

REPORT ON KNIT GARMENT MANUFACTURING: A
COMPREHENSIVE STUDY OF MARKETING, MERCHANDISING,
AND PRODUCTION PROCESSES AT FAKIR APPARELS LTD.

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Post Graduate Diploma in Knitwear Industry Management (PGD-KIM)
Executive Development Center, BIGD
Brac University
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Report on Knit Garment Manufacturing: A Comprehensive Study of Marketing, Merchandising, and Production Processes at Fakir Apparels Ltd.

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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

March 2026

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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:

Md. Zakir Hussain
Student ID: 1000055598

Academic Supervisor's Full Name & Signature:

Md. Johirul Islam
Senior Research Associate
BIGD, Brac University

Letter of Transmittal

Md. Johirul Islam

Senior Research Associate

BIGD, Brac University

Subject: Internship report on Knit Garments Industry.

Dear Sir,

I am working as an Assistant Manager in Fakir Apparels Ltd. During my internship period, I worked in various departments to gain practical knowledge and to complete my internship report. During this time, I worked diligently to complete my report, and I believe it will satisfy your expectations.

I trust that the report will meet the desired expectations.

Sincerely yours,

Md. Zakir Hussain

Student ID: 1000055598

Brac University

Date: 08/03/2026

Non-Disclosure Agreement

This agreement is made and entered into by and between Fakir Apparels Ltd. Group Industries and the undersigned student at EDC, BIGD, Brac University for employment Investment Program (SEIP). To complete this internship, I had collected vast data from the marketing & merchandising team concerning their remaining strategies which was actually considerably helpful for me to complete the report. I commit not to share any of the confidential information mentioned in this report with any unauthorized party.

Student's Full Name & Signature:

Md. Zakir Hussain

Student ID# 1000055598

Industrial Supervisor's Full Name & Signature:

Md. Enamul Hossain Khan

Manager

Fakir Apparels Ltd.

Acknowledgement

At first my gratefulness goes to Almighty for giving me strength and ability to complete the industrial training and this report. You have made my life more bountiful. May your name be exalted, honored and glorified.

I extend my heartfelt appreciation to my industrial supervisor, Md. Enamul Hossain Khan, for his invaluable guidance and suggestions that steered me towards the successful completion of this training. His assistance was instrumental in enabling me to gather pertinent information from various departments within a limited timeframe.

I am indebted to my Academic supervisor, Md. Johirul Islam at BIGD-Brac University, whose unwavering support has been an immeasurable asset throughout the entire session. His consistent guidance and mentorship have truly been invaluable.

I would like to offer my special thanks to the management of Fakir Apparels Ltd. for granting me the opportunity to undertake my industrial attachment within their organization. My sincere appreciation also goes out to the authorities at the Executive Development Center, Brac University, for devising such a comprehensive and impactful course that incorporates an industrial training component.

Lastly, I wish to express my deepest gratitude to my family members who have been a constant source of support, encouragement, and assistance whenever I required it.

Executive Summary

The report aimed to analyze the key trends and challenges, and propose relevant recommendations to enhance productivity, sustainability, and competitiveness.

A comprehensive review of the company's manufacturing processes was conducted, focusing on efficiency, quality control, and waste management. By implementing lean manufacturing techniques, investing in advanced automation technologies, and enhancing quality control measures, the company can increase productivity and also reduce costs. This report recommends the implementation of a sustainability strategy that encompasses responsible sourcing of raw materials, energy-efficient manufacturing processes, and waste reduction measures.

Furthermore, the report emphasizes on digital transformation for the company. These technologies can also help gather valuable insights into consumer preferences, enabling the company to develop personalized products and improve overall customer satisfaction.

In conclusion, this report focuses on sustainability, efficiency, and digital transformation. Implementing the above recommendations will not only enhance productivity and sustainability but also foster innovation, customer satisfaction, and long-term success.

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Chapter 1

About Organization

Knitwear is Bangladesh's major ready-made garment (RMG) export earner, accounting for 46.34% of the country's exports in FY 2022–2023 and generating over USD 25 billion, making it one of the country's main economic drivers. With more than 1,500 facilities, the industry focuses on producing high-volume, reasonably priced goods including t-shirts, polo shirts, and underwear for international retailers like Zara and H&M.

Fakir Apparels Ltd. (FAL) was founded by Fakir Maniruzzaman, inspired by a distinguished family legacy in the Narayanganj textile industry. This legacy traces back to the early 1960s, when his father, Al Haj Yousuf Ali Fakir, laid the foundation for the family's involvement in manufacturing. The tradition was further strengthened in the 1990s when his brother, Fakir Akhtaruzzaman, established the region's first ready-to-wear factory, Fakir Knitwear Ltd. In its early years, Fakir Apparels Ltd. operated as a subcontractor for Fakir Knitwear Ltd., before reaching a defining milestone by securing its first direct orders from H&M. This strategic partnership proved transformative, as H&M's collaboration and technical support enabled the company to modernize its infrastructure and elevate its production standards.

Today, Fakir Apparels Ltd. stands as a fully vertically integrated, 100% export-oriented textile composite knit manufacturing company. As a composite facility, every stage of garment production—from knitting and dyeing to finishing and packaging—is seamlessly executed under one roof, ensuring efficiency, quality assurance, and operational excellence. The enduring partnership with H&M remains the cornerstone of FAL's business, accounting for approximately 70% of its total orders and affirming its position as a trusted supplier. The remaining 30% of its portfolio comprises other prominent international buyers, including Primark, C&A, POP, s.Oliver, and Inditex. Through its advanced technology and integrated manufacturing model, FAL effectively meets the evolving demands of the global fast-fashion industry.

1.1 Outline of Fakir Apparels Ltd

Al Haj Yousuf Ali Fakir was the first to venture into the textile industry in the early 1960s. His concern of a large yarn trading operation was based in the bustling business district of Narayanganj. In a little time, the business grew exponentially in revenue and size and the highly ambitious entrepreneur expanded his trading operations countrywide adding jute, dyes and chemicals. In 1980 the family saw passing of a model father and a business pioneer of his generation. The stage was set for a new generation to takeover.

A rising opportunity in the readymade garment sector in the 1990s was quickly seized by Fakir Moniruzzaman son of Al Haj Yousuf Ali Fakir and after overseeing multiple garment operations in 1998 he founded Fakir Apparels, a vertically integrated organization. Mr. Fakir Moniruzzaman was the founder of this Fakir Apparels. Now it has grown to be one of the leading apparel providers in Bangladesh. Engaged in the marketing, development and manufacturing of apparels, Fakir has employed around 12000 people in their companies.

Fakir has become one of the largest manufacturers in Bangladesh. Fakir Apparel Ltd is one of their major and the oldest factory. Through a wide range of products & services, it has earned the goodwill producing approximately 4.5 million pieces of garments per month. Fakir has become among the largest vendors in Bangladesh for both C & A, H&M, Primark, Esprit. It has consistently excelled with a strong performance record of 30% annual growth over the last few years. The company is always exploring new markets across the world with an experienced perspective, contemporary professionalism and high-end technology.

The woven business operation of Fakir Apparels Ltd. has been started in 2018, offering a diverse range of product mix from washed bottoms, jackets to heavy outerwear jackets and coats. Today its garments have a footprint in over 45 countries with North America, Europe, Middle East, Asia and Australia as our it's market

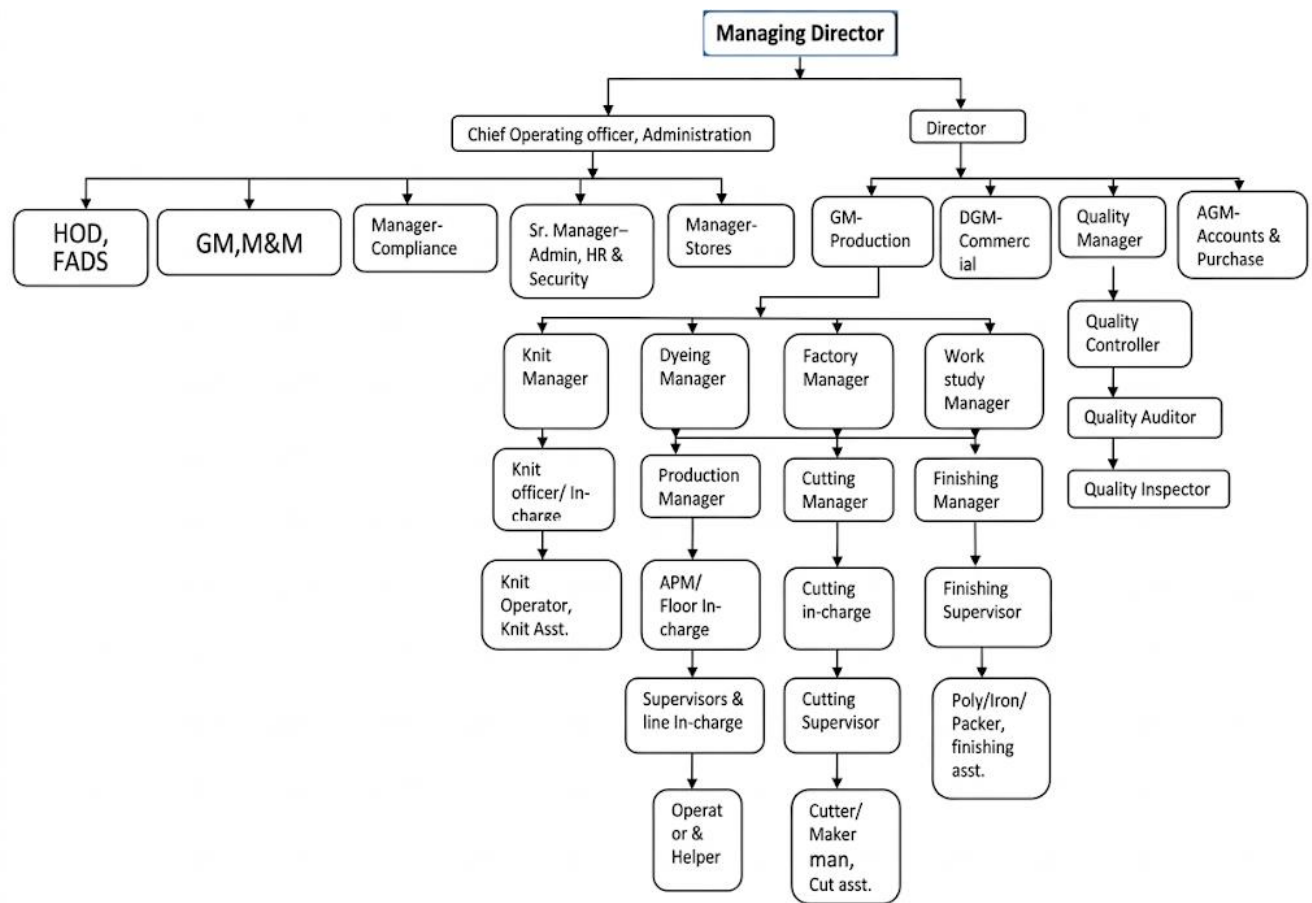
Products: Knit Item

MENSWEAR	Shirkets, Basic t shirt, hoodies, joggers, bombers, sweatshirts, tanks, shorts.
WOMENSWEAR	Dresses, jumpsuits, t-shirts, tanks, camisoles, sweat dresses, shorts, leggings, sweatshirts.
KIDSWEAR	Onesies, kid's jumpsuits, t-shirt sets, shorts, hoodies, sweatshirts, capes.

Products: woven Item

MENSWEAR	Padded and Non-Padded Real Down Jackets, Fake Down Jackets, Trench Coats, Long and Short Fashion Jackets, Seam Sealed Jackets & Rain Protector, Cycling Jackets, Ski Pants, Ski Jackets, Ski Over-all etc. Woven casuals and active wear range covers Denims, Washed and Unwashed Trousers and Cargos Pants, performance Shorts, Jeggings, Joggers, Jackets.
WOMENSWEAR	Same as men's wear
KIDSWEAR	Padded, Non-Padded Real Down Jackets, Fake Down Jackets, Seam Sealed Jackets & Rain Protector, Ski Pants, Ski Jackets, Ski Over-all etc. Woven casual Denims jackets and bottoms Cargos Pants, Shorts, Over-all.

Organogram of the factory



Major Buyers of Fakir Apparels Ltd



ESPRIT

MANGO

ARKET

& other Stories

COS

s.Oliver

PRIMARK®



POLARN O. PYRET

INDITEX

MOVE

LC Waikiki

1.2 Vision and Mission

The main aim of Fakir Apparels Ltd. to increase people's competencies and enable them to align with world-class manufacturing practices and processes. Here professional growth of their people will also ensure. The company is committed to maintain the quality standards of best brands worldwide while particularly committing to sustainability requirements. They aim to create a culture of innovation in product development and in all processes. The company also aims to consolidate relationships with their esteemed suppliers and make them partners in growth. They aim to harness ICT to its full potential and apply tools and processes like ERP, EPM, BI, and exploring Industry4.0, to significantly improve efficiencies. The company aims to challenge conventional methods of garment manufacturing through pioneering innovations in design, processes, and practices that will accelerate their shift towards a sustainable future.

1.3 Goals & Objectives

The main goals and objectives of Fakir Apparels Ltd. focus on quality, sustainability, compliance, and customer satisfaction. Fakir Apparels Ltd. has a clear vision for the future, with the primary aim of becoming a company that earns complete trust.

Customer satisfaction is our top priority. We are committed to producing high-quality garments, ensuring that every shirt, trouser, and dress is made to the highest standard. Timely delivery is equally important to us, and we strive to meet deadlines consistently. Our goal is to build strong, long-term partnerships with leading global brands.

We are also strongly committed to protecting the environment. By 2025, we aim to significantly increase the use of recycled and environmentally friendly materials in our products. In addition, we are taking active steps to address climate change by reducing energy consumption in our factories. Our target is to cut our carbon footprint by 56% by 2030.

Moreover, we want to be a company that people can be proud of. Compliance is a core value for us, meaning we strictly follow all regulations and ethical practices. We continuously work to meet international standards such as ISO, GOTS, and OEKO-TEX. These certifications reflect our

commitment to providing safe working environments, ensuring fair and respectful treatment of employees, and producing garments that are free from harmful chemicals and safe for consumers. At the same time, we continuously improve our production processes by adopting modern technology and innovative methods to reduce waste and increase efficiency. Maintaining compliance while striving for continuous improvement is our promise and demonstrates our reliability as a trusted organization. In simple terms, our commitment is to produce excellent garments, protect the environment, and operate as a responsible, ethical, and progressive company.

1.4 Organizational Branches and Departments

The organization has a well-structured production system comprising several major branches and departments, including knitting, dyeing, finishing, washing, printing, embroidery, design studio and CAD, knit sewing, and woven sewing. The knitting division is equipped with 188 circular knitting machines and 10 flat-bed knitting machines, generating a knit business valued at USD 150 million. Its major buyers include H&M, Primark, C&A, Esprit, S.Oliver, O'Neill, Gerry Weber, Inditex, Mango, Arket, & Other Stories, and COS. This division mainly produces womenswear, menswear, and childrenswear, with core products such as sweatshirts, hoodies, joggers, T-shirts, polo shirts, shorts, skirts, and dresses. It also produces a variety of fabrics, including fleece, terry, interlock, mesh, jersey, and blended fabrics.

The dyeing division operates 62 machines with a daily capacity of 50 tons of fabric, using winch dyeing machines from brands such as Sclavos, Thies, ATYC, Fongs, and AK. Its main dye types include reactive dyes, disperse dyes, and pigments. The finishing division has a similar daily capacity of 50 tons and performs processes such as slitting, drying, stentering, heat setting, compacting, brushing, singeing, and combing.

The washing division has a capacity of 26,000 units per day and offers a wide range of washing treatments, including silicone, enzyme, burnout, pigment, acid, and deep dye washes, along with special effects such as snow wash, rain wash, and glitter wash. The printing division can produce 130,000 units per day and provides various print types, including pigment, foil, flock, puff, metallic, discharge, glitter, silicone, and photo print, using machines from M&R, Schenk Spider, and Alpha 8.

The embroidery division produces 18,000 units and 30 million stitches per day, with capabilities in flat embroidery, all-over embroidery, sequin embroidery, and six-color chenille embroidery. It is equipped with 72-head Tajima machines. The design studio and CAD department occupies 14,000 square feet and uses software such as CLO 3D, VSR, and WGSN for design and development.

The knit sewing division operates 139 sewing lines and follows a one-piece flow system supported by FASTREACT software. The woven sewing division operates 28 sewing lines and produces items ranging from swim shorts and washed garments to padded jackets, parkas, and down jackets. It uses specialized machinery such as template quilting, down filler, and seam seal machines. Its major buyers include C&A, Celio, LC Waikiki, LPP, COS, and Gerry Weber, and it achieved an export volume of 1.5 million units in its first year.

Chapter 2

2.1 Marketing and Merchandising

My internship journey began in the Marketing and Merchandising department, where both functions are closely integrated. Employees in this department are required to handle marketing and merchandising activities at the same time. During my internship, however, I was more involved in the merchandising side of the work.

One of the key tasks I observed and assisted with was preparing a costing quotation in response to a buyer inquiry. In one instance, a buyer from Inditex sent an email asking for the FOB price and lead time of a selected style. Since an incorrect FOB calculation can result in a significant financial loss for the company, preparing the quotation required careful attention and accuracy.

To begin the process, I opened the Microsoft Excel quotation sheet and entered the required information. The first part of the cost sheet contained the basic data of the style, including the style name, which in this case was *Sudadera Interlock Polo*, fabric composition of 86% organic cotton and 14% recycled polyester, interlock construction, fabric weight of 260 GSM, offer quantity of 10,000 units, expected delivery date of 30 December, and the buyer's target price of USD 8.

After completing the basic information, I moved to the fabric cost calculation section. For this part, I needed data from other departments. Since the quotation sheet was designed to calculate the cost per dozen, the final FOB per piece had to be obtained by dividing the total by 12. To calculate fabric consumption, I contacted the CAD department. After reviewing the style tech pack, they provided the required fabric consumption sheet, commonly known as a costing marker. According to the costing marker, fabric consumption for this style was 7 kg per dozen, meaning 7 kg of fabric would be required to produce 12 garments. I then entered this information into the cost sheet.

The next step was to determine the yarn details and knitting cost. Since the required fabric composition was 86% organic cotton, 14% recycled polyester, with 260 GSM in bonded interlock construction, I contacted the Knitting department for confirmation of yarn count and knitting charge. They informed me that the yarn specification was 24s 100% organic cotton and 75D/96F recycled polyester, and the knitting charge was USD 0.70 per kg. This cost was added to the sheet. As the fabric would also need dyeing, I then requested the dyeing cost from the Dyeing department. After receiving confirmation that the dyeing charge was USD 1.30 per kg of fabric, I included that amount as well. At that point, the fabric cost calculation was completed.

The next section involved trims and accessories costing. Trims are the materials permanently attached to the garment, while accessories are used for packaging, branding, and presentation and are usually removed before the garment is worn. Common trims include the main label, care label, sewing thread, buttons, and zippers. Common accessories include hang tags, strings, inner boards, poly bags, tissue paper, and cartons. After examining the sample, I identified the required trims and accessories, cross-checked them with the Trims Supply Chain department, and then entered the relevant information into the cost sheet.

Another important section of the quotation sheet was CM calculation, which refers to the manufacturing cost of the product, particularly the cut-and-sew cost. To calculate this, I needed the factory's cost per minute, which I obtained from the Accounts and Finance department. I also needed the SMV and efficiency rate, which were provided by the Industrial Engineering department. These values were then used to determine the CM cost.

The value addition section included costs related to printing, embroidery, and washing. However, for this particular sample, none of these processes were required, so that section remained blank. In addition to the main cost components, I also entered other financial values into the cost sheet, including operating expense, commercial expense, interest expense, depreciation, and income tax.

This experience helped me understand how merchandising works as a coordination-based function that depends heavily on accurate data, cross-departmental communication, and careful cost analysis. It also showed me how even a small mistake in costing can affect both the company's profitability and its relationship with the buyer.

2.2 Fakir Apparels Design Studio

During my internship, I had the opportunity to work with the Design Studio of Fakir Apparels. I was particularly interested in understanding how designers transform an idea into a garment that can attract buyers. As I observed the process more closely, I realized that fashion design is not simply about drawing attractive clothing. It is a structured process shaped by trend analysis, market expectations, creativity, and commercial feasibility.

The business strategy of Fakir Apparels is to secure high-FOB orders through its own sample development. Every three months, the Fakir Apparels Design Studio sends a collection to the Inditex head office in Spain. From that collection, selected samples are approved, and purchase order sheets are received after price negotiation. During my internship, I had the opportunity to go through the full process of developing a collection.

The first step was naming the collection, which I called *Candela_October_SS26*. After that, I worked on trend analysis. For this purpose, I used WGSN, a global fashion forecasting platform that provides insights into upcoming fashion trends, consumer preferences, and product directions by season. Since Fakir Apparels has an annual premium subscription to WGSN, I was able to access and download several reports related to upcoming menswear trends for Spring/Summer 2026, including trends for T-shirts, vacation stripes, sweatshirts, Henleys, and shorts.

By reviewing these materials, I gained a clearer understanding of the expected color palette, fabric construction types, GSM range, and garment silhouettes for the season. For example, I explored

fabric ideas such as bonded interlock, variegated rib, and heavy jersey with a mercerized finish, along with silhouettes such as boxy fit, oversized fit, and slim fit.

Since Zara Man products are generally sold within a price range of around USD 20 to USD 100, I also studied luxury fashion brands whose products are sold at much higher prices. This helped me gather ideas about fabric construction, detailing, and overall design direction. Based on that research, I first developed fabric construction ideas by hand and then converted my sketches into digital CAD illustrations using Adobe Illustrator.

After selecting the fabric structure, I focused on fabric composition. For topwear, I selected 100% cotton, cotton-elastane blends, and cotton-polyester blends. For bottomwear, I considered synthetic-based compositions such as polyester, nylon, and polyester-nylon blends. Once the fabric selection was completed, I moved on to trims. Using supplier catalogs, I selected suitable trims and accessories such as buttons, zippers, herringbone tape, and woven fabric details for each style.

The next task was preparing measurement charts for different garment categories such as T-shirts, polo shirts, sweatshirts, and Henleys. This part was relatively straightforward because buyer measurement standards tend to remain similar across seasons. I used the previous season's measurement sheets provided by Zara Man as a reference for developing the new collection.

One of the most important stages of the process was preparing the tech pack for each style. A tech pack can be considered the complete technical guide for a garment, as it contains all the essential information required for sample development and production. The tech pack included the style name, season, color code, GSM, fabric composition, construction type, CAD views of the garment from front, back, and side, detailed design features, trim specifications, and the measurement sheet. I prepared these tech packs using Adobe Illustrator.

After completing the tech packs, I submitted them to the relevant personnel in the Merchandising department, who were responsible for developing the physical samples. At that stage, I also assisted whenever clarification was needed, because a design may look perfect on paper, but practical execution often brings unexpected challenges. This experience helped me understand that design in the apparel industry is a balance between creativity and technical precision.

2.3 Knitting

As part of my internship, I also worked in the Knitting department, where I learned how fabric development plays a major role in the fast fashion industry. While garment categories such as T-shirts, polo shirts, and cardigans often remain standard, the real variation comes from the fabric itself. Different fabric structures, textures, and compositions can completely change the appeal of a product. In this regard, circular knitting machines are highly important because they can produce a wide range of fabric constructions quickly and efficiently.

The main objective of my work in this department was to learn how to operate a double-knit circular knitting machine and develop a new fabric design called *variegated rib*. The target was to produce this fabric using 100% organic cotton with a final fabric weight of 260 GSM. I also had to document the machine settings and development steps followed during the process.

The process began with studying the fabric design sketch provided by the designer from the Fakir Apparels Design Studio. My task was to identify the repeating stitch pattern used in the fabric. The repeat consisted of two knit stitches, one tuck stitch, two knit stitches, and one miss stitch. A knit stitch is the standard loop structure in knitted fabric. A tuck stitch holds the previous loop while receiving a new loop, which creates a raised texture. A miss stitch occurs when the needle does not receive new yarn, causing the yarn to float at the back of the fabric. The combination of these three stitch types created the distinct appearance of the variegated rib fabric.

After understanding the fabric structure, I selected a double-knit circular knitting machine with electronic jacquard capability. This type of machine was necessary because it allows individual needle selection, which is essential for producing complex patterns. The machine used was 20 gauge, and the yarn selected was 26 Ne, 100% organic cotton. This yarn specification was chosen based on previous experience and available GSM-wise yarn count reference data to achieve the target fabric weight.

Once the yarn count was selected, I requested a baby cone of the yarn from the yarn store. After receiving it, I sent it to the physical laboratory for testing. The tests included yarn count, yarn composition, twist per inch, evenness, and CSP. CSP, or Count Strength Product, is a standard

indicator of yarn quality that combines yarn count and tensile strength to assess whether the yarn is suitable for knitting or weaving.

The next step was machine setup, which was the most critical stage of the process. I programmed the machine according to the required knit, tuck, and miss pattern. I also adjusted the stitch length carefully, since stitch length directly affects fabric GSM. A shorter stitch length generally results in a heavier fabric, while a longer stitch length produces a lighter fabric. I also maintained proper yarn tension to ensure even loop formation and set the take-down tension in a way that the fabric could be pulled smoothly from the needles without distortion.

After the machine setup, SOP batch knitting was carried out. Usually, around 4 kg of fabric is knitted first as a trial batch. The grey fabric is then inspected and sent to the lab for testing. I did not achieve the desired fabric quality in the first trial. The first sample had a weight of only 230 GSM, which was below the target. To increase the fabric weight, I gradually shortened the stitch length and repeated the process several times. Through continuous adjustments and testing, I was eventually able to achieve the desired 260 GSM. After knitting, the fabric was also allowed to rest, since cotton fabric tends to shrink after relaxation, which influences the final GSM.

The project was ultimately successful. The final variegated rib fabric matched the original design sketch and achieved the required texture and fabric weight. This experience showed me that careful control of stitch length and machine settings can significantly influence the final properties of knitted fabric.

After producing 100 kg of grey fabric, divided into five rolls of 20 kg each, I sent the fabric for offline inspection. In this stage, the grey fabric was evaluated using the 4-point inspection system. Under this system, defects are assigned penalty points based on their size. A defect up to 3 inches receives 1 point, a defect over 3 inches but not more than 6 inches receives 2 points, a defect over 6 inches but not more than 9 inches receives 3 points, and a defect over 9 inches receives 4 points. The total points for each roll are then converted into points per 100 square yards using the standard formula: total points in the roll multiplied by 3600, divided by the product of fabric length in yards and fabric width in inches. This method helps determine whether the fabric meets the acceptable quality standard.

This part of my internship gave me practical exposure to knitted fabric development, machine setting, yarn testing, GSM control, and fabric inspection. More importantly, it helped me understand how technical precision in knitting directly affects fabric quality and production performance.

2.4 Dyeing

During my internship in the dyeing department, I observed the complete dyeing process of 100 percent cotton single jersey fabric with a GSM of 200. The dyeing process is generally completed in three main stages: absorption of dye in the presence of salt, fixation of dye molecules in an alkaline environment, and washing to remove unfixed dyes from the fabric.

After grey fabric is received from the knitting department, a portion of the fabric is first sent to the laboratory for a lab dip test. In this stage, the lab technician uses a Datacolor machine to determine the correct dye recipe based on the color swatch provided by the buyer. According to the Datacolor recipe, a small sample of fabric is dyed and then checked inside a light box under the buyer specified lighting condition, usually TL83. This process is typically repeated three times to achieve an accurate color shade. Once the desired shade is obtained, it is sent for buyer approval. After approval, the recipe is used for bulk dyeing.

For bulk production, grey fabric rolls are stitched together end to end to create continuous fabric ropes. These ropes are then loaded into the dyeing machine, which is filled with water. Several auxiliary chemicals are added at this stage, including detergent, anti-creasing agent, sequestering agent, and stabilizer. Caustic soda is then added gradually over ten minutes while the temperature is increased to 50°C, and the machine runs for another ten minutes. The temperature is further raised to 70°C and hydrogen peroxide is introduced, after which the machine runs again for ten minutes. Finally, the temperature is increased to 100°C and maintained for about sixty minutes to complete the scouring and bleaching process.

After bleaching, the temperature is reduced to 80°C and acetic acid is added to neutralize the fabric, maintaining the pH around 4.5. The water is then drained from the machine. Fresh water at 45°C is introduced, and dyes are added gradually over thirty minutes. During this stage, the machine runs for about fifteen minutes, and salt is injected for approximately five minutes to assist dye

absorption. The temperature is then increased to 80°C to promote color migration, and the machine runs for another fifteen minutes. After this stage, the bath is cooled to 45°C.

To complete the fixation process, soda is dosed over forty-five minutes while the temperature is increased to around 60°C. The pH is maintained between 10.5 and 11 to ensure proper dye fixation on the fabric. After fixation, the fabric undergoes washing at 60°C for about twenty minutes to remove unfixed dyes. Finally, a softener is applied to improve the fabric's hand feel, and the dyed fabric is unloaded from the machine.

After dyeing, the wet fabric is passed through a hydro extractor to remove approximately 80 percent of the remaining water. The fabric is then dried using a stenter machine. In the final stage, quality inspection is carried out before the dyed fabric is delivered to the next production stage.

2.5 Finishing Section

Fabric finishing is an important stage that takes place after dyeing. The main purpose of finishing is to enhance the final appearance and performance of the fabric according to buyer requirements. Generally, two types of finishing processes are applied: physical finishing and chemical finishing.

In the finishing department, a stenter machine plays a key role. This machine is mainly used to dry the fabric and control important parameters such as GSM, shrinkage, and fabric diameter. The GSM of the fabric can be adjusted by controlling the overfeed of the machine. Increasing the overfeed raises the GSM, while decreasing the overfeed results in a lower GSM.

At Fakir Apparels Ltd., brushing machines are also used in the finishing process. The factory has four brushing machines that are mainly used for fleece fabrics. Brushing lifts the surface fibers of the fabric, creating a soft and warm texture that is suitable for winter garments. In addition, a sueding machine is used to produce a very smooth and soft surface, improving the overall hand feel of the fabric.

The overall objective of the finishing process is to improve the appearance, softness, luster, and overall quality of the fabric so that it meets buyer specifications before being sent to the garment production stage.

Chapter 3

3.1 Critical Assessment of Internship Work

My internship at Fakir Apparels Ltd. was a valuable learning experience that provided a clear understanding of the real working environment of the textile and apparel industry. During the internship period, I worked in several departments including Merchandising, Knitting, Dyeing, and Quality. This rotational exposure allowed me to gain practical knowledge about the complete production process, starting from raw material sourcing to final shipment.

One of the most significant benefits of this internship was the opportunity to connect theoretical knowledge from my academic studies with real industrial practices. Concepts such as quality control, production planning, costing, and supply chain coordination became much clearer when I observed their practical application in the factory environment. I also learned how different departments must work closely together to meet production deadlines and maintain buyer requirements.

Despite the many positive aspects of the internship, some limitations were also present. As an intern, my responsibilities were naturally limited, and most of my activities involved observation rather than active participation in decision making. In addition, the high production pressure within the factory sometimes made it difficult to strictly follow every operational standard. I also observed occasional communication gaps between departments, which sometimes affected coordination and efficiency.

Nevertheless, the internship significantly improved my professional development. I enhanced my communication skills, time management ability, and problem-solving capacity. I also learned the importance of teamwork, discipline, and maintaining strict quality standards in order to remain competitive in the global apparel market. Overall, this internship experience strengthened my practical understanding of the industry and prepared me for future career opportunities in the textile and apparel sector.

3.2 Suggestions for Industry Development

During my internship, I observed several operational challenges within different departments that could be improved through practical management strategies. In the Marketing and Merchandising department, for example, communication delays and sample tracking problems sometimes resulted in longer lead times. These issues could be minimized by maintaining clear follow-up charts, implementing structured Time and Action plans, and arranging regular cross departmental coordination meetings.

Similarly, in the Supply Chain and Sourcing department, delays in the arrival of raw materials occasionally created production interruptions. To address this issue, companies should strengthen supplier evaluation systems, maintain appropriate safety stock levels, and implement ERP based tracking systems to monitor material flow more effectively.

In the Knitting department, I noticed that there was limited dedicated space and time for proper fabric design analysis and development. As a result, the responsible staff often had to focus more on production output rather than careful fabric testing and development. Due to these limitations, fabric defects such as drop stitches, needle lines, holes, oil stains, and yarn related problems were observed from time to time. These defects sometimes increased rejection rates during later stages of production.

In many cases, management appeared to prioritize production targets and short-term profitability rather than investing in infrastructure improvement and workflow optimization. While this approach may support short term output, it can negatively affect long term product quality, buyer satisfaction, and repeat orders. Therefore, management should consider allocating dedicated spaces for fabric analysis, allowing sufficient development time, and organizing regular training programs for technical staff. Promoting a work culture that prioritizes quality alongside productivity would also help reduce defects and improve operational performance.

In the Commercial department, I also observed challenges related to documentation delays and shipment scheduling pressure. These issues sometimes complicated customs clearance procedures and final dispatch operations, which could result in additional costs or penalties from buyers. To improve this situation, companies should adopt digital documentation systems and integrated ERP

platforms with Electronic Data Interchange facilities. Automated invoicing and real time shipment tracking systems can significantly reduce manual errors and speed up the order to cash cycle.

Additionally, maintaining strong relationships with reliable freight forwarders is essential. Regular coordination meetings, shared logistics dashboards, and transparent communication can help anticipate potential delays and improve shipment planning. As a result, delivery reliability can improve, transit time can be reduced, and buyer confidence can be strengthened.

Overall, implementing these improvements would help the company reduce operational inefficiencies, enhance product quality, and strengthen its competitive position in the global apparel market.

3.3 Learning for Personal Empowerment

My internship at Fakir Apparels Ltd. was an important milestone in my professional and personal development. During the 66 working days of the program, I rotated through several departments and observed how people, machines, materials, and processes interact to achieve the organization's production goals. This exposure helped me understand the operational structure of a large-scale apparel manufacturing company.

The internship experience went beyond simple observation of daily tasks. It helped me develop a deeper understanding of teamwork, leadership dynamics, and professional communication across different departments and management levels. I also gained a stronger sense of responsibility, discipline, and workplace professionalism.

Throughout the internship, I developed several important professional skills. I improved my ability to analyze problems systematically, think critically under pressure, manage time efficiently, and adapt to the fast-paced environment of the garment industry. Working with different teams also strengthened my coordination skills and increased my confidence in handling responsibilities.

In addition, I gained practical exposure to several performance management concepts such as monitoring production efficiency, estimating production capacity, analyzing workflow processes,

and identifying operational bottlenecks. These analytical skills are highly relevant for improving productivity and operational efficiency in garment manufacturing.

Overall, facing real industrial challenges enhanced my confidence and motivated me to continue developing my technical knowledge and professional skills. The internship not only expanded my understanding of the textile industry but also prepared me to contribute more effectively in my future career.

Chapter 4

Conclusion

My internship at Fakir Apparels Ltd. was far more than a routine academic requirement. It gave me the opportunity to connect classroom learning with real industrial practice and helped me understand how a large apparel manufacturing organization operates in practice. Throughout this report, I have described my journey from learning theoretical concepts at university to observing and participating in the activities of different departments within a garment factory.

I began my internship in the Marketing and Merchandising department, where I learned how buyer inquiries are handled, how costing is prepared, and how communication with buyers supports the business process. I then worked in the Design Studio, where I observed how trend research, fabric selection, and technical development are combined to create new collections. This helped me understand that successful product development requires both creativity and technical accuracy.

After that, I followed the production process more closely. In the Knitting department, I learned how yarn is converted into fabric and how machine settings influence fabric structure and quality. In the Dyeing section, I observed how fabric is processed and dyed according to buyer-approved shades and technical requirements. In the Finishing section, I understood how the final appearance, softness, and performance of fabric are achieved before it moves to the next stage. Altogether, these experiences gave me a comprehensive understanding of factory operations and showed me how all departments are interconnected in the garment production process.

This internship also contributed greatly to my personal and professional development. It improved my practical understanding, strengthened my communication and analytical skills, and increased my confidence in working within a professional environment. Overall, this experience helped me grow from a student with theoretical knowledge into a more capable and industry-aware individual who is better prepared for a future career in the textile and apparel sector.

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