted from only 150 feet. The gas supply is extremely good in this area, since directly the gas is being connected from the main line.

The major obstacles that are being encountered in this floor is the hardness of the water. Huge amount of sequestering agent is used to overcome this. New models and more functions with low liquor ratio like 1:4 is available in the market. Here 1:6 liquor ratio is used, so more chemicals are consumed.

More production can be done if new machines and multi-functional chemicals are introduced in the project

2.4 Finishing department:

Textile finishing, in a restricted sense, is the term used for a series of processes to which all bleached, dyed, printed or certain grey fabrics are subjected before they are put on the market. In fact, finishing includes the final treatment of every kind of fabric made from every kind of fibre.

2.4.1 Objective of finishing

I think the object of the finishing is to improve the appearance of the fabric. It also improves the hand feel, softness of the fabric. The weight of the fabric is also increased. Special finish like water proofing can be done in the finishing. Crease recovery, dimensional stability, abrasion resistance, tear strength, soft handle and good luster can be achieved in the finishing.

After dyeing, knit fabric is required finishing. During dyeing, all fabrics are dyed in tubular form. But according to buyer's requirement knit fabrics are finished in tubular form or open width form. There are two types of finishing; one is mechanical finishing and the other is chemical finishing. Mechanical finishing changes the physical appearance of the fabric whereas chemical finishing includes chemicals which react with the fabric and change the outlook of it.

2.4.2 Finishing sequence:

I have observed the finishing sequence for a tubular fabric, firstly after dyeing it goes through the squeezer machine to drain out all the water from the dyeing machine. Then it goes through the dryer for drying. Compacting machine is then used to have proper compaction and dimensional stability. Also, softener is being used to improve the hand feel.

For an open width fabric, I have observed the fabric goes through the slitting machine so the water is being drained out and it is cut through the needle mark, so the fabric is being opened. Then it goes through stenter for drying and softening in the padder. Finally, compaction is being done in the compacting machine. Also, dimensional stability and GSM is being improved here. Fabric is inspected for any kind of faults, then it is delivered.

2.4.3 Machines in the finishing floor

I have observed that in the finishing floor, we have both the tube finishing machines and open width finishing machines. Squeezer machine is from carina brand and is used to squeeze out the water after dyeing the fabric. Slitting machine is used to cut the fabric along the needle mark of the tube fabric. Water can be squeezed out by the slitting machine. Fabric is opened in this machine. We have a fongs dryer machine, which is used to dry the tube fabric. One of the main important machines in the finishing floor is the stenter machine. For lycra single jersey: heat set can be done at a very high temperature of 180℃. Softener can be inserted in the padder of this machine; fabric softening can be done over here. Dimensional stability is sometimes controlled in this machine. Overfeed and underfeed is given here. We also have open width compacting and tubetex compacting machines. Both are used to have fabric compaction, so required shrinkage and dimensional stability can be achieved.[2]

2.4.4 Review

Overall, the finishing floor is quite adequate to process everything from the dyeing floor. Few machines like slitting, compacting and stenter can be upgraded to increase the production capacity.

2.5 Water Treatment Plant and Effluent Treatment Plant

2.5.1 Water Treatment Plant

Plant type: softener plant (resin softener)

(resin softener) Capacity: 20m^3/hour

Here in WTP plant, the source is the surface water. By using various pump and pipe arrangement, surface water is carried to the raw water tank. After that water is passed through a tank where Dual Media Filter (DMF) is situated. There are three sand and stone beds and the ratio of these beds are 1:2, 1:3 and 1:4. Dirt is being removed by this filter. Then the water is passed through a carbon filter to remove odor. After five to six hours, the back wash is needed to keep these filters clean and free from dirt. Then the raw water enters the water softening unit where Resin softener is used for removing the hardness of water. After sometimes this softening chemical loses its softening capability. For this Sodium Chloride is used for renewing its efficiency.

2.5.2 Standard Water Quality for dye house

Minimum Standard	Permissible Concentration
Color	Colorless
Smell	No bad smell
Water hardness	< 50
PH Value	7-8 Neutral
Dissolved solid	< 1 mg/l
Inorganic salt	< 500 mg/l
Iron (Fe)	< 0.1 mg/l
Manganese (mn)	< 0.01 mg/l
Copper (Cu)	< 0.005 mg/l
Nitrate (NO3)	< 50 mg/1

Table 1: Standard quality for water in dye house

2.5.3 Effluent Treatment Effluent Treatment Plant (ETP)

Industries throw waste water into rivers, canals etc. before dumping this liquid outward, the plant which treats this effluent to a harmless form for the environment is known as Effluent treatment plant (ETP). It is very important and essential to keep the environment free.

Nowadays, ETP is one of the most important part to maintain sustainability in textile industry. Government, Environmental Association and foreign buyers are creating pressure to set ETP in every textile industry. So, to ensure the proper growth of textile sector and pollution free environment all textile industries have to set up an ETP.

Functions of different part in ETP:

Equalization tank:

I think this is the first tank of ETP plant. Here, effluent (which contains many chemicals) is mixed with air and thus the chemical gets mixed uniformly in the waste water.

Lime tank:

In ETP, lime tank is used to mix lime with the waste water. Lime is used to change or remove the color of effluent and to increase the transparency of water.

Polymer tank:

In polymer tank, poly electrolyte chemical is used. Poly Electrolyte helps to make the agglomerated materials which helps to make the agglomerated materials be gummy for easy deposition below the surface of water.

Ferrous Sulphate tank:

Here ferrous sulphate is mixed with the effluent. Ferrous Sulphate is used for the agglomeration of the foreign matters present in the effluent.

Primary Clarifier:

Here the water gets separated from the waste chemicals. The coagulation of the chemicals remains under water and the water is passed over it. Required amount of HCl (Hydrochloric) acid is also added here to control the pH (power of Hydrogen).

Sludge tank:

The waste chemicals are kept on the sludge tank for damping. Then they can supply this sludge to a cement factory as their raw material.

Aeration tank:

Here growth of bacteria is controlled in this tank. Bacteria control the rate of BOD and COD of the effluent.

Chapter 3

Critical assessment about Internship works

I think this chapter is one of the significant parts in this report. I will discuss about what I have learned about the internship of 2 months. The material contents of my course also help me to understand about the various operations of my office. This report writing format is quite structured.

3.1 Application of Generic and Industry specific courses during internship

I think the structure of the report produced by the BRAC university is quite organized and helpful. It helped me to go through the 5 departments minutely throughout the internship course. The business communication skill that I had in the first semester helped me to write the report in a well-structured format. That course also conveyed me the formal language that helps me organize this report. The human resource course helped me to get a good understanding about the organization's structure.

I also learned technical knowledge from the first and second semester also. Different kind of operational ideas were given in the second semester like dyeing, finishing and labs which was useful while doing the internship course. Industrial engineering course was quite convenient as it helps me to understand and see the different operations like kanban and others.

Though the course design was very organized, I think more backward linkage like dyeing, finishing, knitting and yarn courses can be added. Well depth knowledge is required in these sections, otherwise a person cannot get the whole picture.

3.2 Suggestion for industry improvement

Though FKN Textiles Limited is organized, I think there are plenty of rooms for improvement. Wastage can be controlled during dyeing and finishing process. Multi-functional chemicals can be used to decrease the consumption of water. Time taken to dye the fabric can be reduced by using automatic dosing of salts and chemicals. Machines with lower liquor ratio can be introduced to increase the efficiency of output. In batching section, new turning machine is required for faster batch output. Few machines are required in the lab section too. Brush machine is needed in the finishing department as the fleece fabric is sent outside for brushing. Old boiler can be replaced with the new one, so energy consumption can be reduced. Maintenance has to be done at a regular basis for reducing the breakdown of machines during operation. Safety measures is required to enhance more to avoid any mishaps.

3.3 Learning for self-improvement

This internship helped me in a lot of ways. First of all, it helped me to polish my skills in report writing. I learned to write precisely and able to put information in a concise way after doing this internship course. My communication skill is also improved after meeting various people to gather information for the report. Time management is also enhanced as I went through 5 different departments to write reports about it. I also learned new dyeing technique while doing the internship course like the dyeing of viscose fabric which is a lengthy process. I also worked with new chemicals during the internship course, which improved my knowledge in this field.

Chapter 4

Conclusion

4.1 Conclusion about FKN Textiles Limited

It's been a great pleasure that I can write a comprehensive report about FKN Textiles Limited for the BRAC University. It took almost 2 months to finish the internship course. I went through 5 different departments and wrote a report about it. I learned a lot during this period. I did a lot of trials with the new chemicals and dyes to improve the quality of the fabric and reduce the production time. Overall, to improve the production of the factory, new machines have to be introduced especially in dyeing and finishing floors. This internship helps me to learn about administration, finance, security, maintenance and utility department of the factory.

During the internship, I learned that FKN textiles Limited always seek to give the optimum products to the customers. It has garnered a great reputation in the all over print of Bangladesh, since it's one of the pioneers in this sector. Though the dyeing unit is new, I think the company is trying to build a good reputation in that sector too. I think the raw materials and the chemicals that are used to dye the fabric are of optimum quality.

Finally, I hope the internship will help me in numerous ways to further progress in my sector.

References

[1] Company Profile, 2017, Page: 4-7

[2] Company Profile, 2017, Page: 8-11