

Report On
Metro Knitting & Dyeing Mills Ltd.
Apparel Production Management

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
March 2026

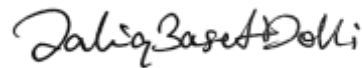
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Declaration

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.

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Letter of Transmittal

Mohima Gomes
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BIGD, Brac University
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Subject: Submission of Industrial-Attachment report.

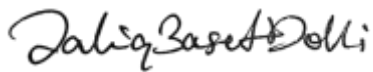
Dear Madam,

It is my pleasure to submit my Industrial-Attachment report regarding Production Management of Metro Knitting & Dyeing Mills Ltd. This has been an invaluable educational opportunity, especially in understanding the end-to-end production process.

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,

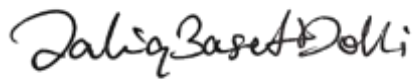


Dalia Baset Dolli
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Non-Disclosure Agreement

This agreement is made and entered into by and between Metro Knitting & Dyeing Mills Ltd. and the undersigned student at EDC, BIGD, Brac University.

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Industry Supervisor's Full Name & Signature:



Abu Saim Mohammad Nosher Ullah

Manager, Compliance

Metro Knitting & Dyeing Mills Ltd.

Acknowledgement

First, I would like to express my deep appreciation to Allah, whose endless mercy and guidance gave me the strength, patience, and resilience to complete both my internship and this report successfully. This report is derived from a three-month internship conducted at Metro Knitting & Dyeing Mills Ltd. My heartfelt appreciation goes to BRAC University, the BRAC Institute of Governance and Development (BIGD) for organizing such a resourceful program and for their continuous academic guidance and support.

I am profoundly thankful to my academic supervisor, Mohima Gomes, Senior Research Associate, PGD-KIM, BIGD, BRAC University, for her valuable guidance, constructive feedback, and inspiring mentorship throughout this journey. Her support has played a vital role in shaping both this report and my overall learning. I would like to extend my sincere appreciation to Abu Saim Mohammad Nosher Ullah for his invaluable contributions, Manager (Compliance) at Metro Knitting & Dyeing Mills Ltd., for his invaluable guidance and support during my industrial placement. Also, thanks to Brac University for their valuable teaching, advising, supervising and training during our Industrial attachment Report. My special thanks are also extended to the management and employees of Metro Knitting & Dyeing Mills Ltd. for their kind cooperation, professional support, and valuable suggestions during my industrial attachment. I feel genuinely fortunate to have learned from and been supported by such dedicated individuals and respected institutions.

Executive Summary

As part of the PGD-KIM program at BIGD and Brac University, I completed an internship at Metro Knitting & Dyeing Mills Ltd., a diverse and integrated garment manufacturing company and a key of Panam Group, which started in 2000 and now runs multiple textile & garment units, including dyeing, washing, printing, and even a sustainable initiative like ETP plant. The group makes over 6.4 million garments each month, generates an annual revenue of approximately \$1.1 billion and supplies big buyers like GU, Calvin Klein and Tommy Hilfiger. MKDL is one of the largest Knit Composite Garments and Textile industries in Bangladesh, which is equipped with all kinds of modern machinery and other facilities. This report has been presented based on my observations and experience gathered from my company.

The first chapter of the internship report offers a concise overview of the organization. The second chapter outlines my routine engagements inside various departments at MKDL, namely Dyeing & dyeing finishing, Knitting & knitting quality, Printing, Garments production, and Merchandising department. Each of which plays a critical role in the company's day-to-day operations. During the internship, I spent 10-12 days in each department to participate in their daily activities and contribute to specific tasks. The third chapter of this report links what I learned in PGD-KIM classes to factory life, such as using SMV tools, writing clear emails to buyers, balancing lines and checking compliance. After analyzing and evaluating each department, I have provided a few suggestions to improve the present status of the organization that is described briefly at the end of this report. Lastly, the fourth chapter provides a comprehensive summary of the entire coursework time, offering a concise picture of the whole experience. Overall, my time at Metro gave me strong skills in RMG and showed how smart planning and team effort help Bangladesh stay strong in global markets.

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List of Acronyms

MKDL - Metro Knitting & Dyeing Mills Ltd.

BIGD - BRAC Institute of Governance and Development

RMG - Ready-Made Garments

ETP - Effluent Treatment Plant

R & D - Research and Development

QAD - Quality Assurance Division

HR - Human Resources

KPI - Key Performance Indicator

RFT - Right First Time

VDQ - Variable Diameter for Quality

AOP - All Over Print

GSM - Grams per Square Meter

QC - Quality Control

SMV - Standard Minute Value

NPT - Non-Productive Time

IE - Industrial Engineering

ERP - Enterprise Resource Planning

TNA - Time and Action

AQL - Acceptable Quality Level

TQM - Total Quality Management

CAPA - Corrective and Preventive Action

Glossary

GSM (Grams per Square Meter): It is the measurement of fabric weight, which determines the thickness and suitability for a specific garment.

Greige (Gray) Fabric: The raw, unfinished fabric which comes directly from the loom or knitting machine is called greige or gray fabric.

SMV (Standard Minute Value): SMV is the time it takes for a qualified/skilled worker to do a job in a standard working environment following standard work method.

AQL (Acceptance Quality Level): It indicates the maximum number of defective items allowed in a sample before a whole batch is rejected.

ETP (Effluent Treatment Plant): It is a highly praised sustainable facility by international clients which is used to treat wastewater from textile processes like dyeing before it is released into the environment.

Chapter 1

About Organization

1.1 Overview of the Industry

Metro Knitting & Dyeing Mills Ltd. which is a part of Panam Group established in 2000, has progressed rapidly through the hierarchy and became a recognized entity to be one of the leading companies in the composite knitwear production sector in Bangladesh. As a company they reckon, to best serve their clientele they must adapt continuously in response to market shifts. For this reason, the organization has supplied their factories with sophisticated equipment and seasoned workforce to effectively meet the quality and shipping standards required by their clients. Over the last two and a half decades, they've transformed from a humble knitting and dyeing unit into a major, composite textile and garment manufacturing company with multiple production facilities, substantial stuff, and a strong global presence. The company commenced their journey as KB Traders, a trading company, in 1987. Later, in August 2000, Panam Group started their operations, specializing in knitting, dyeing, and garment manufacturing, as a house of ready-made garments (RMG) in Narayanganj, Bangladesh. The organization started with their emphasis on excellent service, adherence to schedule, and building trust with international buyers. The business grew in 2011 through a new unit named Mercer Design Tex Ltd. by introducing screen printing and digital printing. This made it possible for the company to offer more services to their clients, like sublimation printing and digital designs. In 2014, they launched Bea-Con Knitwear Ltd. (Unit 4), which greatly expanded their capacity to produce clothing. The organization also started paying more attention to protecting environmental sustainability by building Effluent Treatment Plants (ETP) to clean wastewater and installing solar panels to save energy. They also started rainwater harvesting and textile waste recycling. To make production more eco-friendly the company launched a Green Factory project in 2021. Through Panam Cycle Ltd., the Panam Group entered a completely new sector in 2022: cycle manufacturing. Inevitably through years of mutual cooperation the organization has nurtured genuine and transparent communication channels with all their stakeholders. According to them, these relationships are the cornerstones of their company and they envision integrated growth in subsequent years.

1.2 Vision and Mission

The vision of the organization is to improve people's means of support, quality of life by playing a part in our national economic system via distinctive business endeavors. By coordinating remarkable and distinguished businesses the company wants to improve people's income, living conditions and their ability to contribute to the prosperity of the nation. The organization views itself as a reliable component of the nation striving to grow the economy by creating innovative and unique job opportunities that help support people's livelihoods.

The mission of MKDL is to generate unique merit in the international market by allowing people to experience the joy of clothing. The organization's mission is to establish a special and reputable position for itself in the global fashion industry. They plan to achieve this by emphasizing on the positive emotion and delight that come from wearing their items rather than just selling apparel. The company designs each of their pieces keeping in mind that the customer's experience of getting dressed in their products would be a source of happiness. This way in the long run the company hopes to build a valuable standing in the global market that sets them apart from all of their competitors.

1.3 Goals and Objectives

Metro Knitting & Dyeing Mills Ltd. an exporting manufacturer of high-quality garment products, is committed to becoming a contemporary, ethical employer that upholds its workers safety and well-being, treats them with fairness and supports their professional development. It is an organization that places a high importance on its people and responsibilities at all levels. Some of their key goals and objectives are as follows; the company's approach to labor management is steered by commitment to ethical behavior, employee satisfaction and legal compliance. They aim to promote labor management practices by ensuring fair wages and safe working conditions, offering benefits like healthcare, basic rights and maternity. The company fosters a sociable work atmosphere by encouraging open communication and teamwork, treating everyone with dignity and fairness, and listening to and acting on employee feedback. They are continuously investing in employee development, well-being and training to match the evolving market requirements and a secure supportive workplace. The organization has installed safety systems like fire detection and CCTV to ensure a secure facility for workers and providing

community support are some examples. The company allows innovative thinking and appreciates all successes no matter how big or small. They have textile designers to generate new fabric types and be the link between the ever-demanding global market and the company. Metro Knitting & Dyeing Mills Ltd. focuses on sustainable growth by balancing economic success and social responsibility. They've managed to reduce water consumption in production processes by about 50% over the last 7 years using the latest technology. They plan to set up two green facilities at Asulia and Mowna with modern tech to lower pollution and carbon footprint. The company also practices using ETP, solar power, rainwater harvesting, recycling, and tree plantation programs to the local community.

1.4 Organizational structure, Organogram, Branches and Departments

Under Panam Group, there are multiple garment and textile production units, a printing and embroidery facility, logistics together with a specialized front that does trade of chemicals and dyes related to RMG production and also a bicycle manufacturing factory. The organizational structure and organogram of the company are presented in Figures 1 and 2 respectively.

Figure 1: Organizational structure of Panam Group

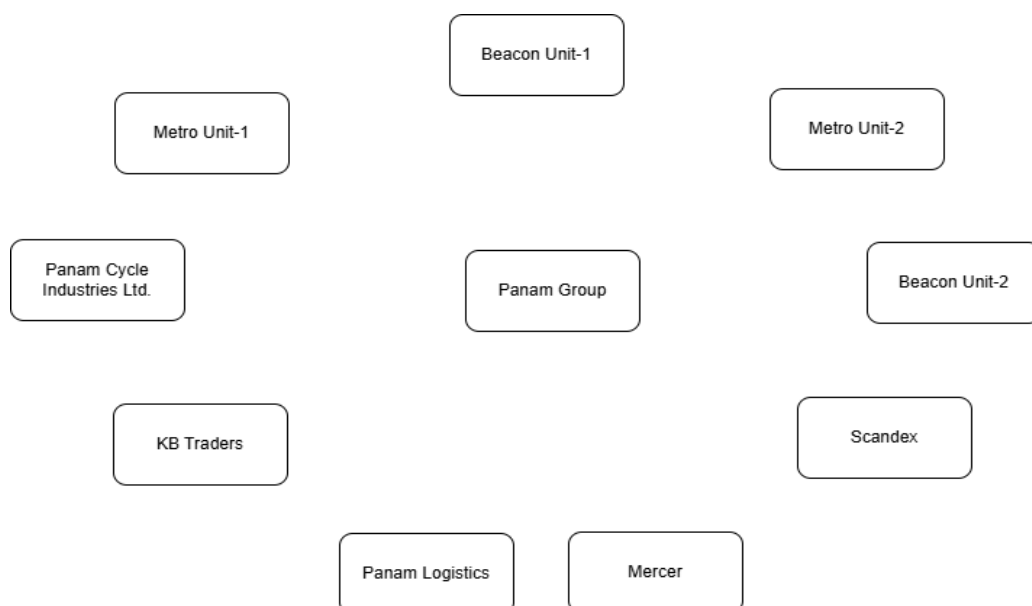
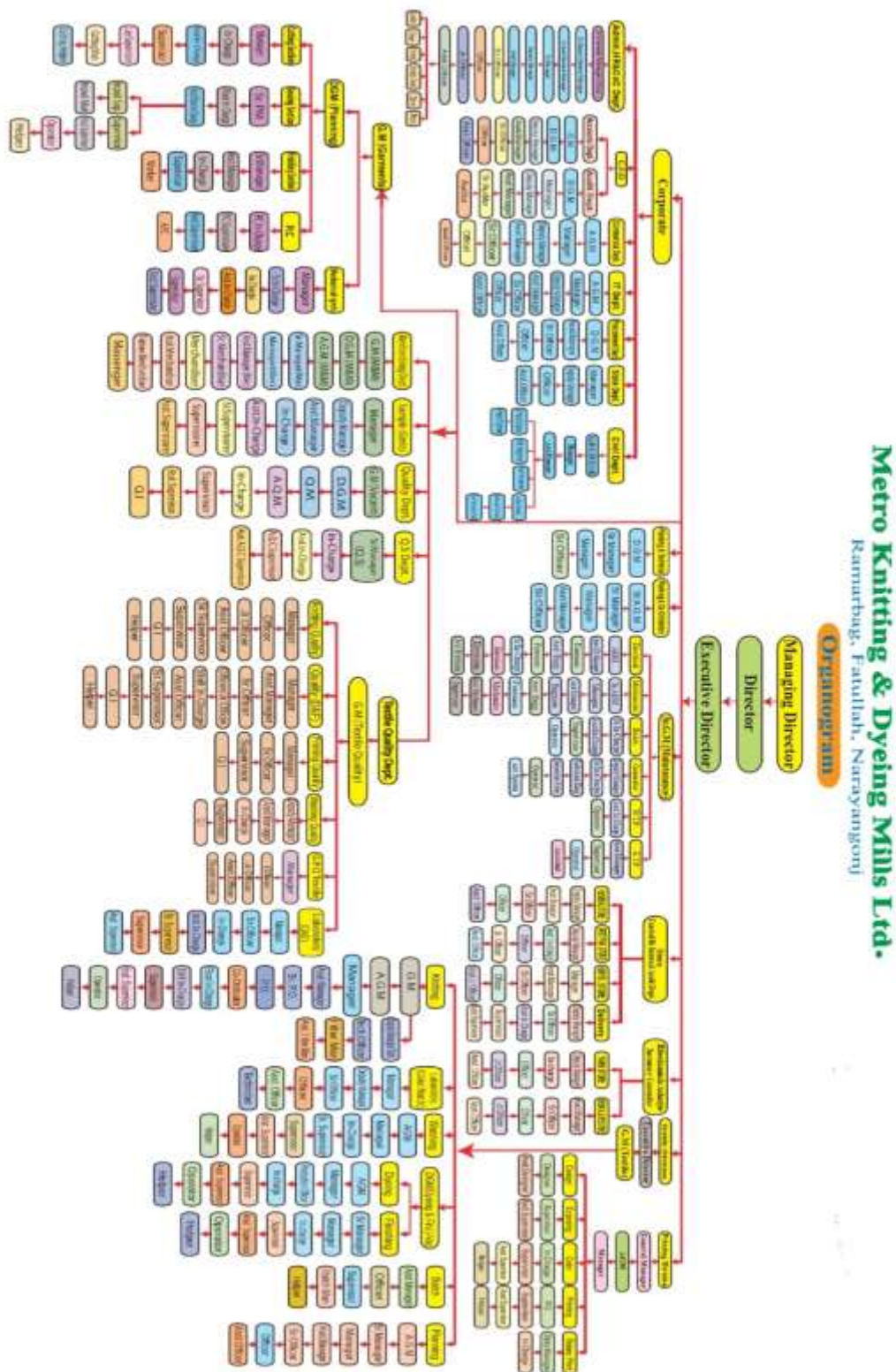


Figure 2: Organogram of Metro Knitting & Dyeing Mills Ltd. –



Metro Knitting & Dyeing Mills Ltd. is an entirely cohesive producer of clothing and textiles. They handle every step of the process, from creating new fabric samples and dyeing yarn, to knitting, quality control, printing, washing and making finished clothing. With the help of important departments like research, marketing and human resources, their structure shows a complete in-house operation.

Table 1: Departments of Metro Knitting & Dyeing Mills Ltd

Knitting & Knitting Quality	Washing & ETP
Dyeing & Dyeing Finishing	Sample
R & D	Marketing & Merchandising
Color Lab & QAD Lab	Garments Production
Batch	Fashion Studio
Printing	Admin, HR, Compliance

1.5 Products/services produced by the industry

Metro Knitting & Dyeing Mills Ltd. offers a comprehensive range of knitted clothing for all ages and genders, counting men, women, boys and girls. Their core products include everyday essentials like t-shirts, hoodies, sweatshirts, polos and trousers. The company's extensive in-house customization, which offers a wide range of print and embroidery techniques to add unique designs and value to their products, is one of its premier capabilities.

Table 2: Product/Service range of Metro Knitting & Dyeing Mills Ltd

Menswear	T-shirts, Polo shirts, Sweatshirts, Hoodies, Trousers etc.
Womenswear	Sweatshirts, Tank tops, Skirts, Fashion Tops etc.
Boys' apparel	Button-up shirts, Polo shirts, Sweatshirts, Graphic Tops, Hoodies etc.
Girls' apparel	Fashion Tops, Hoodies, Sweaters, Shorts etc.
Print & Embroidery	All types of Screen Printing, Reactive, Pigment, Rubber, Glitter, Burnout prints and also any kind of Embroidery Sample, Flat Stitching, Boring, Logo, Applique, Chain Stitching, Deco Stitching, Hand Effect Emb and 3D Emb etc.

The organization collaborates with a prestigious and varied portfolio of well-known global brands. Major European retailers, international fashion giants, and popular value-focused chains are among their clientele. This impressive list highlights Metro's superior quality, reliability and solid reputation in the international apparel supply chain.

Table 3: Clients of Metro Knitting & Dyeing Mills Ltd

GU	VARNER	CALZEDONIA
CALVIN KLEIN	TOMMY HILFIGER	ASCENA
BETTY BARCLAY	LANE BRYANT	PROMODORO
TOM TAYLOR	NEXT	BONITA
AURA FASHION	AS COLOUR	MARC O'POLO
NEW LOOK	ANIMAL	REITMANS
COTTON: ON		

Chapter 2

Description about task accomplishment

Seeking comprehensive experience in the industry as a recent graduate, I completed a 66 days intensive internship at Metro Knitting & Dyeing Mills Ltd. focused on apparel production management. To implement this plan, I and my industry supervisor prepared a plan and timeline to work with different departments to gain value adding and practical experiences.

Table 4: Internship schedule breakdown

Department Name	Duration
Dyeing And Dyeing Finishing	13 days
Knitting & Knitting Quality	13 days
Garments Production	15 days
Merchandising	13 days
Printing Department	12 days

2.1 Dyeing and Dyeing Finishing

Throughout my time in this department, I learned about the process of transforming raw, colorless (or greige) fabric into uniformly colored, finished fabric with the desired color match, texture (hand-feel), functional properties, ready for garment production. In Metro, there are two types of machines, which help in doing and developing dyeing. These are lab area and bulk area machines; lab machines are used to develop samples according to buyer requirements. If it is done correctly and shade is matched the required order is then sent to the bulk area for bulk production. Metro has three units for bulk dyeing, they are Beacon-1 (16 machines), Beacon-2 (8 machines), and Metro (17 machines). Altogether their production capacity is 50 tons per day. They conduct sample dyeing in the Metro sample and Beacon sample unit. For dyeing finishing they have two units, which are Metro finishing and Beacon finishing. Currently Metro has dyeing machines from six brands; Sclavos, MCS, Brazzoli, Dantech, Fongs, Thies. These machines differ from each other due to different types of nozzles, heat exchanger, j-box and many other parts.

Mainly a dyeing machine has these parts: main vessel, nozzle, reel, side tank/chemical tank, main motor, main pump, door, door lock, heat exchanger, dosing motor, dosing pump, drain line, and unload reel. Here are some of the chemicals that are essential for fabric dyeing and dyeing finishing: sequestering agent, levelling agent, fixing agent, softener, detergent/soaping agent, catanizing agent, stabilizers, ant creasing agent, permanganate, peroxide killers, neutralizers, etc. For Dyeing Finishing Metro uses Hydro Extractor Machine, Slitting Machine, Stenter Machine, Compactor Machine, and Calendering Machine. All these machines serve different purposes but it is through the work of all these machines that the fabric finishing can be achieved as per buyer's requirements. I have observed and learned about several types of fabric dyeing processes during my time in this department. The recipes for different fabric dyeing processes and their standard dyeing time can fluctuate based on the type of fabric and dyes.

To prevent defects and ensure Right-First-Time production Metro practices some mandatory checkpoints in dyeing. Such as, pre-dyeing check, recipe verification, mid-cycle checks, if possible, post-dyeing rinse and soap check, final shade and quality check. Metro compares the dyed sample with the standard next to each other in the lightbox under various light sources (D65-daylight, TL84-retail light, CWF-cool white fluorescent). A pass requires a suitable match under at least two, preferably all, light sources. Some of Metro's dyeing sections KPIs are RFT%, re-dye/correction rate, productivity, energy consumption and on-time delivery. Even if they are handling lower amounts of batches per day Metro always ensures high-quality production which is one of their first-rate qualifications. Metro is using the latest technology to reduce water consumption in production processes. They've set up ETP's across their manufacturing plants in order to lower overall water consumption levels. (The process flow of Knit Dyeing and Dyeing Finishing is given in Appendix A)

2.2 Knitting & Knitting Quality

While covering this department, I got to learn and observe first-hand how different types of fabrics are made by knitting. Knitting is among the most essential processes for a company to start the garment production phase. Knitting is the process of creating textiles by interlocking loops of yarn using needles. There are two kinds of knitting methods; weft knitting and warp knitting. In Metro fabrics are made using the weft knitting method. In this technique, a single

yarn runs horizontally forming interlocking loops (courses) across the width of the fabric. For knitting & knitting quality, there are seven floors allocated in MKDL. The company uses three kinds of machines for their knitted fabric production. They are- circular knitting machines, single & double jersey knitting machines, flat knitting machines (cuff and collar). Also, there's fabric inspection machines for ensuring knitting quality by enabling real-time detection of knitting errors, improving, reducing waste, and securing only defect-free fabrics to proceed to cutting.

The main components of a circular knitting machine that are crucial for the continuous, tubular creation of fabric are: needle cylinder, needles, sinkers, cams & cambox, feeders, VDQ pulley, creel stand, yarn guide, take-up rollers/fabric spreader, stop motions, lycra attachment device, and lubrication system. In knitting, production parameters are essential for determining efficiency, yarn consumption, and output quality of the fabric. These include: diameter of the machine, rpm of the machine, number of feeders utilized, gauge of the machine, yarn count, needed duration (machine operating time), efficiency of machine operation. During my time here I had the opportunity to witness various types of fabrics being made, such as- 1x1 rib, 3x1 rib, 6x7 rib, waffle, auto stripe, fleece, twill, terry towel, and many types of drawstrings, collar fabrics and elastics. I have also seen some common knitting faults, they are- Sinker Defect, Line Pin bursts, Pin Openings, Fabric Twist Holes, Cutter's Fly, Lint, Filament Issue, Missed Stitch, foreign fiber or yarn contamination, Oil spot. They are often caused by uneven tension, broken needles, or bad yarn quality. Remedies for them can be examining needle stability, ensuring even yarn tension, and proper machine maintenance. (The process sequence of knitting operation is given in Appendix A)

2.3 Garments Production

The garments' manufacturing department is the heart of the entire business because it turns a simple idea into a tangible, wearable item. Without this department, requests from buyers and concepts from merchandisers would remain just ideas on paper. I closely observed every stage in this department, from knitting the fabric and dyeing it the right color, to meticulously cutting numerous pieces and expertly sewing them together and then finishing, all of them must be done right to avoid waste and delays. I learned that good work here means the clothes are high quality and ready to ship on time.

Cutting: The Cutting Section transforms rolls of material into the exact shapes needed to assemble a garment. Following a detailed marker plan that maximizes fabric use, layers of fabric are spread on long tables and cut with either manual cutters or machines controlled by computers. This stage is critical because any error in cutting, such as- misaligned designs or inaccurate shapes, can result in massive fabric waste and make the pieces impossible to sew together correctly. Once cut, every garment piece is assigned a number to prevent mixing and avoid shade variation during sewing. Next, all components of the identical clothing item are sorted by size and color. Finally, the items are grouped into bundles, with each bundle labeled showing style, size, quantity, and bundle number for quick identification. In MKDL, if a specific type of printing/embroidery is required in this stage the cut panels are sent to Mercer since the printing section in this branch only does AOP. At this stage, after carefully inspecting the cut panels, they are prepared to be sent to the production line for sewing. Equipment used in the Cutting Section are- Cutting table (table length: 6 yds; table width: 76"; lay height: 3"; ply no:55; fabric width: 70"; fabric length: 4.5 yds), Perforated paper, Marker, GSM tester & cutter, Electric balance and cutting knives (auto cutter, straight knife, and band knife). Defects found in the Cutting Section are- slub, crease, lycra missing, hole, shade uneven, GSM low, día short, pen mark, miss print, dirt spot etc.

Sewing: For internship purposes, I learned about different sewing machines and their application, sewing wastage, alter recovery, different body and other related part joint procedure. Machine efficiency, working efficiency, parts shading, needle break, looper change, sewing thread setting in the machine, folder joint and many other operations. Garments productivity depends on the sewing department's operational activity. Metro Knitting & Dyeing group has sewing units divided into several classes. The Sewing Section serves as the assembly line in garment production, where the cut fabric pieces are stitched together to produce the finished item. Skilled operators work in a synchronized order, with each undertaking designated responsibilities. This section requires the most labor-intensive and determines the garment's structural strength, fit, and overall look.

Finishing: The finishing section in MKDL, is furnished with modern pressing equipment and skilled personnel. As with all operations, the quality of garments is rigorously monitored here to ensure acceptable quality standards. The Finishing Section readies the sewn garments for the

buyer. Here, loose threads are cut, any necessary hand-stitching is completed, and the garments are ironed to achieve a sharp, store-ready appearance. This part also encompasses the final quality check, where each piece is checked against standards for stitching, measurement, and fabric flaws. Once inspection is done, garments are tagged, folded, and prepared for packing. The finishing section ensures the product is not only produced but also refined, visually appealing, and fulfills the final quality promise before departing the factory.

2.4 Merchandising

I learned Merchandising is a process in which products are designed, created, implemented and showcased to the buyer. Garments merchandising involves purchasing raw materials & accessories, manufacturing garments, ensuring the necessary quality standards and exporting the garments on time. A merchandiser serves as the essential connection among the company, the buyer, and the factory. Their core job is to ensure the right product reaches the right market at the right time, cost, and standard. They track market trends, assess customer desires, and help develop new products. They calculate costs, locate trustworthy producers, and oversee inventory amounts. Most importantly, they constantly coordinate between the sales team (who markets the product) and the production department (who creates it), overseeing the complete process from an initial idea to the final delivery of goods. (The process flow chart of Merchandising operation is given in Appendix A)

The process of merchandising begins with developing a relationship with a buyer to receive an order. Upon receiving an order, the merchandiser gathers all design and material information to calculate the fabric and trim requirements and determine the total production cost. After agreeing on the final cost and obtaining the official order and payment guarantee (Letter of Credit), the merchandiser arranges for the purchase of all materials. The subsequent vital step is obtaining the buyer's approval on samples prior to the beginning of any bulk production. After the samples receive approval, bulk production is planned and started. Throughout production, the quality of the line is examined. The buyer then conducts a final inspection of the completed products prior to shipping. Lastly, the products are dispatched, the necessary shipping documents are sent to the buyer's bank, and payment is received to complete the cycle.

2.5 Printing Department

Printing is nothing but the process of localized dyeing. Unlike textile dyeing, where the entire fabric is dyed uniformly, printing uses thickened pastes or inks, in the fabric's, certain parts only. Different types of printing are performed in Metro Knitting & Dyeing Mills (BD) Ltd. such as reactive, pigment, burnout, glitter, puff, foil, and discharge printing. Also depending on the position of the print in the fabric MKDL does two types of printing- placement/chest print and all over print. In Metro they mostly use four types of printing machines. They are- Flatbed, Rotary, Digital, and Sublimation printing machines. Each of these machine types require different printing procedures. A print paste contains- thickener, fixer, binder, urea, glycerin, NH_4OH , softener, and anti-blocking agent. For more depth of color, more binder is used. (The working sequence of All Over Printing is given in Appendix A)

Buyer's supply design or swatch. If swatch is supplied, then it is scanned and taken to the software. Photoshop, illustrator is used for color separation and design preparation. Many types of software used for design preparation for all over print, widely used softwares are- Tex, Ramset, Best image. For placement print, widely used software's are- T- seft, Separate studio. Repeat is set here. There are many repeats for flat screens. For the rotary screen, 4 repeats are used (640 mm, 820 mm, 914 mm, 1018 mm). Pixel (dot per inch) used for sharpening of design. High pixel means high sharpness (edge of design). To control further shrinkage after production, shrinkage percentage is added with repeat in the design preparation room. Usually, 15-18% shrinkage is added for lycra fabric. 5-7% shrinkage added for cotton fabric. In the print studio, decisions are made for the design in which machine production will be carried out, either in flat or rotary. Then the design is shared through "common share" software to the different sections. After the set printing procedure Curing, Washing, Stenter, Compacting, and QC are done as a part of printing finishing.

Chapter 3

Critical assessment of Internship work

Through this Internship program at Metro Knitting & Dyeing Mills Ltd. I had the excellent opportunity to apply the theoretical understanding that I learned in my academic courses of PGD-KIM to real-world business scenarios. In this chapter I will examine how generic and industry-specific course knowledge is applied during the internship period, together with the areas for enhancement within the organization and scope of improvement in my professional life.

3.1 Application of Generic and Industry specific courses during Internship

The generic courses enhanced my workplace maturity, problem-solving skills, and adaptability- key attributes for functioning effectively in a fast-paced apparel manufacturing environment. The technical underpinnings required to comprehend supply chain operations, production procedures, and quality control systems in the apparel industries were supplied by the industry-specific courses.

KIM 101: HR Skills and Competencies - MKDL is dedicated to upholding all relevant policies and laws set by the government, as well as all international regulations, to ensure that we operate within ethical and legal boundaries. During my rotations, I observed how Metro maintained worker safety, discipline, and grievance-handling mechanisms through its HR and Compliance systems. This course had provided me with valuable insights into effective leadership and department management, including setting clear goals, empowering team members, and fostering a positive work environment. All of these learning helped me a lot to better understand Green HR as well as sustainable HR practices in the organization.

KIM 102: Analytical Skills and Competencies - My employment involved a lot of analytical thinking, especially in the departments of operations excellence, supply chain, and quality. I applied analytical reasoning while performing Standard Minute Value (SMV) calculations, Non-Productive Time (NPT) studies, and efficiency tracking. As a newcomer, I initially hesitated to challenge senior IE calculations, but the course's emphasis on evidence gave me courage. These encounters strengthened my capacity to tackle challenging issues using methodical, evidence-based thinking as opposed to conjecture.

KIM 103: Communication Skills - The most crucial talents in this apparel business are the skills of communication. As an intern in the merchandising and product development departments, I discovered the indispensable value of KIM 103 – Communication Skills, a course that transformed my ability to write professional emails and craft an effective CV. I learned how to present something to clients or internal staff, as well as how to communicate upward and downward inside a company. In addition, I gained confidence in my ability to communicate with managers and team leaders and deliver information at cross-functional meetings and KPI reviews. Silent in early meetings, I forced myself to speak on the fourth day with a practical suggestion; the team leader nodded, implemented it, and that small win built lasting confidence in my oral communication.

KIM 104: Business Operation Skills - I now have a more comprehensive grasp of how different business operations work together to accomplish organizational objectives thanks to this training. It taught me how different departments like merchandising, knitting, dyeing, and sewing must coordinate and communicate to complete an order successfully. This course helped me see the bigger picture of how every small task connects to the final goal of delivering quality products on time and profitably. The notions of process flow, resource usage, and business optimization that I had studied academically were directly mirrored in my exposure to ERP systems, production scheduling, and performance monitoring.

KIM 201: Introduction to Garments Industry – Knitwear - This course gave me a solid foundation in understanding how knitwear is made, from yarn to finished garment. During the internship, this knowledge helped me understand each production stage like knitting, dyeing, cutting, and sewing, and why each step matters. My comprehension of the connections between upstream and downstream processes in the clothing industry has improved as a result of this knowledge. Overall, this course helped me as an intern to connect classroom theory with real factory floor activities, making my learning more meaningful and practical.

KIM 202: Industrial Engineering - This course in the PGD-KIM curriculum was more concentrated and detail-oriented. At Metro Knitting & Dyeing Mills Ltd., KIM 202, Industrial Engineering turned classroom formulas into real tools that made the factory run better. When I first calculated SMV on a live line, the simple formula $SMV = \text{Basic Time} + \text{Allowances}$ stopped being just numbers and started saving money. During internship, knowledge from this course helped me to understand how production lines are balanced, why operators are assigned specific

tasks, and how workflow is arranged to avoid bottlenecks. I also saw how lean manufacturing techniques were used to reduce waste and maximize workflow.

KIM 203: Production Management & Merchandising - I have a solid foundation in production and supply chain planning thanks to this course. I helped with tracking customer orders, making sure materials were available on time, and developing and revising production plans. Observing how planning and merchandising integrate for timely delivery perfectly reflected the theories covered in this module. The course's merchandising component reinforced the value of collaboration between technical and commercial teams by assisting me in understanding how client requirements are converted into manufacturing specifications and delivery timetables.

KIM 204: Quality Management & Supply Chain Management - During my tenure in the Quality Departments, this course was particularly pertinent. Quality Management & Supply Chain Management showed me how to spot and fix real problems on the factory floor. I saw how precise forecasting and inventory control support, consistent product quality and customer satisfaction, which was further enhanced by the Supply Chain Management component. I learned AQL rules, fabric checks, and in-line audits that keep products up to buyer standards. I became more familiar with the concepts of compliance audits and continuous improvement. I saw how simple quality steps make products better, lines faster, and the whole factory stronger every day.

3.2 Suggestion for industry improvement

During my internship period, I had the privilege of immersing myself in the diverse and dynamic environment of Metro Knitting & Dyeing Ltd. Every area is essential to the overall operations. Focused enhancements can boost customer happiness, productivity, and quality standards. Based on my comprehensive exposure across multiple departments, I identified several areas where MKDL could strengthen its operational efficiency, coordination, and competitiveness:

Process Optimization- Increasing the application of Lean and Six Sigma techniques in every sector will help find bottlenecks, cut waste, and boost productivity. Production processes can be optimized by creating a structured continuous improvement program with specific KPIs for efficiency, adaptability, and waste reduction. Recurring problems will be reduced by fortifying

root cause analysis procedures with organized corrective and preventative action (CAPA) systems. TQM system can be effective in the quality department to reduce defects and rejects in all sections.

Skill Development- Despite training efforts, expected improvements in performance are not always visible. Employee cross-training and routine capacity planning reviews can improve adaptability to unforeseen demand swings. Limited skilled manpower in specialized areas such as color matching and recipe development can slow approvals and production. Specialized training programs for adopting new technology like these and also about IE and Lean could improve the company's situation substantially.

Supply Chain & Inventory Management- Lead times would be shortened and coordination would be enhanced by improving real-time visibility across production, warehouse, and procurement activities. Sometimes in the warehouse, various raw materials such as fabric, trims, and accessories have been stored for a long time. However, some of the raw materials may still be utilized for repeat purchases from buyers. At times, merchandisers miss these materials while determining the raw material needs for a specific order, resulting in the company buying new raw material unnecessarily. The company can think about setting up a system to track inventory amounts to avoid having too much or too little stock of the raw materials.

Quality Assurance- Like many other companies in Bangladesh MKDL also struggles with their buyers demanding high quality but are unwilling to pay higher prices due to intense market competition. They can come to fair negotiations with their buyers by maintaining buyer expectation quality and on time delivery. Consistent product quality and customer satisfaction can be guaranteed by regular internal audits and updated training programs on quality standards and regulatory compliance.

Workforce Management- The company faces challenges in worker-friendly practices, with limited sustainability initiatives. Applying some motivational program or incentive package for staff and workers production management team could improve their performance day by day. Employee performance and workplace safety can be further improved through training, ergonomic upgrades, and routine safety assessments.

Infrastructure & Equipment- Water meter issues and machine maintenance delays lead to inefficiencies, causing occasional water and chemical waste. Workers should communicate

promptly about accessory issues, and the reliance on analog machines in some areas presents a challenge that needs consideration.

Interdepartmental Coordination- I noticed that there were instances when some requisitions were not meticulously followed, leading to delays and inaccuracies in the sample development process. Additionally, a noticeable gap existed in the daily reporting of sample updates, making it challenging for merchants to keep track of the progress of their samples, specifically in sewing and cutting stages.

Social Responsibility- Noise pollution from machinery affects both workers and the surrounding community, reducing social acceptability. They can install sound-absorbing panels or enclosures around noisy machines to block noise from spreading. Perform regular maintenance like oiling and tightening loose parts to keep machines running quietly. Plant trees or build boundary walls around the factory to reduce noise reaching the nearby community.

By implementing these measures, Metro Knitting & Dyeing Ltd. could further dignify its reputation as a competitive, efficient, and sustainability-driven exporter in Bangladesh's RMG sector.

3.3 Learning for self-improvement

I have a comprehensive understanding of industrial operations and opportunities for personal development thanks to my internship experience in a variety of departments. The internship at Metro Knitting & Dyeing Ltd. was a transformative journey that significantly advanced my technical, analytical, and professional skills. I've gained technical information about my subjects through this coursework, but it has also helped me hone my professional abilities. Understanding marker efficiency, SMV, and line balancing reinforced the technical rigor required for apparel manufacturing. This gave me important insight into how various functions work together to accomplish organizational goals. In addition to the course material, I learned the value of sustainability in the textile and garment sector. I can now pinpoint places where we may use sustainable methods and support this commendable initiative. Participating in Lean and Six Sigma programs also highlighted the need for continuous improvement in attaining operational excellence and gave me hands-on experience with organized problem-solving techniques. I learned to

communicate concisely, document procedures accurately, and follow up effectively within a corporate environment.

Exposure to fast-paced operating situations also brought home how crucial it is to plan ahead, be flexible, and adjust to shifting priorities while maintaining consistency in quality and accuracy. Familiarity with industrial discipline, punctuality, and compliance culture strengthened my professional ethics. My perspective was widened and my capacity to adapt to various corporate cultures was improved by exposure to international collaboration and diverse work styles. Knowledge about the recruitment process, job descriptions, job analysis, and employee training for existing and new employees helped me understand the organization's expectations of its employees, including myself, and vice versa. I developed the ability to quickly understand departmental goals, integrate into team workflows, and contribute constructively under time constraints. Overall, I am appreciative of the chance to take this course and the priceless knowledge and skills I have acquired. It has given me a solid basis for both professional and personal growth, giving me the abilities, self-assurance, and perspective, I need to succeed in the manufacturing and industrial sectors.

Chapter 4

Conclusion

During my internship, I gained knowledge and experience from working across multiple departments of Metro Knitting & Dyeing Mills Ltd. as well as from learning about various departmental activities. During my 66-day training period, I was able to gain a comprehensive understanding of the various departments involved in the production process, which was invaluable to me as a student looking to break into this industry. I got the chance to work in a number of areas during my internship at MKDL, including Dyeing & dyeing finishing, Knitting & knitting quality, Printing, Garments production, and Merchandising. The factory runs on clear goals such as- zero delays, low defects, and on-time delivery, and I saw these happen every day. It was an amazing chance to be involved in different departments in the industry and learn about various functions and driving factors.

I am truly thankful to Brac University for including such a valuable internship opportunity within the PGD-KIM program. I was able to obtain useful insights into how several departments work together to guarantee effectiveness, quality, and client happiness thanks to this exposure. I learned that in RMG success comes from every team talking, planning ahead, and fixing issues fast. I was able to apply my academic knowledge to practical operations during the internship, especially in areas like quality control, process optimization, and production planning. This experience has provided me with the practical skills and knowledge necessary to be successful in this industry, and I feel confident in my ability to contribute significantly to the sector. I also gave a few ideas to fix small problems, these changes can save a lot, make the workflow faster and keep workers happy. All things considered, this experience has been a worthwhile educational opportunity that has improved my technical proficiency, expanded my industrial viewpoint, and has equipped me with valuable skills and knowledge that will significantly enhance my performance in the RMG industry. I understand the full flow, from yarn to shipment, and feel confident to solve problems, lead teams, and help grow the industry. With the ongoing evolution and progress of the garment industry, I look forward to being part of this exciting and dynamic industry.

References

Metro Knitting & Dyeing Mills Ltd. (2021). Retrieved March 1, 2026, from Metro Knitting & Dyeing Mills Ltd: <https://www.metrokd.com/>

Panam Group. (2021). Retrieved March 1, 2026, from Panam Group: <https://panamgroupbd.com/>

Appendix A.

Figure 3: Process Flowchart of Knit Dyeing -

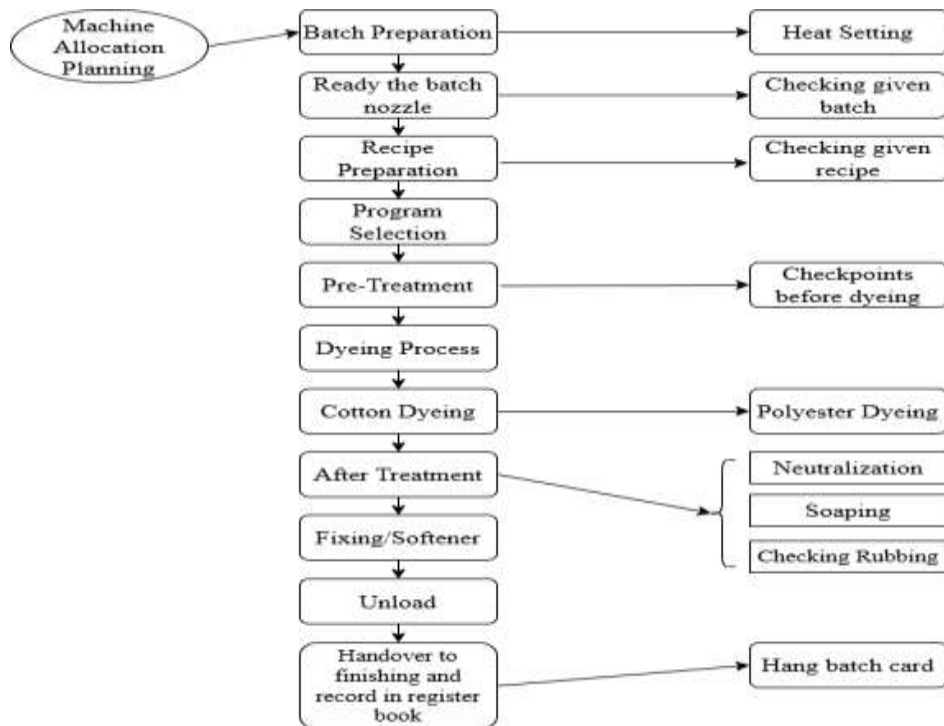


Figure 4: Process Flowchart of Dyeing Finishing

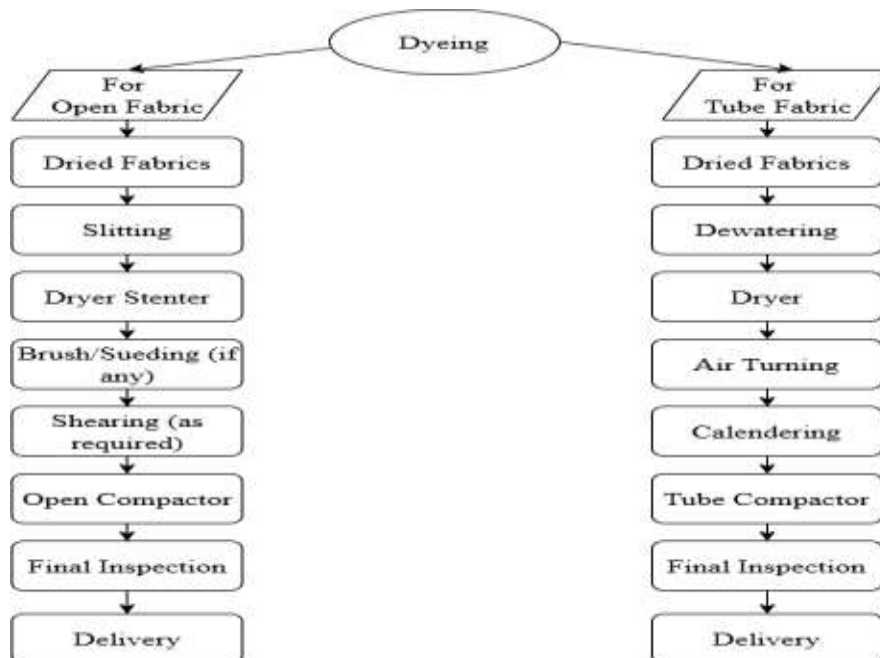


Figure 5: Process sequence of knitting operation

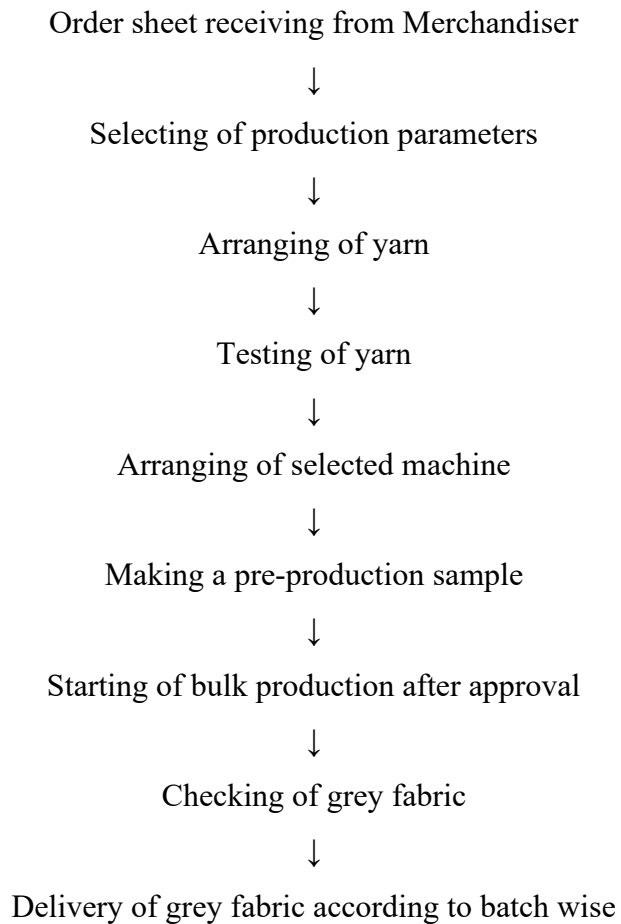


Figure 6: Process Flow Chart of Merchandising -



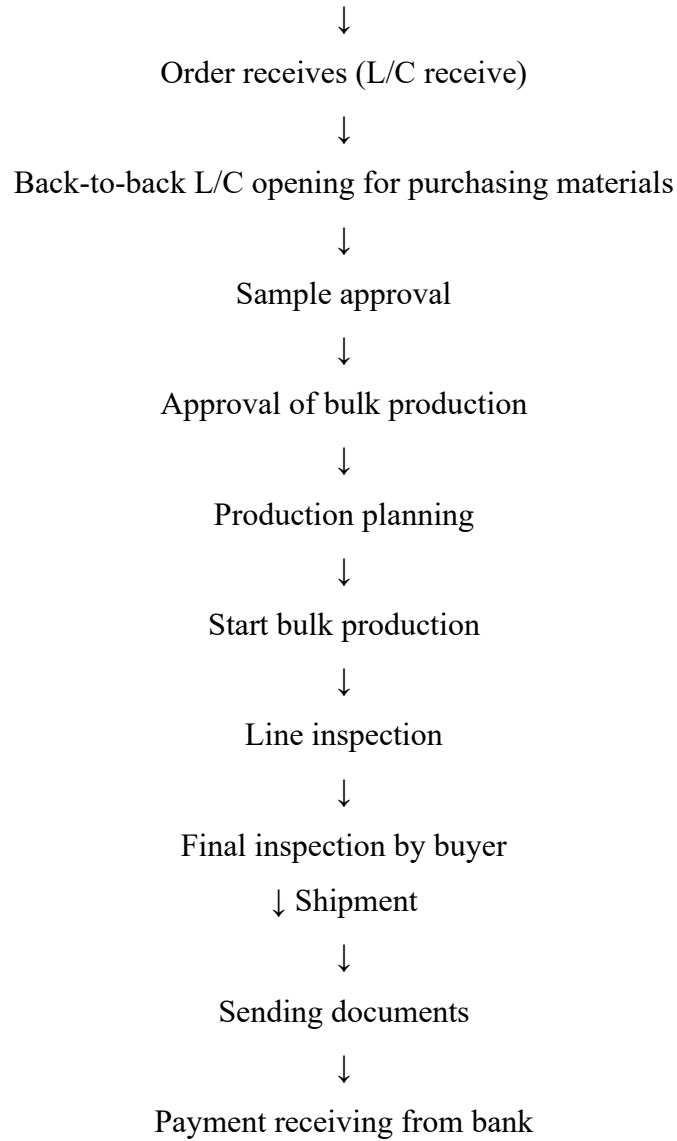


Table 5: Sample Requirements for some buyers of MKDL

1. GU	2. Varner	3. Calzedonia	4. Promodoro
Proto sample	Proto sample	Proto sample	Fitting sample
Marketing	Size set sample	Size set sample	Size set sample
Color sample	Photo sample		PP sample
App sample	PP sample		
	Shipping sample		