



Faculty of Engineering
Department of Textile Engineering
Factors Affecting Cost of Denim Fabric.

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A thesis submitted in partial fulfillment of the requirements for the degree of
Bachelor of Science in Textile Engineering

Advance in Fabric Manufacturing Technology

October 18, 2023

FACTORS AFFECTING COST of DENIM FABRIC

LETTER OF APPROVAL

October 18,2023

To

The Head

Department of Textile Engineering

Daffodil International University

Daffodil Smart City (DSC), Ashulia, Savar, Dhaka-1216

Subject: Approval of Project Report of B.Sc in TE Programe

Dear Sir,

I'm writing to inform you that the Project report titled "Factors Affecting the Cost of Denim Fabric" has been completed for final evaluation. The report, authored by students with IDs 193-23-5739 Shayokh Ahamad Khan and 193-23-5759 Apu Paul, is the result of thorough investigation and analysis of technical data. The students were actively engaged in project function, and the report contains valuable information for readers. Your acceptance and consideration of this report for final evaluation would be greatly appreciated.

Therefore, it will highly be appreciated if you kindly accept this report and consider it for final evaluation.

Yours Sincerely

Prof. Md Mahbubul Haque

Professor & Program Director, M.Sc

Department of Textile Engineering

Faculty of Engineering

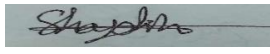
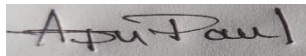
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FACTORS AFFECTING COST of DENIM FABRIC

DECLARATION

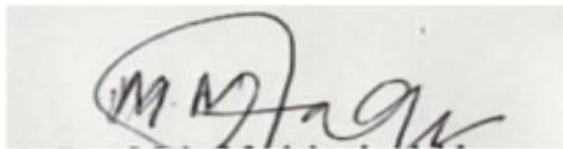
We confirm that the research submitted in this thesis titled "Factors Affecting the Cost of Denim Fabric" is entirely our own central work, has not been submitted for any other university degree, and all sources and materials utilized have been appropriately credited.

Prepared by:

NAME	ID	Signature
Shayokh Ahmed Khan	193-23-5739	
Apu Paul	193-23-5759	

This is to certify that the above announcement made by the candidate is appropriate to the best of my knowledge.

Supervisor



Prof. Md Mahbubul Haque

Professor & Program Director, M.Sc Department
of Textile Engineering

Daffodil International University

ACKNOWLEDGEMENT

"I would like to express my cordial gratitude to my advisor, **Prof. Md Mahbubul Haque, Professor & Program Director, M.Sc, Department of Textile Engineering**, for his priceless guidance, encouragement, and expertise throughout the whole research process. Their

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insightful feedback and unwavering support greatly enriched this thesis.

I extend my appreciation to my Institute Daffodil International University for providing the essential resources and a conducive environment for conducting my research.

I am also grateful to my parents for their continuous support and understanding during this academic journey.

Lastly, I acknowledge the countless unnamed individuals and resources that have indirectly contributed to this work. Thank you all for being a part of this endeavor."

ABSTRACT

This thesis delves into the various factors affecting the cost of denim fabric, seeking to uncover the core determinants impacting its production expenses and overall economic viability. Through a thorough examination of existing literature, analysis of industry data, and in-depth cost modeling, this study reveals the complex interplay of critical components such as raw material expenses, labor, technological advancements, sustainability initiatives, and market dynamics in shaping the cost dynamics of denim fabric. Grasping these determinants is essential for industry stakeholders to finetune production methodologies, make well-informed strategic choices, and optimize the costeffectiveness of denim fabric while upholding standards of quality and sustainability.

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FACTORS AFFECTING COST of DENIM FABRIC

CHAPTER-1 INTRODUCTION

FACTORS AFFECTING COST of DENIM FABRIC

The denim fabric industry, a linchpin of global fashion, epitomizes style, durability, and versatility. Within this industry, the meticulous analysis of costing factors is paramount, influencing the production, pricing, and competitiveness of denim fabric. This thesis delves into a comprehensive examination of the multifaceted elements that constitute the costing structure of denim fabric. It encompasses a thorough exploration of raw material costs, manufacturing processes, technological advancements, labor, regulatory compliance, sustainability measures, and market dynamics. By scrutinizing these intricate factors, this research aims to offer valuable insights and a holistic understanding of the cost dynamics, assisting industry stakeholders in formulating informed decisions to optimize cost-efficiency, foster innovation, and promote sustainable practices in the denim fabric manufacturing landscape.

1.1 Objectives of the Study

1. Identify raw material costs and their impact on denim fabric pricing.
2. Analyze manufacturing processes and their efficiency in cost management.
3. Assess labor costs and productivity in denim fabric production.
4. Evaluate technological advancements and their influence on cost reduction.
5. Consider environmental factors affecting production costs and sustainability.
6. Examine market demands and their role in determining denim fabric pricing.
7. Provide insights to optimize cost-affecting while maintaining quality standards in denim fabric Manufacturing.

1.2 Extent of the Study

This study delves into denim fabric production, analyzing raw material costs, market trends' impact, manufacturing processes, labor expenses, technological advancements, sustainability costs, cost-saving approaches, regulations, and case studies. The aim is to optimize denim production costs while considering market demands, sustainability, and industry regulations for an efficient and competitive denim fabric manufacturing process.

1.3 Limitation

We encountered obstacles during our thesis work:

FACTORS AFFECTING COST of DENIM FABRIC

1. Gathering certain raw data from the finishing and preservation department proved difficult due to various constraints.
2. Time constraints were significant, hindering a deeper understanding of the sectors we interned in and limiting our information gathering.
3. Accessing internal documents, especially reports from inspections and lab tests, required approval from higher authorities, presenting an additional challenge.

CHAPTER-2 LITERATURE REVIEW

FACTORS AFFECTING COST of DENIM FABRIC

1. Denim fabric is primarily made from cotton, and thus, raw material costs, including the price and availability of cotton, significantly impact the overall cost of denim fabric production (Dahlen, 2017).
2. Labor costs and the efficiency of manufacturing processes are critical factors affecting the cost of denim fabric. Research shows that optimizing production processes and reducing labor costs can result in significant cost savings (Li & Cheong, 2019).
3. The cost of energy in denim fabric production, along with environmental considerations, plays a crucial role. Energy-efficient manufacturing processes and sustainable practices can affect the cost structure of denim production (Xu & Chen, 2018).
4. Integration of advanced technologies, such as automation and computer-aided design, can streamline production processes and reduce costs in denim manufacturing (Wang & Choi, 2020).
5. Market dynamics and competition within the denim industry significantly impact the pricing and cost strategies. Understanding market demand and adjusting production to meet consumer preferences is essential for cost-effectiveness (Gupta & Bansal, 2016).

CHAPTER–3 EXPERIMENTALDATA

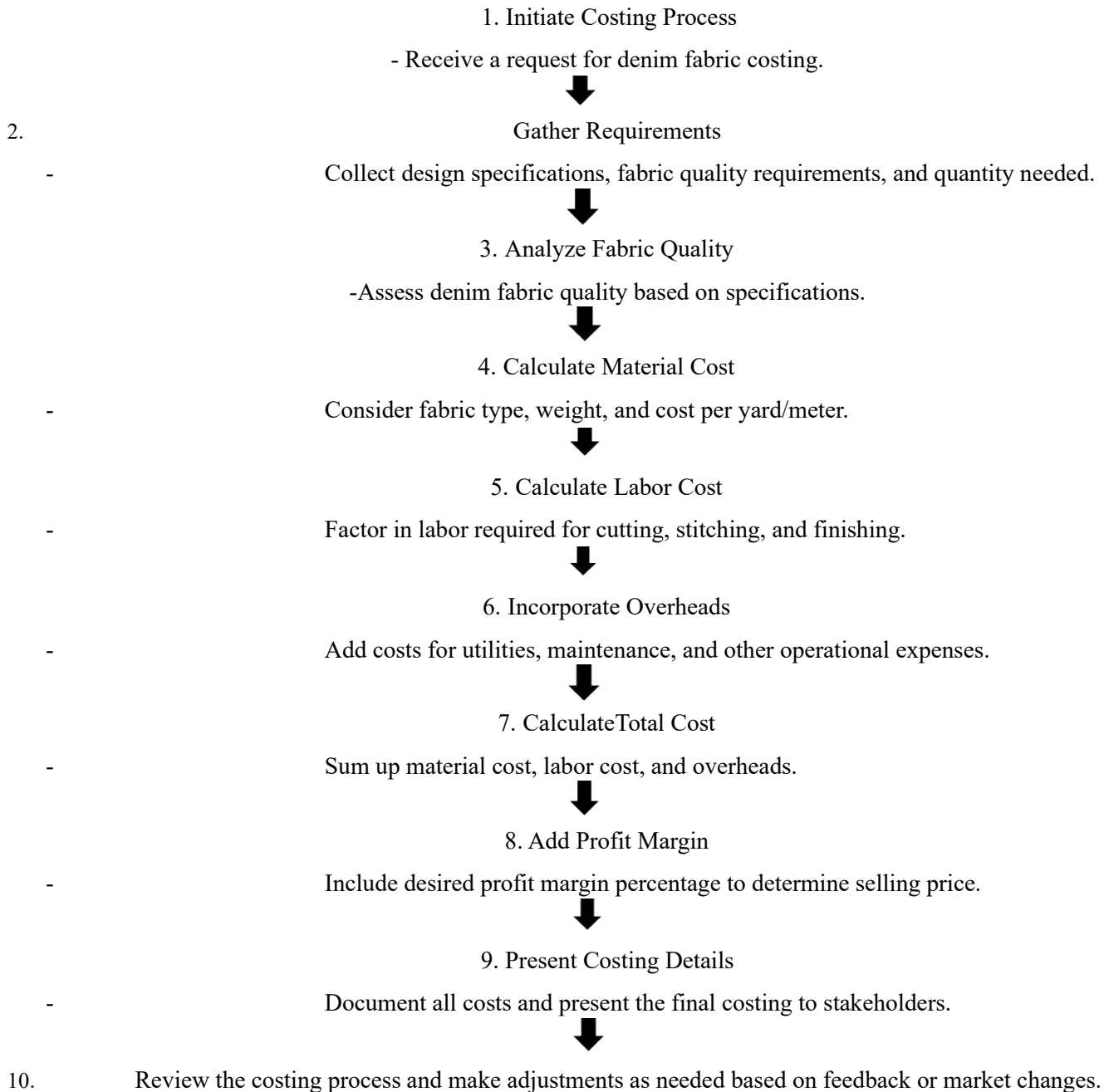
FACTORS AFFECTING COST of DENIM FABRIC

3.1 Selected Factory

The study focused on analyzing the factor effective cost of denim fabric at a denim production company established in 2016 in Vulta, Rupganj. The research encompassed an in-depth evaluation of the manufacturing processes, including varying yarn counts, types and other influencing factors. An extensive inventory study was conducted across operational stages to quantify factors which is effected on cost of denim fabric . Additionally, interviews were conducted with five individuals from the department, supplemented by insights from production-supporting employees to gather comprehensive machine specifications.

FACTORS AFFECTING COST of DENIM FABRIC

3.2 Process Flow Chart of Costing Process of Denim Fabric.



3.3 Costing of Denim Fabric Based on 2023 rate :

Cost Elements	Raw Materials	Labor	Overhead
Cost Per Unit (USD)	\$0.35-\$0.45	\$0.10-\$0.15	\$0.05-\$0.10
Total Cost Per Unit	\$0.55-\$0.80		

FACTORS AFFECTING COST of DENIM FABRIC

Table no.1: Costing of Denim Fabric Based on 2023 Rate

This cost breakdown is derived from data gathered from multiple denim fabric manufacturers in Bangladesh. The cost range is influenced by various factors mentioned earlier, including the type of denim fabric, raw material quality, manufacturing efficiency, and the scale of the operation.

Outlined are some primary cost components in denim fabric production:

1. **Raw Materials:** Key ingredients are cotton and indigo dye, with costs varying based on types and market prices. For instance, organic cotton tends to be pricier than conventional.
2. **Labor:** Labor constitutes a significant cost, relatively lower in Bangladesh compared to countries like China and Turkey. Labor cost is influenced by skill levels and operation size.
3. **Utilities:** Electricity, water, and fuel costs are significant and fluctuate based on process efficiency and operation size.
4. **Overhead:** Includes rent, insurance, and depreciation, spread over total production volume, resulting in a relatively low cost per unit.

It's crucial to recognize that this cost breakdown is a representation, and actual manufacturing expenses in Bangladesh may differ based on numerous factors.

3.4 Costing Calculation Of Denim Fabric

Per-unit cost = (Raw materials cost + Labor cost + Overhead costs) / Total units produced Here is an example of a cost calculation for per-unit denim fabric manufacturing:

Category		Cost (Per yard)
Raw Material	Cotton yarn	\$1.00
	Warp sizing	\$0.25
	Other chemicals/materials	\$0.10
Labor	Direct labor	\$2.00
	Indirect labor	\$0.50

FACTORS AFFECTING COST of DENIM FABRIC

Rent and utilities	Maintenance	\$0.10
	Other expenses	\$0.20
Total per-unit cost		\$4.15

Table no.2: Cost Calculation of Denim Fabric Manufacturing

It's important to remember that this is merely an illustration and that the real cost per unit of producing denim fabric will depend on a number of variables, including the kind of denim fabric being produced, the effectiveness of the manufacturing process, and the cost of raw materials and labor in the particular location where the denim fabric is being produced.

The following extra considerations should be used when determining the cost of producing denim fabric per unit:

Waste: Producing denim fabric can produce a lot of waste, thus it's crucial to account for it in the cost estimation.

Quality control: Since denim fabric must adhere to strict specifications, it is crucial to take the expense of quality control testing into account. Denim fabric needs to be packaged and transported to clients, so it's crucial to account for these costs as well. You may calculate the cost of producing denim fabric per unit by carefully taking into account each of these variables.

3.5 Fabric Construction of Denim Fabric Manufacturing :

FACTORS AFFECTING COST of DENIM FABRIC

09/03/2023 NZ DENIM LTD. Denim PO Vape *C. Peppers*

PRODUCTION ORDER

Order No: **NE-4705DF-1035** Issue Date: 30/09/2023

Fabric Composition: **75.50% Cotton 25.50% Poly 3% Spandex**

Finish Fabric: **110x68 aw 127868/16701 (NZ-C-2006) (PC)(W)(65% Poly 35% Cotton)**

Buyer: **Uirogho**

Lock Dyeing Lot: **No**

Yarn Dyed Lot: **No**

Twisting No: **30/9/23**

Order Details

PO No: **230908-13** Marketing Person: **Hi. Hazzel Rhoades**

PI No: **230929/17/2023** Order Qty (m): **3,000**

Customer Name: **Big Blue Corporation Ltd** Weight (after wash): **8.60**

Warp Yarn Quality: **55/36** Weight (after wash): **10.25**

Warp Yarn Quantity: **55/36** Weight (after wash): **55.36**

Warp Yarn Type: **30/9/23** Weight (after wash): **55.36**

Required Length Shrinkage (Denim Wash): **+1.5%** Curves Wash (m): **0**

Required Width Shrinkage (Denim Wash): **+2.2% to -1.6%** Required Length Shrinkage (Heavy Wash): **0**

Required Width Shrinkage (Denim Wash): **2206/16701 (NZ-C-2006) (PC)(W)(65% Poly 35% Cotton)** Colour: **Indigo**

Required Width Shrinkage (Heavy Wash): **110x68 aw 127868/16701 (NZ-C-2006) (PC)(W)(65% Poly 35% Cotton)** Last Delivery: 26/09/2023

Warping

Total Warping (100%): **4612** Warp Yarn Brand: **hi Textile Ltd**

Total Trade: **8228** Warping Start Date: **12/10/2023**

No. of Beams: **445** Warping End Date: **12/10/2023**

No. of Beams: **3** Warping and Date: **12/10/2023**

Warp Yarn Sub Code: **NE-2508** Warping yarn colour: **Warping yarn colour**

Warp Pattern

Count	Ply	Type	Blend	Total	Color Note	Use%	Warp(kg/yrd)	T.Warp(kg)
1611 Rung Sub	1	1	1	1	1	100.00	0.264	993.16
				Total Warp		100	0.264	993.16

Sizing & Dyeing

Total Dyeing Yards: **4566** Dyeing Start Date: **13/10/2023**

Beam Width: **81.20** Dyeing End Date: **13/10/2023**

Steam Duration: **3100** No. of Beams: **3**

Loosening: **No** Dyeing Ref: **Prog 0531, 55-1479 (Bulk)**

Beam Length (m): **1,575**

Section: Weaving

Total Weaving (100%): **4312** Dyeing width (m): **79**

Garage EP: **72** Loom Run: **850**

Garage SP: **50** Loom Start Date: **14/10/2023**

Warp/Beam: **36.4** Weave end Date: **23/10/2023**

Reed Spec (Inch): **96.5** Warp Yarn Brand: **hi Textile Ltd**

Warp yarn colour: **Indigo** Warp Yarn Ratio: **100**

Warp yarn Count: **20 x 70D (PC)(W)(65% Poly 35% Cotton)** Warp Yarn Sub Code: **No**

Seivedge Design: **2/2 Matt** Seivedge Size (MM): **6**

Finish (mm): **68** Weave: **3/1 RHT**

Rand Count: **36** Seivedge End (mm): **6**

Warp Pattern

Count	Ply	Type	Blend	Total	Color Note	Use%	Warp(kg/yrd)	T.Warp(kg)
70 x 70D (PC)(W)(65% Poly 35% Cotton)	1	1	1	1	1	100.0	0.186	61
				Total Warp		100	0.586	61

Finishing

Total Finishing Yards: **3537** Finishing Start Date: **24/10/2023**

Colour: **0** Finishing End Date: **24/10/2023**

Wash Shrinkage After Denim Wash: **0** Wash Shrinkage After Heavy Wash: **0**

Length Shrinkage After Denim Wash: **0** Length Shrinkage After Heavy Wash: **0**

Inspection

Total Inspection Yards: **3537** Inspection Start Date: **25/10/2023**

Target Premium: **0** Inspection End Date: **25/10/2023**

Cost and R&D: *30/9/23*

Lab (QA): *30/9/23*

QA & PC: *30/9/23*

Manager/AGM (R&D): *30/9/23*

HOD (QA & PC): *30/9/23*

HOD (R&D): *30/9/23*

General Manager (GM): *30/9/23*

Project: *30/9/23*

3.5.1 Production order:

Fabric composition	Finish Fabric construction	Buyer	Lock Dyeing Lot	Yarn dyed Lot	Twisting
23.50% cotton, 23.50% Poly,	110x68 aw 127868/16701 (1/20) (NZ-C-	Uirogho	No	No	No

FACTORS AFFECTING COST of DENIM FABRIC

3% Spandex	200#) A20 + 70D (PC) ×W× 65% Poly 35% cotton)				
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Table no.4:production order sheet

3.5.2 Production Details :

Production No	Production Index No	Garments Name	Requied Length Shrinkage (wash)
9390 (E11) 400.8	2302429 1 /7649	Big Boss Corpor ation Ltd.	+/- 3%

Table no.5: production order details

3.6 Example of Costing data chart for denim fabric manufacturing from different order sheet:

FACTORS AFFECTING COST of DENIM FABRIC

M/P: 10, Mark

PROFORMA INVOICE

Invoice No: 1 NZDL/230831291/7502
 Date: 31/08/2023
 Factory: 1 Kenpark Bangladesh Apparel (Pvt.) Limited.
 Buyer: Marks and Spencer
 Plot No. 69-B5, Sector-03, Karnaphuli E.P.Z./KEPZ, Chittagong, Bangladesh. BIN NO: 000236562-0803

Delivery Address:
 Vat Registration No. 21081006139
 BIN NO. 000246294-0303

SL.	Description of Goods	Color	Quantity	Unit Price	Total Amount	
1	59% BCI Cotton, 41% Linen Denim 3/1 RHT, Const: 8.5+8.5x25, BW-11.00 AW-11.08 F.Width:69/70 Dimensional Stability(Method ISO 6330) Warp +/-3% & Weft +/-3%, HS Code: 5211.42.00 Code No NZ-9213	Ecrú	8,200.000	yd	USD 5.71	46,822.00
			Total :	8,200,000 yd	Total :	46,822.00

In Word : USD Forty-Six Thousand Eight Hundred Twenty-Two Only

TERMS AND CONDITION

- 100% Irrevocable LC confirmed at **90 Days sight from the date of Fabric delivery** to be opened in favor of **NZ DENIM LTD.**
 - P.I Validity 7 working days from P.I issue date.
 - Letter of Credit to allow for Partial Shipment with partial Documents with Maturity.
 - The delivery challan and truck receipt should be signed by applications at the time of delivery of fabrics with seal and signature.
 - Due to any unavoidable circumstances if the LC expired the applicant will extend the LC by amendment.
 - Original BTMA & MUSHAK will be handed over to the applicant after received of bank maturity. For such purpose item & quantity of garments should be mentioned in the LC.
 - Maturity date should be counted from the date of delivery of Fabrics.
 - Payment to be made on maturity in US Dollar.
 - Country of Origin: Bangladesh.
 - If payment is not made within maturity date then interest @2% per month will be charge for overdue period and applicant is liable to pay without any question.
 - Cash incentive against this LC will be claimed by Beneficiary.
 - Where GSP Certificate is required, applicant is requested to furnish full detail of the Master LC in BTB LC opened in favor of Beneficiary.
 - Bulk fabrics delivery: 40 days after receive of confirmed LC.
 - All apparent errors/discrepancy (if any) would be acceptable by LC opener.
 - Copy of UD/IP will be supplied to the beneficiary within 10 days of opening of L/C by the applicant.
 - The above mentioned terms and condition will be the integral part of the BTB LC.
 - Both Quantity & Price Should Allow 3% Plus/Minus.
 - BIN, e-TIN & Bond Licence number must be mentioned in LC.**
 - Delivery will be made after receiving UD/IP.
 - Fabric Colour must be mentioned in UD with bold paper.
- Advising bank: The City Bank Ltd., Trade Service Division, Palmal Tower, Level-1, Plot-55, Gulshan Avenue, Gulshan Dhaka-1212, Bangladesh. swift: CIBLBDDH.**
 For NZ DENIM LTD.

FACTORS AFFECTING COST of DENIM FABRIC

H/P : Mr. Md. Saikat Chowdhury

PROFORMA INVOICE

Invoice No : **NZDL/230924291/7649**

Factory : **Big Boss Corporation Ltd.**
 Aptech Industrial Park, Holding # 30, Gheraba, Kathampur, Gazipur, Bangladesh. BIN NO: 000235885-0103, e-TIN NO: 717375232369

Date : **24/09/2023**

Buyer : **Mirogllo**

Delivery Address :
 Vat Registration No. 21081006139
 BTN NO: 000246294-0303

SL	Description of Goods	Color	Quantity	Unit Price	Total Amount	
1	73,50% Cotton, 23,50% Poly, 3% Spandex Denim 3/1 RHT, Cont: 16x20+70D, BW-8.60 AW-10.25 F.Width-55/56 Dimensional Stability(Method ISO 6330) Warp +/-3% & Wft -12% to -16%, Style: R568Q0, HS Code: 5211.42.00 Code No KZ-47050F-1025	Indigo	3,500.000	yd	USD 3.00	10,500.00
Total :			3,500.000	yd	Total :	10,500.00

In Word : USD Ten Thousand Five Hundred Only

TERMS AND CONDITION

1. 100% Irrevocable LC confirmed at **90 Days sight from the date of Fabric delivery** to be opened in favor of **NZ DENIM LTD.**
2. P.I Validity 7 working days from P.I issue date.
3. Letter of Credit to allow for Partial Shipment with partial Documents with Maturity.
4. The delivery challan and truck receipt should be signed by applications at the time of delivery of fabrics with seal and signature.
5. Due to any unavoidable circumstances if the LC expired the applicant will extend the LC by amendment.
6. Original BTMA & MUSHAK will be handed over to the applicant after received of bank maturity. For such purpose item & quantity of garments should be mentioned in the LC.
7. Maturity date should be counted from the date of delivery of Fabrics.
8. Payment to be made on maturity in US Dollar.
9. Country of Origin: Bangladesh.
10. If payment is not made within maturity date then interest @2% per month will be charge for overdue period and applicant is liable to pay without any question.
11. Cash incentive against this LC will be claimed by Beneficiary.
12. Where GSP Certificate is required, applicant is requested to furnish full detail of the Master LC in BTB LC opened in favor Beneficiary.
13. Bulk fabric delivery: 40 days after receive of confirmed LC.
14. All apparent errors/discrepancy (if any) would be acceptable by LC spener.
15. Copy of UD/IP will be supplied to the beneficiary within 10 days of opening of L/C by the applicant.
16. The above mentioned terms and condition will be the integral part of the BTB LC.
17. Both Quantity & Price Should Allow 3% Plus/Minus.
18. **BIN, e-TIN & Bond Licence number must be mentioned in LC.**
19. Delivery will be made after receiving UD/IP.
20. Fabric Colour must be mentioned in UD with bold paper.

Advising bank: The City Bank Ltd., Trade Service Division, Palmal Tower, Level-1, Plot-55, Gulshan Avenue, Gulshan Dhaka-1212, Bangladesh. swift: CIBLBDDH.
 For NZ DENIM LTD.

Authorized Signature _____

Table no.6: affecting cost of denim fabric

FACTORS AFFECTING COST of DENIM FABRIC

Total amount										\$46,022
Unit Price									USD	5.71
Quantity										8,200 yd
Color										Ecru
Wefr Count C2										+/- 3%
Warp Count C1										+/- 3%
Dimensional Stability										Method ISO 6330
Fabric Width										09/70
Construction										Const: 8.58.5x25
Weaving Design										3/1 RHT
Raw material										59% BCI Cotton, 41% linen Denim

Table.no.7: Costing Sheet of a Buyer

Total Price	
Unit price	
Quantity	
Color	
GSM	
PPI	
EPI	
Wefr count	
Warp count	
Wefr Count (C2)	
Warp Count (C1)	
Dimensional Stability	
Fabric Width	
Construction	
Weaving Design	
Raw Material	

FACTORS AFFECTING COST of DENIM FABRIC

23.50% Cotton,2 3.50 Potr, 3% Spandex	Denim 3/4 PMT	16x20 700	55/56	Method ISO(150 6310)	+/- 3%	+/ 12% to +/- 16%,	50	40	130	70	500	Indigo	3.500 yd	USD 3.00	\$10. 50
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Table no.8: A costing sheet of a Buyer

3.7 Costing Of Some Different Denim Fabric :

Denim Fabric Type	Weight (oz/yd ²)	Complexity	Production Volume (meters/month)	Total Cost Per Meter
Raw denim	12	Low	100,000	\$1.40
Stretch denim	11	Medium	50,000	\$1.60
Selvedge denim	14	High	25,000	\$2.00

Table no.9: Costing Data chart of colored denim fabric manufacturing This

table compares different types of denim based on weight, complexity, production volume, and total cost per meter:

1. Raw denim:

- Weight: 12 oz/yd²

FACTORS AFFECTING COST of DENIM FABRIC

- Complexity: Low
- Production Volume: 100,000 meters/month
- Total Cost Per Meter: \$1.40

2. Stretch denim:

- Weight: 11 oz/yd²
- Complexity: Medium
- Production Volume: 50,000 meters/month
- Total Cost Per Meter: \$1.60

3. Selvedge denim:

- Weight: 14 oz/yd²
- Complexity: High
- Production Volume: 25,000 meters/month - Total Cost Per Meter: \$2.00

3.7.1 Here are the individual data tables for Raw Denim, Stretch Denim, Selvedge Denim fabric construction, including yarn count, GSM, EPI, and PPI:

Type	Composition	YarnCount	EPI	PPI	GSM
Raw Denim	100% Cotton	14.5	34	34	68
Raw Denim	98% Cotton, 2% Elastane	13.5	32	32	64
Raw Denim	95% Cotton, 5% Spandex	12.5	30	30	60
Raw Denim	97% Cotton, 17% Polyester	11.5	28	28	56
Raw Denim	87% Cotton, 19% Polyester	10.5	26	26	52
Stretch Denim	Light Stretch Denim	95% Cotton, 5% Spandex	220	56	20/1 Ne
Stretch Denim	Medium Stretch Denim	98% Cotton, 2% Spandex	250	60	25/1 Ne
Stretch Denim	Heavy Stretch Denim	100% Cotton	280	64	28/1 Ne

FACTORS AFFECTING COST of DENIM FABRIC

Stretch Denim	Super Stretch Denim	90% Cotton, 10% Spandex	190	52	18/1 Ne
Selvedge Denim	1	Warp: 16s, Weft: 12s	64	48	300
Selvedge Denim	2	Warp: 18s, Weft: 14s	72	54	350
Selvedge Denim	3	Warp: 20s, Weft: 16s	80	60	400
Selvedge Denim	4	Warp: 22s, Weft: 18s	88	66	450
Selvedge Denim	5	Warp: 24s, Weft: 20s	96	72	500

3.8 Factors That Affects costing of Denim Fabric Manufacturing:

Factor	Description	Impact on Cost
Raw material costs	The cost of raw materials, such as cotton and indigo dye, makes up a significant portion of the cost of denim fabric manufacturing.	The price of raw materials can fluctuate depending on market conditions and other factors, which can have a significant impact on the cost of production.
Energy costs	Denim fabric manufacturing is a relatively energy-intensive process. The cost of energy, such as electricity and natural gas.	The cost of energy can depend on the region and other factors, which can affect the cost of production.
Labor costs	Labor costs also play a major role in the cost of denim fabric manufacturing.	Businesses that produce denim fabric in countries with lower labor costs can reduce their overall cost of production.
Production efficiency	The efficiency of the production process can also have a significant impact on the cost of denim fabric manufacturing. A more efficient production process can help to reduce costs by	Businesses that invest in efficient production technologies can reduce their overall cost of production.

FACTORS AFFECTING COST of DENIM FABRIC

	reducing waste and improving productivity.	
Environmental regulations	Environmental regulations can also affect the cost of denim fabric manufacturing. For example, regulations on the use of water and chemicals can increase the cost of production.	Businesses that operate in countries with stricter environmental regulations may have higher costs of production.
Type of denim fabric being produced	Various types of denim fabric, such as raw denim, and stretch denim, have different production requirements and costs.	Businesses that produce more complex types of denim fabric may have higher costs of production.

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Quality of the denim fabric being produced	Higher-quality denim fabric generally has a higher cost of production.	Businesses that produce high-quality denim fabric may have higher costs of production, but they may also be able to sell their fabric at a higher price.
Scale of the production operation	Larger production operations can often achieve economies of scale, which can help to reduce costs.	Businesses that produce denim fabric on a large scale may have lower costs of production than businesses that produce denim fabric on a smaller scale.
Location of the production operation	The price of production can depend on the country of origin and other factors.	Businesses that produce denim fabric in countries with lower overall costs of production may have lower costs of production.
Transportation cost	The cost of transporting raw material and finished goods can vary depending on the distance between the different stages of the manufacturing process, the mode of transport used, and the current fuel price.	The price of transporting useful materials and finished goods can have a remarkable impact on the all cost of manufacturing denim fabric. This is especially true for manufacturers who source their raw materials from overseas or who ship their finished goods to distant markets.

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Marketing and advertising cost	The cost of marketing and advertising denim fabric can vary depending on the target market and the size of the company. Larger companies with larger budgets may be able to negotiate lower price of marketing and advertising services.	The cost of marketing and advertising denim fabric can also vary depending on the manufacturer's target market and marketing strategy. For example, manufacturers who sell their products to high-end fashion brands may need to invest more in marketing and advertising than manufacturers who sell their products to massmarket retailers.
Research and development cost	The cost of research and development (R&D) can vary depending on the size of the company and the amount of investment in new technologies and processes. Company that invest heavily in (R&D) may be able to develop new denim fabrics that are more costeffective to produced or the have superior performance characteristics.	Manufacturers who are constantly developing new and innovative denim fabrics may need to invest more in research and development. This can lead to higher manufacturing costs, but it can also give the manufacturer a competitive advantage.
Overhead cost	Overhead costs include the cost of running the business such as rest rent, utilities, insurance, and salaries for administrative staff. These costs can vary depending on the size of denim fabric manufacturing	Overhead costs, such as rent, utilities, and insurance, can also have a significant impact on the cost of manufacturing denim fabric. Manufacturers who operate large and complex facilities will typically have higher overhead costs than manufacturers who operate smaller and more efficient facilities.

Table no.10: Factors that affects the costing of denim fabric manufacturing

It is significant to note that based on the unique aspects of the company, the effect of each component on the cost of manufacturing denim fabric can change. For enterprises that create

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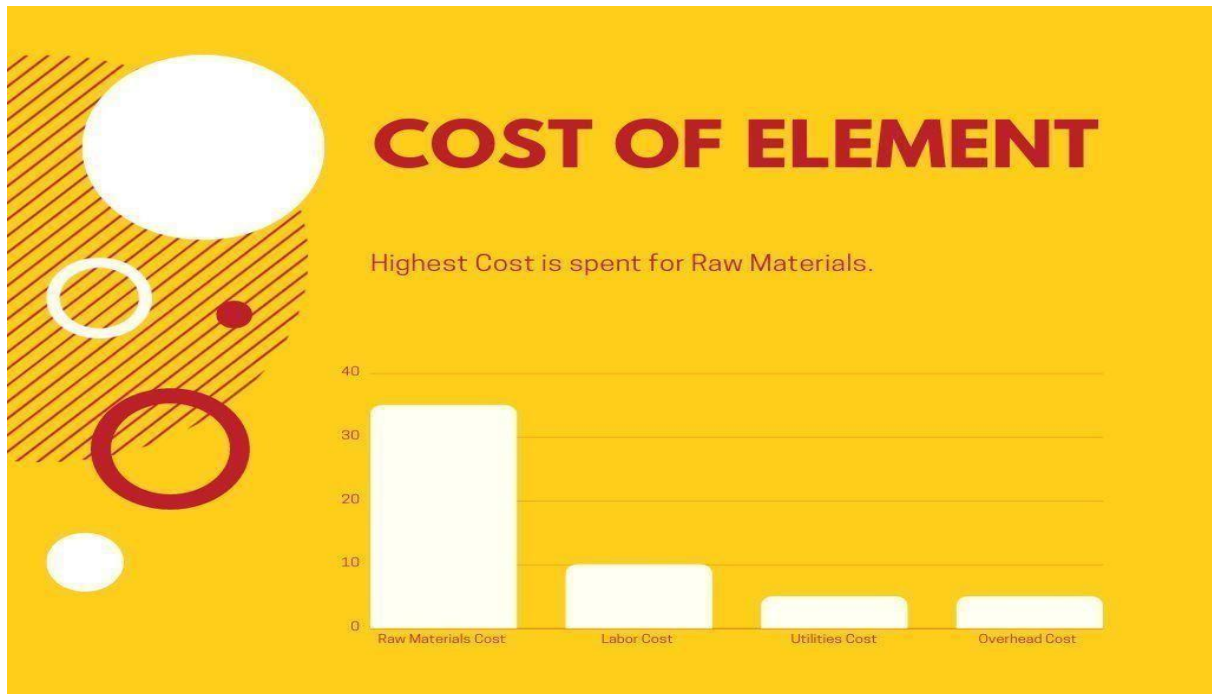
significant amounts of denim fabric, the effect of raw material costs on manufacturing costs will be greater.

The information in this data sheet can be used by businesses to pinpoint the elements that have the greatest impact on their cost of production. They can create plans to cut costs and increase profitability once they have identified these elements.

CHAPTER -4 RESULT & DISCUSSION

FACTORS AFFECTING COST of DENIM FABRIC

4.1 Analysis of Costing of Denim Fabric Based on 2023 Rate:



Graph:4.1Analysis of Costing of Denim Fabric Based on 2023 Rate

Findings:

The bar chart shows the cost of raw materials, labor, utilities, and overhead for a company. The highest cost is for raw materials, at \$0.35-0.45, followed by labor at \$,0.10-0.15, utilities at \$0.05-0.10 and overhead at \$0.05-0.10.

The high cost of raw materials is likely due to the nature of the company's business. For example, if the company is a manufacturer, then raw materials will be a major cost. The cost of labor is also significant, but it is lower than the cost of raw materials. This suggests that the company is either relatively efficient at using labor, or that it is located in a region where labor costs are relatively low.

The cost of utilities and overhead are relatively low compared to the amount of raw materials and labor. This suggests that the company is either able to negotiate good rates for utilities, or that it has a relatively small physical footprint.

Overall, the bar chart shows that the company's biggest cost is raw materials. This is something that the company should be aware of, and it should take steps to manage this cost effectively.

Here are some additional discussion points:

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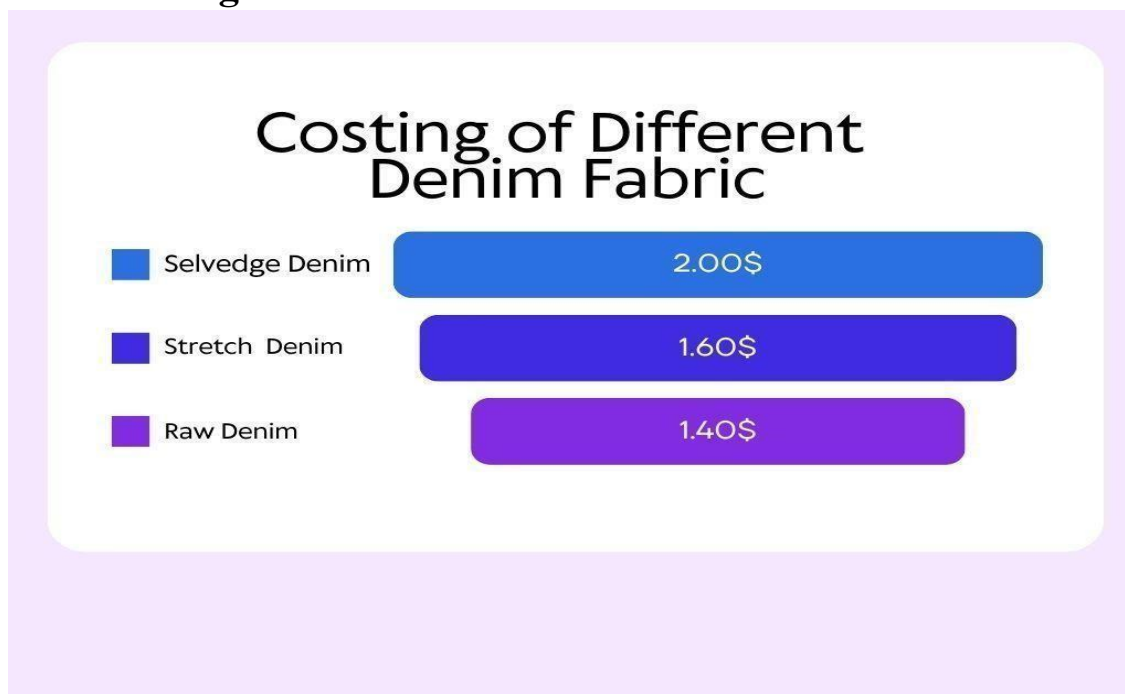
- The company may be able to reduce its cost of raw materials by negotiating better prices with suppliers, or by specifying its raw materials from low-price suppliers.
- The company may also be allow to reduce its cost of labor by increasing its efficiency, or byautomating some of its tasks.
- The company can also try to reduce its cost of utilities by negotiating better rates with its utilities providers, or by reducing its energy consumption.

By taking these steps, the company can reduce its overall costs and improve its profitability.

4.2 Analysis of Costing Calculation of Denim Fabric

When determining the cost of producing denim fabric per unit, factors like equipment depreciation, employee benefits, quality control, and shipping costs should be considered. These variables can impact the per-unit cost calculation, influencing the overall financial health and competitiveness of denim manufacturing businesses.

4.3 Analysis of Costing Data Chart for Different Denim Fabric Manufacturing



FACTORS AFFECTING COST of DENIM FABRIC

4.4 Analysis of Factors that affects the costing of Denim Fabric Manufacturing.

The cost of manufacturing denim fabric is influenced by various factors, each with a distinct impact on overall expenses. Raw material costs, encompassing materials like cotton and dye, significantly affect production expenses as their prices fluctuate based on market conditions. Energy costs, due to the energy-intensive nature of denim production, contribute significantly to overall expenses, varying by region and influencing production costs. Labor costs play a pivotal role, differing based on the country of production and labor skill levels, with lower-cost countries offering reduced overall production expenses.

Moreover, production efficiency holds a key role, with efficient processes reducing waste and boosting productivity, ultimately lowering costs. Environmental regulations, governing water and chemical use, also influence costs, particularly in countries with stringent regulations. The type and quality of denim fabric being produced also impact expenses, with more complex and higher-quality denim requiring additional resources. Scale and location of the production operation, affecting economies of scale and overall regional production costs, further play crucial roles in determining the cost of denim fabric manufacturing. Balancing these factors is essential for achieving cost-effective denim production.

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CHAPTER-5

CONCLUSION

FACTORS AFFECTING COST of DENIM FABRIC

In conclusion, the denim fabric sector, a pillar of international fashion, is distinguished by its classic fusion of fashion, toughness, and adaptability. The comprehensive research of costing aspects that affect production, price, and competitiveness is crucial to its operation. The various components that make up the costing structure of denim fabric were thoroughly examined in this thesis, including the price of raw materials, production techniques, technical developments, labor expenses, regulatory compliance, sustainability measures, and market dynamics.

The study's goals were to identify raw material costs and their impact on pricing, examine manufacturing effectiveness, gauge labor costs and productivity, assess technological advancements, take into account market demands and environmental considerations, and offer suggestions for maximizing cost-efficiency while upholding quality standards in the production of denim fabrics. Despite difficulties in acquiring data, the study examined a particular denim manufacturing facility, offering a thorough analysis of the production processes and a costing process analysis that highlighted key cost components. Additionally, price information and a sample cost estimate were provided to highlight the impact of various aspects. The study also looked at several denim fabric kinds, highlighting how complicated cost determination is.

The results of the analysis showed that factors such as raw material costs, energy costs, labor costs, production efficiency, environmental restrictions, denim fabric type, quality, production scale, and location had a big impact on the price of making denim fabrics. These results highlight the significance of strategic cost management and efficiency improvement to reduce production costs and keep the denim fabric sector competitive. Denim producers can achieve profitability while satisfying market needs and environmental objectives by carefully considering and employing effective cost control measures.

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Factors Affecting Cost of Denim Fabric.

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