Faculty of Engineering

Department of Textile Engineering

Project On

STUDY ON INDUSTRIAL ENGINEERING

Course Title: Thesis

Course code: TE-432

Submitted By

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The Report presented in Partial Fulfillment of the requirement for the degree of

Bachelor of Science in Textile Engineering

Advance in Apparel Manufacturing Technology

Duration Time: Spring'2021

LETTER OF APPROVAL

To

The Head

Department of Textile Engineering Daffodil International University

102, Shukrabad, Mirpur Road, Dhaka 1207

Subject: Approval of Thesis Report of B.Sc. in TE Program

Dear Sir,

We just write to let you know that the student is carrying the title of this project report titled Industrial Engineering Review. For final assessment**, Muhibbul Mowla Sakib, ID: 172-23-5058& Iftakhar Islam Ovi, ID: 172-23-5029** are done. The entire thesis is prepared on the basis of an accurate investigation and an interference by crucial evaluating analytical findings with necessary elements, the student has been active in its project activities personally and the report isimportant to provide the readers with many useful details.

It is also welcomed if you accept this thesis paper and take it into account in the final assessment.

Yours Sincerely

……..

Abdullah Al Mamun,

Assistant Professor

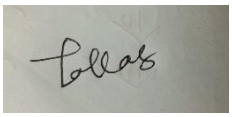
Department of Textile Engineering

Daffodil International University

DECLARATION

Hereby We state that, under the guidance of Abdullah Al-Mamun (Assistant Professor), Faculty of Technology, Department of Textile Engineering, Daffodil International University, we have done this industrial connection. We also state that, except where the necessary reference was made in the document, no such industrial attachment and no portion of such industrial attachment was presented elsewhere for graduation or certification.

Submitted By:



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Name: Muhibbul Mowla Sakib

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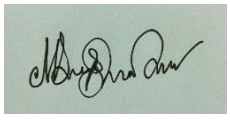

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Department of Textile Engineering

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DEDICATION

We would like to thank Allah above all, all-powerful. By the grace of God, our research paper is finished successfully. We would like to thanks **Mohammad Abdullah Al-Mamun, Department of Textile Engineering, Daffodil International University** and his greatest contribution to our progress. Our father in particular, whose hard exhaustion aids in this situation. Frankly, my friends, cousins or kin, we want to tell to anyone who owes the loyalty.

ACKNOWLEDGEMENT

As for profession thesis is the first step of a student, especially on technical side. It's a part of study through practically running processing technology of an industrial unit for a student.

First of all, our gratefulness goes to almighty Allah who gave us strength and ability to complete the industrial training and attachment report; may your name be exalted, honored and glorified.

Now we wish to take this excellent opportunity to thank our honorable principal **Mr. Md. Mominur Rahman,** who permitted us to do an internship at a reputed company like N.AZ Bangladesh Ltd and **Mohammad Abdullah Al-Mamun,** our supervising teacher, to whom we are extremely indebted for his tremendous support and guidance throughout our training period.

Finally, we would like to thank the management of **N.A.Z BANGLADESH LTD.** for giving us the opportunity to do the industrial training successfully and also their valuable suggestions. My deepest appreciation goes to **Rubel Mallik (Assistant Manager-HRD), N.A.Z KNIT Composite LTD** for his permission to conduct our industrial training without which it would be uncompleted. His generous support is greatly appreciated. We would also like to thanks **N.A.Z** for helping us to complete industrial training successfully. My gratitude also goes to all the employees of **N.A.Z** specially **Juwel Ahmed** (Asst.Manager, Merchandising), **Shahed Rezwan** (Sr. Merchandiser**), Abdullah Al Mamun** (Manager, Sample**)** for their sincere co-operation, support and valuable advices.

Last but not least, go to my precious family for their never-ending love and inspire at every stages of my life. Without their continuous contribution, We would not be a person we are right now.

After all, we would like to acknowledge that we remain responsible for the in-adequacies and errors, which doubtless remain in the following report.

ABSTRACT

Apparel manufacturing factories are facing the global competition of cost-saving, productivity, and quality improvement. Industrial Engineering is dealing with these factors to reach the highest level of productivity, quality with minimum waste. So an industrial engineer has a wonderful opportunity to contribute to the apparel manufacturing sector by implementing all engineering tools for the growth of this industry.
IE team works in cutting, sewing, and finishing to reduce manpower and WIP, setting line Layout (operation breakdown) increase work efficiency, productivity, Demand forecasting, develop new design, Develop Layout, Work with different quality tools, Bend product and seasoning development, Efficiency, Wages and earning calculation, CNC machine operation, Scheduling, Capacity analysis, Line balancing, Kaizen, Kanban, Production planning, Calculate NPT, Bottleneck removing, etc. They analyze CM, SMV, costing, consumption, profit- Loss. Good IE teams make a good efficient factory. Here we'll analyze SMV, Target and Efficiency of some products.

Firstly, we had to studied on the overall status of the industry. Learning about their well-organized manpower management and administrative system. For this project purpose we have to understand the proper work of an industrial engineer. After learning and observing their procedure we have selected three items; A basic T-Shirt, A Long Pant and A Short Pant. We'll analyze their SMV, Target and Efficiency and the total manpower used.

Anlyzing the products and the result we found; For the Basic T- Shirt we found the SMV- 5.79, Where target efficiency came- 84% and the capacity was- , total man power used is 28. For the long pant the SMV- 9.08, Target Efficiency- 70%, Capacity- 217.015, total man power- 40. Finally for the short pant, the SMV- 7.81, Target Efficiency- 85%, Capacity- 217, total man power- 33. Here is a chart of total SMV's of the three products-

ITEM	TOTAL SMV
T-SHIRT	5.79
LONG PANT	9.08
SHORT PANT	7.81

Finally after getting knowledge about working, evaluation and decision making, problem solving and analyzing we have learned this vital task on how to valuate the production. We had came jup with the results that increases the value, efficiency, time consuming action and can bring profit.

Contents

List of Figure:

List of Table:

CHAPTER - 1: INTRODUCTION

1.1 Introduction:

The garment manufacturing industry faces many global challenges due to several factors such as competitiveness, increased cost of production, lower productivity/efficiency and labor attribution, the manufacturing sector faces many global challenges.

1.2 Nature of the work in IE:

The most efficient manner of manufacturing, handling or creating a service by an industrial engineering, company is by manufacturers, equipment, resources, knowledge and energy. They are the link between management priorities and corporate performance. Industrial engineers ensure production potential and schedule production, cost savings, SMV reporting and more.

1.3 Objective of the project:

1. Efficiency enhancement.

2. Enhancing the operation's motion reduction.

3. Removal of bottlenecks and process function reduction (WIP).

4. Operational quality improvement.

5. Decrease the computer ratio.

6. Enhanced cost saving, waste management and waste management mechanism Reduce waste and defects.

7. Achieving the main success predictor goal 7. (KPI).

1.4 Daily Activities and Duties of an Industrial Engineer in theApparel Industry:

1. The Department of Planning collect loading plans.

2. Membership in the pre-production (PP) conference.

3. Collect the size of the specimen and create a corresponding operating report.

4. The Activity Bulletin collect and layout.

5. Talk about in-change maintenance problems with your computer, folder, connection and technical staff.

6. Talk about architecture with a responsible floor by paper layout.

7. Check Non-productive Regular Time (NPT) and reduce computer downtime.

8. Build a template according to the paper style.

9. Make balance line by objective and capability analysis for 2-3 days of layout.

10. Search the bottleneck process and overcome it.

11. Make 1 hour if possible

1.5 Importance of the project:

A mix of papers, documents and calculations about our fundamental education and practical life.

• Clothing and clothing industries (80-85) earn about 80% of major foreign currencies

• Industrial engineers use textiles and their subsectors in large numbers.

• Now Bangladesh is a largely foreign-dependency developing country.

1.5 Scope of the project:

• Wonderful opportunities in the textile IE department to do something.

• IE asked one day for an increase in supply.

• Almost every RMG facility and acknowledge the position of IE's production growth.

• RMG industry authors will meet the existing requirements for increasing their returns for the IE segment.

CHAPTER – 2: LITERATURE REVIEW

2.0 Definition:

Industrial Engineering is an industry in which dynamic structures or methods are optimized. There is no question that, in addition to mathematical styles, bodies and social science, it expects and assesses outcome from particular structural styles, the creation, improvement and execution of included personal systems, money, knowledge, comprehension, power and assessment of engineering theories and constructs.

2.1 Concept of IE:

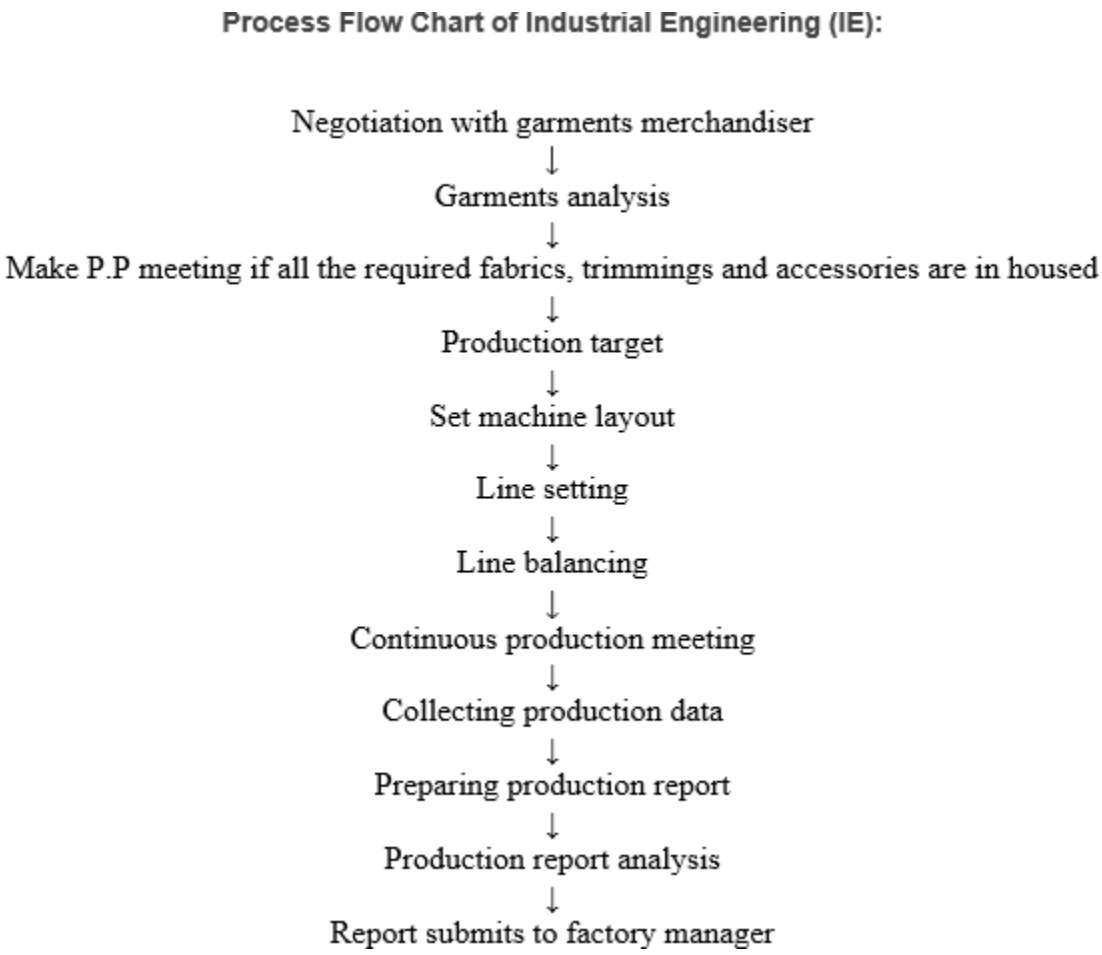
Commercial production is intended for an intensive manufacturing, but at the same time certain factors must be combined into a coordinated and productive system: people, time, equipment and fabrics. The technical gadget for the production of clothes should enable the anticipated product quality, critical production distances, the movement of prepared clothing within the expected time period and the maximum use with minimum fees.

2.1.1 Objects of IE:

• Build ongoing cost improvement strategies and management of production costs.

• Development of programmers that cut costs.

2.1.2 Process Flow Chart of IE:



2.1.3 Functions of IE:

• Develop the right painting form and arrange a fun painting approach. The organisation, by common techniques, of success criteria.

• Substantial pay and benefits design.

• Develop discount and load systems for exploiting and establishing a trendy costing system.

2.1.4 Activities of IE:

- Selection method and assembly of strategies.
- Management system of costs.
- Development and installation of task assessment devices.
- Chirurgical trial.Study in algebra and statistics.

• Results analysis.
• Structure and processes.
• Seller selection and investigation

2.1.5 Role of Industrial Engineer in Garment Industry:

1. Protective measures.

2. The rows are balanced

3. Perfect – process manipulation

4. Training – new workers' training

5. Productivity of operator – maintains surplus efficiency and increases the capacity of low-level operators.

6. Loss manipulation – off-general loss mitigation

7. Management of waste — in products, materials and equipment

8. Standard terminology – inside the machinery at the works, during sewing.As a leader, it can be

a great model for everyone to demonstrate leadership. Each manager represents the organization, and all of its movements are an extension of the company

- Maintenance
- Towards jobs of excellence
- Towards efficiency

2.1.6 Techniques of IE:

Method Study:

To establish the existing operating mode or processes after a thorough review and to install a factory architecture so that a standardized waft of fabric can be provided without additional oversight.

Time Study (work measurement):

This is a way to set up an operation or way for a trendsetting time.

Motion Economy:
The actions of the operators were assessed in this scenario. Criteria for economic movement machine and movement analysis are very useful in mass processing or repeated short cycle operation.
Financial and non-financial Incentives:

This tends to increase people's efforts by guaranteeing rational compensation.

Job Evaluation:

This is a means of evaluating the agency employees' relative good performance by balancing jobs and employees and obtaining a sound payroll.

Materials Handling Analysis:

To scientifically investigate the flow of materials handling. Exterminating wasteful movements across different divisions to decorate the overall efficiency of materials.

Ergonomics (Human Engineering):

There is considerable involvement in analyzing the relationship between man and his or her running conditions. The computer is used for main-gadgets.

2.2 Line Blancing:

Line Balance equates the operative load over all movement of the cell or value so that bottlenecks and excess power are eliminated. A limit slows down the mechanism and takes place when downstream operations are found and additional power effects are absorbed ready and continuous pricing.

2.2.1 Objectivies of Line Balancing:

In any case, wastes are deleted at any price in compliance with the output fee at any point.

• Ongoing movement of contents.
• Manage complete use of power and system capacity.
• Minimum service life.
• Slow time reduction.
• Minimizes the workstation.
• Optimal performance at the desired time
• Reparation of the value of clothes.
• Reduce production costs.

2.2.2 Important of Line Balancing:

1. It also helps to evaluate employment needs.
2. High mixing reduces the output time.
3. The advantage of a plant can be assured by a proper line balance.
4. Adequate line balance guaranteed maximum output at the quality negotiated.
5. Eliminate errors in the final product.

2.2.3 Efficiency:

Efficiency, while assessing success is especially useful and broad, is another means of communicating efficiency. Overall success statistics teach us how we reach a statistically established objective. As the target is articulated as an acceptable period or manufacturing degree, the result is measured quite cleanly.

The system for calculating performance regions fellow: efficiency % =

performance % =

overall minutes produced × 100

Toral house labored × 60

Produced amount × one hundred production goal amounts

2.2.4 Cycle Checks:

A loop is an easy time to instantly search for a target or see if an operator may hit an updated moment or not.

The time of cycle is the time that the operator needs to perform in one cycle, i.e., the time from collection to disposal.
Conduct a cycle test in accordance with these steps:

• Select the investigation/s and enter the best details on the shape.

• See five periods of activity, no time in each cycle of competition.

• Measure the entire cycle time of each operation.

• At the initial given time, measure cycle time.

2.3 Standard Minute Value (SMV):

SMV is defined as the time it can be completed successfully. Usually, the value of the minute is given. The total SMV production is the normal minute value. In the industrial clothing industry the term SMV is commonly used. The SMV is also the regular minute (SAM). For regular and efficient dispatch of an export order, the merchant wants to install a proper SMV in the production floor of garments.

2.3.1 Factors of Standard Minute Value in Garments:

- Types of garments.
- Types of fabrics.
- Garments size.
- Garment design.

2.3.2 SMV Calculation in Garments Industry:

The measurement of SMV within the company varies in accordance with the broad shape of non-life-life, type of cloth, large number of staff, average performance of gadgets, etc.

SMV = quick time + Allowance

Where primary time = set time ×100 points

Allowance = rest allowance + quota permit + deferred allowance unit. Score = the speed or speed of the operator at which the obstacle is reached.

2.3.3 Bottleneck:

A bottleneck is a phenomenon where, with a single or restricted type of resources or resources the overall output or capacity of the entire system is constrained.

2.3.4 Bottleneck in the Production Line:

In the production line, the bottom processing element is a bottleneck. This is the bottleneck region of which output and delivery are capable.

2.3.5 Aries of Bottleneck:

In the production line there's so many explanations why a bottleneck occurs and is below mentioned

A. Until input in rows, bottleneck:

- Building incorrect.
- Fake question of production.
- Wait if the problem arises.
- Fault with the serial number.
- Model issue.

B. Line bottleneck:

- Failure to produce.
- Non-equilibrium factor distribution.
- Absences of staff.
- Riots / out of control in the machine.

2.3.6 Way of Reduce Bottleneck:

- Finding the best candidates to work correctly.
- Hold the serial code.
- Don't forward refusing clothes.
- Sewing blast elimination.
- By strengthening the process.
- Supply after review should be forwarded.

2.4 Pitch Time:

Pitch-time is a ratio of a large SMV of apparel and a kind of mode-specific process in market engineering.

Period of pitch = SMV clothing

Operations No.

Pitch time is often used to position the line and to measure the street production intention. Score: Score:

In time, an evaluation is critical to the definition of the score (called in the US the grading). A sanctioned time checker separates an amateur from his ability to accurately price.

The average is the economic engineer's gadget used to examine the operator's real total production average and his high-level concept of the normal overall performance.

2.5 Work Study:

In the garment and clothing business, the economic engineering sector conducts job sports. Without a doubt, photographs are employed to quantify artwork. The clothing industry's work falls within this sector's jurisdiction. The most effective tool for manufacturing tracking and productivity improvement is the job. In the garment and apparel sector, a fresh concept is a long way off. . In the following way, we can describe job views.

2.5.1 Purpose of Work Study:

The targets or priorities of the work study are generally:
1. Plan out the simplest strategy to complete the task.
2. Determine the amount of time a role should take at a specific degree of success.
3. Increase productivity and efficiency
4. It's a lot easier to work with.
5. Assign everyone an equal number of tasks.

2.5.2 Importance of Work Study:

1. A job study is a method of increasing a company's productivity by eliminating duplication and unnecessary tasks.

2. It is an approach for classifying non-value add-ons by examining all the elements that affect job performance.

2.5.3 Role of Work Study:

The following are six potential lines of action on competitiveness issues:
1. Strengthen fundamental science and manufacturing procedures.
2. Improving existing procedures as well as the availability of plant and machinery.
3. Simplify the product range by decreasing and standardizing it.
4. Improve career preparation and workforce utilization.
5. Improve the plant's present operational practices.
6. Boost your productivity

2.5.4 Objectives of Work:

- Increased efficiency.
- Item consistency has improved.
- Pick the quickest way to complete a mission.
- Improve the operation manner.
- Technicians and employees were less tired.
- A positive labor review.

2.6 Method Study:

A computer for systemic documenting and consideration of talents, as well as proposed creative strategies to construct and apply less difficult but equally effective procedures, are among the research methods. The decrease of fees is a regular practice. Take a look at it because it's crucial for better performance in the garment and textile industry's technologies. It is one of the most important factors in the development of any company. It is one of the most important factors in increasing production. The result of the industry completes the technological skills shown in the industrial and textile industries.

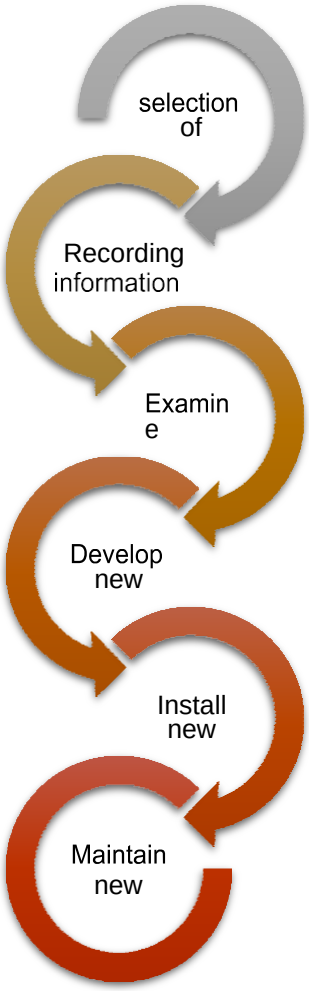
2.6.1 The Major aims of Method Study:

- Farm and construction architecture have been improved.
- Less fatigue or labor due to the elimination of unnecessary labor movements.
- Improved working conditions and employee morale.
- More materials, machinery, workers, and currency are used.

- Excellent standard.
- Machines for handling objects that are quick and dependable.
- Specify instructions and standardize, streamline, and automate them.
- Proper section preparation.

• Job processes have been simplified.
• Increased pay.
• Improve the architecture of the farm and the office.
• Best-in-class safety and health procedures.
• Improve the workflow.
• Product storage that is efficient.
• The process and the quality of the procedure.
• Make the most efficient use of capital.
• Maximum effectiveness.
• Improve management.

2.6.2 • Pollution is no longer an issue.Steps of Method Study:



2.7 Time Study:

Time observation is a small-scale methodology for determining the time of a large unique challenge or for detailing and reviewing a process that is carried out in target scenarios so that an operator may receive the time to keep it at a specified success point.

2.7.1 Steps of Making Time Study:

1. Standard process investigation. Investigate.
2. Document current organizational and environmental needs for the research, which may influence how the task is done and hence the amount of time it takes to complete.
3. Take a comprehensive inventory of the work in progress and divide the project or operation into discrete time components.
4. Estimation of sample size

2.7.2 Notes of Time Study:

• Be friendly and cordial, but don't talk to the operator too much.
• Don't put yourself in an awkward position, such as on the operator's hand or behind his back.
• There isn't a single occasion when research takes a break.
• At the end of the time period, assess the effects of the period study.

2.7.3 Operator Performance:

In general, three efficiency factors can be used to measure operator performance.

1. Efficiency of a single cycle.
2. Efficiency that is up to par.
3. Efficiency on a global scale.

2.7.4 Off-standard Time:

The amount of time an operator spends on the job while it is not productive. variations that aren't standard

• The unit's dismantling.
• Now is the time to wait.
• Consistency issues.
• Do not consume any food.
• Jobs that are suitable for families.
• Educating & Training

2.8 Capacity Study:

For kilometers, the supplier is only as big as its power. With the use of a technique inspection, the operator can undertake a general output assessment. The main goal of the functionality analysis is to establish quotas, encourage, and calculate the capacity of the output segment.

both the operator and the The management will calculate the operator's ability to determine the leading reasons for his stage.

2.8.1 Calculation Method of Sewing line Capacity in Apparel Industry:

To measure the sewing lines of a textile factory's capability, an industrial engineer needed the following information.

- No. in the sewing machine line.
- The number of workers who are missing from the rows.
- The factory's regular working hours.
- The efficiency of the factory's production line.
- SAM (Standard Allowable Minutes) for the manufacturing component.

2.9 Allowance:

Making a number one positive allowance sooner than the intended period for interest will be attained is critical.

The efficiency paintings of the operator were viewed as first-rate because the paintings have an eye on the engineer, and the period of rest, which may be required to employ the operating system to encourage the operator to exceed its force, has not been taken into account.the time that it intends to allow hobby to fulfill personal needs.

Chapter-3: Experimental Details

3.0 EXPERIMENTAL DETAILS:

We collected this operation breakdown & format sheet from Alim Knit BD. Ltd. The accumulated date fourth October 2020. We finished a record by way of following steps like format have alook at, capacity, SMV, production target, etc.

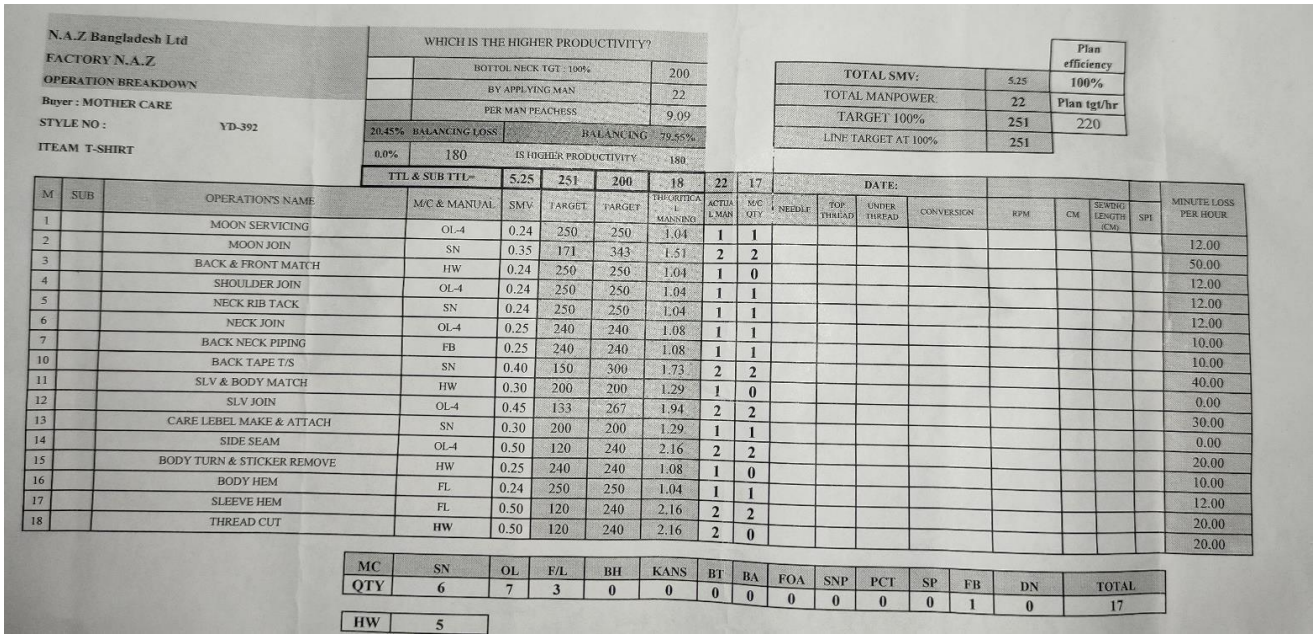
3.1 Operation Breakdown of Basic T shirt:

N.A.Z BANGLADESH Ltd.

Buyer: Carrefour

Ref No.: 350-1040A

Item: T- shirt



N.A.Z Bangladesh Ltd
FACTORY N.A.Z
OPERATION BREAKDOWN
Buyer : MOTHER CARE
STYLE NO : YD-392
ITEAM T-SHIRT

WHICH IS THE HIGHER PRODUCTIVITY?

	BOTTOL NECK TGT : 100%	200
	BY APPLYING MAN	22
	PER MAN PEACHESS	9.09
20.45%	BALANCING LOSS	BALANCING 79.55%
0.0%	180	IS HIGHER PRODUCTIVITY 180

		Plan efficiency
TOTAL SMV:	5.25	100%
TOTAL MANPOWER	22	Plan tgt/hr
TARGET 100%	251	220
LINE TARGET AT 100%	251	

DATE:

M	SUB	OPERATION'S NAME	M/C & MANUAL	SMV	TARGET	TARGET	THEORITICAL MANNING	ACTUAL MAN	M/C QTY	NEEDLE	TOP THREAD	UNDER THREAD	CONVERSION	RPM	CM	SEWING LENGTH (CM)	SPI	MINUTE LOSS PER HOUR
		TTL & SUB TTL=		5.25	251	200	18	22	17									
1		MOON SERVICING	OL-4	0.24	250	250	1.04	1	1									12.00
2		MOON JOIN	SN	0.35	171	343	1.51	2	2									50.00
3		BACK & FRONT MATCH	HW	0.24	250	250	1.04	1	0									12.00
4		SHOULDER JOIN	OL-4	0.24	250	250	1.04	1	1									12.00
5		NECK RIB TACK	SN	0.24	250	250	1.04	1	1									12.00
6		NECK JOIN	OL-4	0.25	240	240	1.08	1	1									10.00
7		BACK NECK PIPING	FB	0.25	240	240	1.08	1	1									10.00
10		BACK TAPE T/S	SN	0.40	150	300	1.73	2	2									40.00
11		SLV & BODY MATCH	HW	0.30	200	200	1.29	1	0									0.00
12		SLV JOIN	OL-4	0.45	133	267	1.94	2	2									30.00
13		CARE LEBEL MAKE & ATTACH	SN	0.30	200	200	1.29	1	1									0.00
14		SIDE SEAM	OL-4	0.50	120	240	2.16	2	2									20.00
15		BODY TURN & STICKER REMOVE	HW	0.25	240	240	1.08	1	0									10.00
16		BODY HEM	FL	0.24	250	250	1.04	1	1									12.00
17		SLEEVE HEM	FL	0.50	120	240	2.16	2	2									20.00
18		THREAD CUT	HW	0.50	120	240	2.16	2	0									20.00

MC	SN	OL	F/L	BH	KANS	BT	BA	FOA	SNP	PCT	SP	FB	DN	TOTAL
QTY	6	7	3	0	0	0	0	0	0	0	0	1	0	17

HW	5

N.A.Z Bangladesh Ltd	WHICH IS THE HIGHER PRODUCTIVITY?						Plan efficiency
FACTORY N.A.Z	BOTTOL NECK TGT:100%		200		TOTAL SMV:	5.25	100%
OPERATION BREAKDOWN	BY APPLYING MAN		22		TOTAL MANPOWER	22	Plan tgt/hr
Buyer: MOTHER CARE	PER MAN PEACHESS		9.09		TARGET 100%	251	220
STYLE NO: YD-392	20.45% BALANCING LOSS		BALANCING 79.55%		LINE TARGET AT 100%	251	
ITEM: T-SHIRT	0.0%	180	IS HIGHER PRODUCTIVITY	180			

3.1.1 Operation Breakdown of T-Shirt:

		TTL & SUB TTL=	5.25	251	200	18	22	17	MINUTE LOSS PER HOUR
M	OPERATION NAME	M/C & MANUAL	SMV	TARGET	TARGET	THEORITIVAL MANNING	ACTUAL MAN	M/C QTY	
1.	MOON SERVICING	OL-4	0.24	250	250	1.04	1	1	12.00
2.	MOON JOIN	SN	0.35	171	343	1.51	2	2	50.00
3.	BACK &FRONT MATCH	HW	0.24	250	250	1.04	1	0	12.00
4.	SHOULDER JOIN	OL-4	0.24	250	250	1.04	1	1	12.00
5.	NECK RIB TACK	SN	0.24	250	250	1.04	1	1	12.00
6.	NECK JOIN	OL-4	0.25	240	240	1.08	1	1	10.00
7.	BACK NECK PIPING	FB	0.25	240	240	1.08	1	1	10.00
8.	BACK TAPE T/S	SN	0.40	150	300	1.73	2	2	40.00
9.	SLV & BODY MATCH	HW	0.30	200	200	1.29	1	0	0.00
10.	SLV JOIN	OL-4	0.45	133	267	1.94	2	2	30.00
11.	CARE LABEL MAKE & ATTACH	SN	0.30	200	200	1.29	1	1	0.00
12.	SIDE SEAM	OL-4	0.50	120	240	2.16	2	2	20.00
13.	BODY TURN & STICKER REMOVE	HW	.25	240	240	1.08	1	0	10.00
14.	BODY HEM	FL	0.24	250	250	1.04	1	1	12.00
15.	SLEEVE HEM	FL	0.50	120	240	2.16	2	2	20.00
16.	THREAD CUT	HW	0.50	120	240	2.16	2	0	20.00

MC	SN	OL	F/L	BH	KANS	BT	BA	FOA	SNP	PCT	SP	FB	DN	TOTAL
QTY	6	7	3	0	0	0	0	0	0	0	0	1	0	17
HW	5													

3.1.2 Requirement of operators:

Requirements Summary		
Opt.	A	0
Opt.	B	0
Opt.	C	0
Scissor		0
Cutter		0
Loading P.		0
TTL Opt.		21
Helper		5
Iron		2
Checker		0
TTL Man		28

Table: 3. 1 Requirement of operators

3.1.3 Requirement of machine:

Machine Summary	
M/C Type	**Qty**
Plain Machine	7
Overlock Machine	8
C - F/L Machine	5
F - F/L Machine	1
Feed of the Arm	0
Picoting Machine	0
Kansai Machine	0
Button Hole	0

Button Attach	0
Bar tack Machine	0
Snap Button	0

Table: 3. 2 Requirement of machine

3.1.4 Calculation:

Here,

Allowance is =15%

Total no. of Operator = 28

SMV calculation

SMV= Basic time+ Allowance of basic time

Basic Time = (Observe time x Observe rating %) /Standard rating

Observe time = Cycle time /No. of cycle

SMV Calculation for Side Seam for short sleeve T shirt

Observed Time=Cycle Time/No of Cycle

= (54+55+55+56+54)/5

=274/5

=54.8

Basic Time== (Observe time x Observe rating %) /Standard rating%

= (54.8x90%)/100%

=49.32

=49.32 +15 %(Allowance)/60

=0.94

Other operation SMV can be calculated same way

Basic Pitch time calculation

Basic Pitch time=Total Garments SMV/ NO of Operation

Total Garments SMV=5.79

NO of Operation=15

Basic Pitch time=0.386 minute

Capacity Calculation

Capacity = 3300 /Operation time

=3300/54.8

=60

Efficiency Calculation

Efficiency = [(Production output x SMV) / (60 x Manpower x working hour)] x100

= [(79 x 5.79)/ (60 x 28 x 1)] x 100

= 84 %

- Working Hour = 10
- Plan Downtime = 45
- SMV = 5.79
- Flow = 5
- Target Efficiency = 84%

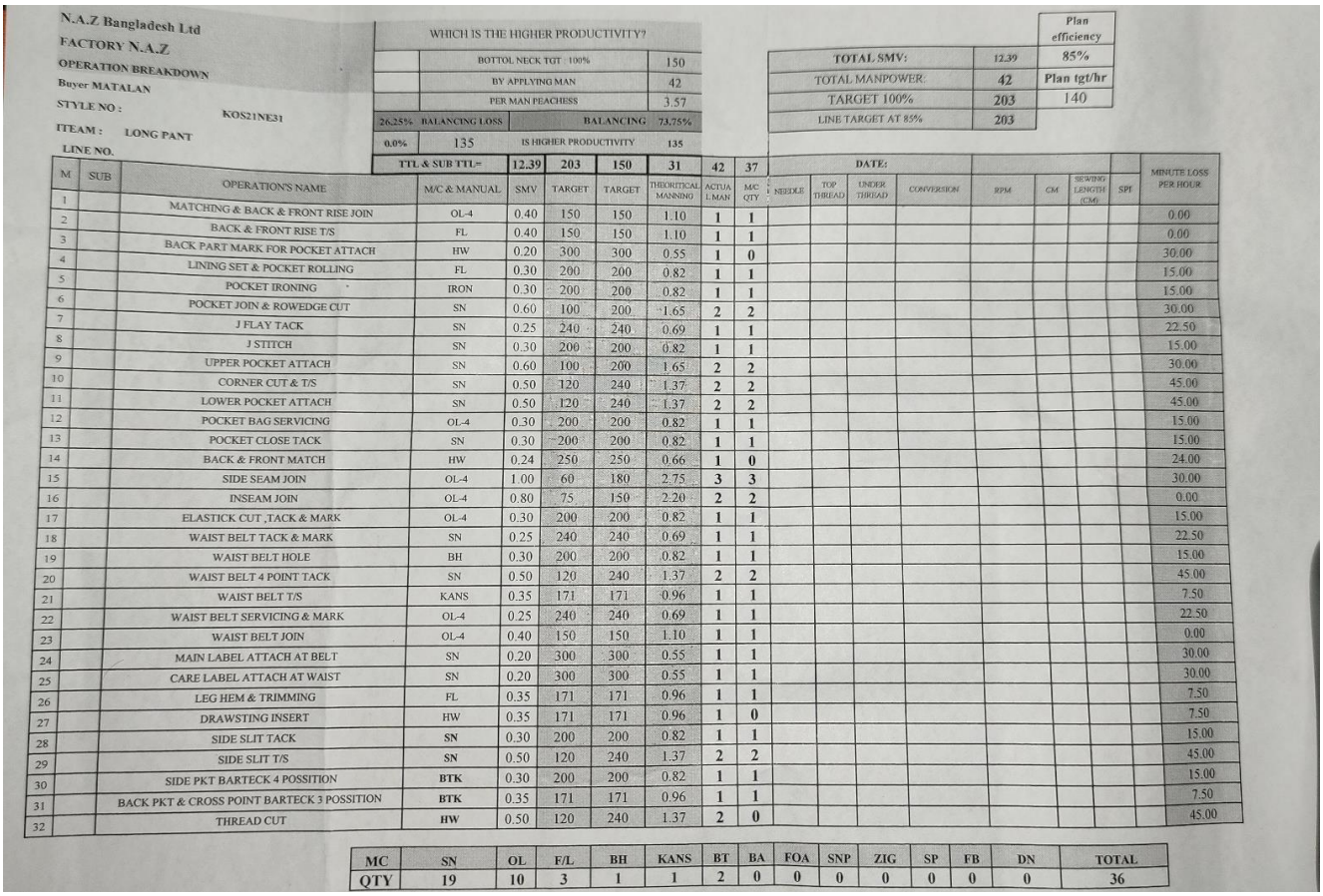
3.2 Operation Breakdown of Long Pant:

Buyer: Carrefour

Ref no.: 350-1032

Item: Long Pant.

N .A.Z BANGLADESH Ltd.



N.A.Z Bangladesh Ltd
FACTORY N.A.Z
OPERATION BREAKDOWN
Buyer MATALAN
STYLE NO : KOS21NE31
ITEAM : LONG PANT
LINE NO.

WHICH IS THE HIGHER PRODUCTIVITY?		
	BOTTOL NECK TGT - 100%	150
	BY APPLYING MAN	42
	PER MAN PEACHESS	3.57
26.25%	BALANCING LOSS	BALANCING 73.75%
0.0%	135	IS HIGHER PRODUCTIVITY 135

		Plan efficiency
TOTAL SMV:	12.39	85%
TOTAL MANPOWER:	42	Plan tgt/hr
TARGET 100%	203	140
LINE TARGET AT 85%	203	

M	SUB	OPERATION'S NAME	M/C & MANUAL	SMV	TARGET	TARGET	THEORITICAL MANNING	ACTUAL MAN	M/C QTY	DATE: NEEDLE	TOP THREAD	UNDER THREAD	CONVERSION	RPM	CM	SEWING LENGTH (CM)	SPI	MINUTE LOSS PER HOUR
		TTL & SUB TTL=		12.39	203	150	31	42	37									
1		MATCHING & BACK & FRONT RISE JOIN	OL-4	0.40	150	150	1.10	1	1									0.00
2		BACK & FRONT RISE T/S	FL	0.40	150	150	1.10	1	1									0.00
3		BACK PART MARK FOR POCKET ATTACH	HW	0.20	300	300	0.55	1	0									30.00
4		LINING SET & POCKET ROLLING	FL	0.30	200	200	0.82	1	1									15.00
5		POCKET IRONING	IRON	0.30	200	200	0.82	1	1									15.00
6		POCKET JOIN & ROWEDGE CUT	SN	0.60	100	200	1.65	2	2									30.00
7		J FLAY TACK	SN	0.25	240	240	0.69	1	1									22.50
8		J STITCH	SN	0.30	200	200	0.82	1	1									15.00
9		UPPER POCKET ATTACH	SN	0.60	100	200	1.65	2	2									30.00
10		CORNER CUT & T/S	SN	0.50	120	240	1.37	2	2									45.00
11		LOWER POCKET ATTACH	SN	0.50	120	240	1.37	2	2									45.00
12		POCKET BAG SERVICING	OL-4	0.30	200	200	0.82	1	1									15.00
13		POCKET CLOSE TACK	SN	0.30	200	200	0.82	1	1									15.00
14		BACK & FRONT MATCH	HW	0.24	250	250	0.66	1	0									24.00
15		SIDE SEAM JOIN	OL-4	1.00	60	180	2.75	3	3									30.00
16		INSEAM JOIN	OL-4	0.80	75	150	2.20	2	2									0.00
17		ELASTICK CUT ,TACK & MARK	OL-4	0.30	200	200	0.82	1	1									15.00
18		WAIST BELT TACK & MARK	SN	0.25	240	240	0.69	1	1									22.50
19		WAIST BELT HOLE	BH	0.30	200	200	0.82	1	1									15.00
20		WAIST BELT 4 POINT TACK	SN	0.50	120	240	1.37	2	2									45.00
21		WAIST BELT T/S	KANS	0.35	171	171	0.96	1	1									7.50
22		WAIST BELT SERVICING & MARK	OL-4	0.25	240	240	0.69	1	1									22.50
23		WAIST BELT JOIN	OL-4	0.40	150	150	1.10	1	1									0.00
24		MAIN LABEL ATTACH AT BELT	SN	0.20	300	300	0.55	1	1									30.00
25		CARE LABEL ATTACH AT WAIST	SN	0.20	300	300	0.55	1	1									30.00
26		LEG HEM & TRIMMING	FL	0.35	171	171	0.96	1	1									7.50
27		DRAWSTING INSERT	HW	0.35	171	171	0.96	1	0									7.50
28		SIDE SLIT TACK	SN	0.30	200	200	0.82	1	1									15.00
29		SIDE SLIT T/S	SN	0.50	120	240	1.37	2	2									45.00
30		SIDE PKT BARTECK 4 POSSITION	BTK	0.30	200	200	0.82	1	1									15.00
31		BACK PKT & CROSS POINT BARTECK 3 POSSITION	BTK	0.35	171	171	0.96	1	1									7.50
32		THREAD CUT	HW	0.50	120	240	1.37	2	0									45.00

MC	SN	OL	F/L	BH	KANS	BT	BA	FOA	SNP	ZIG	SP	FB	DN	TOTAL
QTY	19	10	3	1	1	2	0	0	0	0	0	0	0	36

N.A.Z Bangladesh Ltd	WHICH IS THE HIGHER PRODUCTIVITY?							Plan efficiency
FACTORY N.A.Z	BOTTOL NECK TGT:100%		150		TOTAL SMV:	12.39	85%	
OPERATION BREAKDOWN	BY APPLYING MAN		42		TOTAL MANPOWER	42	Plan tgt/hr	
Buyer: MATALAN	PER MAN PEACHESS		3.57		TARGET 100%	203	140	
STYLE NO: KOS21NE31	26.25% BALANCING LOSS		BALANCING 73.75%		LINE TARGET AT 100%	203		
ITEM: LONG PANT	0.0 %	13 5	IS HIGHER PRODUCTIVITY	135				

3.2.1 Operation Breakdown of Long Pant:

		TTL & SUB TTL=	12.39	203	150	31	42	37	MINUTE LOSS PER HOUR
M	OPERATION NAME	M/C & MANUAL	SMV	TARGET	TARGET	THEORITIVAL MANNING	ACTUAL MAN	M/C QTY	
1.	MATCHING &BACK &FRONT RISE JOIN	OL-4	0.40	150	150	1.10	1	1	0.00
2.	BACK & FRONT RISE T/S	FL	0.40	150	150	1.10	1	1	0.00
3.	BACK PART MARK FOR POCKET ATTACH	HW	0.20	300	300	0.55	1	0	30.00
4.	LINING SET & POCKET ROLLING	FL	0.30	200	200	0.82	1	1	15.00
5.	POCKET IRONING	IRON	0.30	200	200	0.82	1	1	15.00
6.	POCKEET JOIN & ROWEDGE CUT	SN	0.60	100	200	1.65	2	2	30.00
7.	J FLAY TACK	SN	0.25	240	240	0.69	1	1	22.50
8.	J STITCH	SN	0.30	200	200	0.82	1	1	15.00
9.	UPPER POCKET ATTACH	SN	0.60	100	200	1.65	2	2	30.00

10	COTNER CUT & T/S	SN	0.50	120	240	1.37	2	2	45.00
11	LOWER POCKET ATTACH	SN	0.50	120	240	1.37	2	2	45.00
12	POCKET BAG SERVICING	OL-4	0.30	200	200	0.82	1	1	15.00
13	POCKET CLOSE TACK	SN	0.30	200	200	0.82	1	1	15.00
14	BACK & FRONT MATCH	HW	0.24	250	250	0.66	1	0	24.00
15	SIDE SEAM JOIN	OL-4	1.00	60	180	2.75	3	3	30.00
16	INSEAM JOIN	OL-4	0.80	75	150	2.20	2	2	0.00
17	ELASTICK CUT, TACK & MARK	OL-4	0.30	200	200	0.82	1	1	15.00
18	WAIST BELT TACK & MARK	SN	0.25	240	240	0.69	1	1	22.50
19	WAIST BELT HOLE	BH	0.30	200	200	0.82	1	1	15.00
20	WAIST BELT 4 POINT TACK	SN	0.50	120	240	1.37	2	2	45.00
21	WAIST BELT T/S	KANS	0.35	171	171	0.96	1	1	7.50
22	WAIST BELT SERVICING & MARK	OL-4	0.25	240	240	0.69	1	1	22.20
23	WAIST BELT JOIN	OL-4	0.40	150	150	1.10	1	1	0.00
24	MAINT LABEL ATTACK AT BELT	SN	0.20	300	300	0.55	1	1	30.00
25	CARE LABEL ATTACH AT WAIST	SN	0.20	300	300	0.55	1	1	30.00
26	LEG HEM & TRIMMING	FL	0.35	171	171	0.96	1	1	7.50
27	DRAWSTING INSERT	HW	0.35	171	171	0.96	1	0	7.50
28	SIDE SLIT TACK	SN	0.30	200	200	0.82	1	1	15.00

29	SIDE SLIT T/S	SN	0.50	120	240	1.37	2	2	45.00
30	SIDE PKT BARTECK 4 POSSITION	BTK	0.30	200	200	0.82	1	1	15.00
31	BACK PKT & CROSS POINT BARTECK 3 POSSITION	BTK	0.35	171	171	0.96	1	1	7.50
32	THREAD CUT	HW	0.50	120	240	1.37	2	0	45.00

MC	SN	OL	F/L	BH	KANS	BT	BA	FOA	SNP	ZIG	SP	FB	DN	TOTAL
QTY	19	10	3	1	1	2	0	0	0	0	0	0	0	36
HW	5													

3.2.2 Requirement of operators:

Requirements Summary		
Opt.	A	21
Opt.	B	9
Opt.	C	1
Scissor		0
Cutter		0
Loading P.		0
TTL Opt.		31
Helper		9
Iron		0
Checker		0
TTL Man		**40**

Table: 3. 4 Requirement of operators

3.2.3 Requirement of Machines:

Machine Summary	
M/C Type	**Qty**
Plain Machine	11
Overlock Machine	11
C - F/L Machine	5
F - F/L Machine	1
Feed of the Arm	0
Picoting Machine	0
Kansai Machine	1
Button Hole	2

Button Attach	0

Table: 3. 5 Requirement of operators

3.2.4 Calculation:

Here,

Allowance is =15%

Total no of Operator = 40

SMV calculation

SMV= Basic time+ Allowance of basic time

Basic Time = (Observe time x Observe rating %) /Standard rating

Observe time = Cycle time /No. of cycle

SMV Calculation for Back Rise

Observed Time=Cycle Time/No of Cycle

= (15+16+15+14+16)/5

=76/5

=15.2

Basic Time== (Observe time x Observe rating %) /Standard rating%

= (15.2x90%)/100%

=13.68

=13.68 +15 %(Allowance)/60

=0.23

Other operation SMV can be calculated same way

Basic Pitch time calculation

Basic Pitch time=Total Garments SMV/ NO of Operation

Total Garments SMV=9.08

NO of Operation=28

Basic Pitch time=0.324 minute

Capacity Calculation

Capacity = 3300 /Operation time

=3300/15.2

=217.105

Efficiency Calculation

Efficiency = [(Production output x SMV) /(60 x Manpower x working hour)] x100

= [(185 x 9.08)/ (60 x 40 x 1)] x 100%

= 70%

- Working Hour = 10
- Plan Downtime = 45
- SMV = 9.08
- Flow = 5
- Customer Demand = 168
- Target Efficiency = 70%

3.3 Operation Breakdown of Short pant:

Buyer: Carrefour.

Ref. no: 350-1040+1082A

Item: Cuff Pant.

N.A.Z BANGLADESG Ltd.

N.A.Z Bangladesh Ltd
FACTORY N.A.Z
OPERATION BREAKDOWN
Buyer : MOTHERCARE
STYLE NO : ZB 175
ITEAM : CUFF PANT
LINE NO.

WHICH IS THE HIGHER PRODUCTIVITY?

	BOTTOL NECK TGT : 100%	150
	BY APPLYING MAN	30
	PER MAN PEACHESS	5.00
-16.67%	BALANCING LOSS	BALANCING 116.67%
0	135	IS HIGHER PRODUCTIVITY 135

		Plan efficiency(%)
TOTAL SMV:	8.75	75%
TOTAL MANPOWER:	30	Plan /gr/hr
TARGET 100%	206	160
LINE TARGET AT 75%	154	

TTL & SUB TTL=	8.75	206	150	21.88	30	24

M	SUB	OPERATION'S NAME	M/C & MANUAL	SMV	TARGET	TARGET	THEORITICAL MANNING	ACTUAL MAN	M/C QTY	DATE: NEEDLE	TOP THREAD	UNDER THREAD	CONVERSION	RPM	CM	SEWING LENGTH (CM)	SPI	MINUTE LOSS PER HOUR
1		BACK & FRONT RISE JOIN	OL-4	0.40	150	150	1.25	1	1									-36.00
2		UPPER POCKET ATTACH & CORNER CUT	SN	0.60	100	200	1.88	2	2									-24.00
3		CORNER CUT & POCKET 1/4 T/S	SN	0.60	100	200	1.88	2	2									-24.00
4		LOWER POCKET ATTACH	SN	0.45	133	267	1.41	2	2									12.00
5		POCKET BAG SERVICING	OL-4	0.40	150	150	1.25	1	1									-36.00
6		BACK & FRONT MATCH	HW	0.30	200	200	0.94	1	0									-12.00
7		SIDE & INSEAM JOIN	OL-4	0.50	120	240	1.57	2	2									0.00
8		CUFF TACK	SN	0.45	133	267	1.41	2	2									12.00
9		CUFF JOIN	OL-4	0.45	133	267	1.41	2	2									12.00
10		ELASTICK TACK & MARK	SN	0.25	240	240	0.78	1	1									0.00
11		WAIST BELT TACK	SN	0.30	200	200	0.94	1	1									-12.00
12		WAIST BELT MARK	HW	0.40	150	150	1.25	1	0									-36.00
13		WAIST BELT HOLE	BH	0.35	171	171	1.10	1	1									-24.00
14		WAIST BELT 4 POINT TACK	SN	0.45	133	267	1.41	2	2									12.00
15		WAIST BELT SERVICING & MARK	OL-4	0.30	200	200	0.94	1	1									-12.00
16		WAIST BELT JOIN	OL-4	0.40	150	150	1.25	1	1									-36.00
17		DRASTING MEASURE & CUT	HW	0.35	171	171	1.10	1	0									-24.00
18		DRAWSTING INSERT	HW	0.40	150	150	1.25	1	0									-36.00
19		DRAWSTING EDGE & MIDLE TACK	SN	0.50	120	240	1.57	2	2									0.00
20		BARTACK	BTK	0.40	150	150	1.25	1	1									-36.00
21		THREAD CUT	HW	0.50	120	240	1.57	2	0									0.00

MC	SN	OL	F/L	BH	KANS	BT	BA	FOA	SNP	PCT	SP	FB	DN	TOTAL
QTY	14	8	0	1	0	1	0	0	0	0	0	0	0	24

HW	6

		TTL & SUB TTL =	8.75	206	150	21.88	30	24	MINUTE LOSS PER HOUR		
M	OPERATION NAME	M/C & MANUAL	SMV	TARGET	TARGET	THEORITIVA L MANNING	ACTUA L MAN	M/C QTY		M	OPERATION NAME
1.	BACK & FRONT RISE JOIN	OL-4	0.40	150	150	1.25	1	1	-36.00	2.	BACK & FRONT RISE JOIN
3.	UPPER POCKET ATTACH & CORNER CUT	SN	0.60	100	200	1.88	2	2	-24.00	4.	UPPER POCKET ATTACH & CORNER CUT
5.	CORNER CUT & POCKET ¼ T/S	SN	0.60	100	200	1.88	2	2	-24.00	6.	CORNER CUT & POCKET ¼ T/S
7.	LOWER POCKET ATTACH	SN	0.45	133	267	1.41	2	2	12.00	8.	LOWER POCKET ATTACH
9.	POCKET BAG SERVICING	OL-4	0.40	150	150	1.25	1	1	-36.00	10.	POCKET BAG SERVICING
11.	BACK & FRONT MATCH	HW	0.30	200	200	0.94	1	0	-12.00	12.	BACK & FRONT MATCH
	SIDE & INSEAM JOIN	OL-4	0.50	120	240	1.57	2	2	0.00	13.	SIDE & INSEAM JOIN
	CUFF TACK	SN	0.45	133	267	1.41	2	2	12.00	14.	CUFF TACK

	CUFF JOIN	OL-4	0.45	133	267	1.41	2	2	12.00	15.	CUFF JOIN
CROTCH POINT TUCK & BODY ARRANGE	Plain Machine		12	0.23	222	B	1	0.23			50/2

ELASTIC CUT & MARK	Helper		10	0.18	278		1	0.18			
ELASTIC TUCK	Plain Machine		10	0.19	266	B	1	0.19			50/2
ELASTIC JOIN WITH BODY	Overlock Machine		22	0.40	126	A	2	0.20			50/2
STICKER REMOVE & BODY REVERSE	Helper		12	0.22	232		1	0.22			
BODY HOLE	Button Hole		12	0.21	238	B	1	0.21			50/2
ELASTIC FOLD TUCK WITH BELT	Plain Machine		23	0.44	116	A	2	0.22			50/2
BELT TOP STITCH	Kansai Machine		14	0.28	182	A	1	0.28			50/2
TRIMMING	Helper		12	0.22	232		1	0.22			
LEG HEM	C - F/L Machine		21	0.40	127	A	2	0.20			50/2
TRIMMING	Helper		10	0.18	278		1	0.18			
LABEL JOIN (PATCH LABEL)	Plain Machine		15	0.29	177	A	1	0.29			50/2
DOSTING MAKE - F/L & CUT	F - F/L Machine		10	0.19	266	B	1	0.19			50/2
DOSTING INSART	Helper		18	0.33	155		1	0.33			
DOSTING MIDDLE TUCK	Plain Machine		15	0.29	177	A	1	0.29			50/2

DOSTING MOUTH TUCK	Plain Machine		18	0.35	148	A	2	0.17			50/2

4 MC	SN	OL	F/L	BH	KANS	BT	BA	FOA	SNP	PCT	SP	FB	DN	TOTAL
QTY	14	8	0	1	0	1	0	0	0	0	0	0	0	24
HW	6													

4.0.1 Requirement of operators:

Requirements Summary		
Opt.	A	19
Opt.	B	7
Opt.	C	1
Scissor		0
Cutter		0
Loading P.		0
TTL Opt.		27
Helper		6
Iron		0
Checker		0
TTL Man		**33**

Table: 3. 7 Requirement of operators

4.0.2 Requirement of operators:

Machine Summary	
M/C Type	**Qty**
Plain Machine	11
Overlock Machine	8
C - F/L Machine	5
F - F/L Machine	1
Feed of the Arm	0
Picoting Machine	0

Kansai Machine	1
Button Hole	1
Button Attach	0
bar tack Machine	0
Snap Button	0

Table: 3. 8 Requirement of machines

4.0.3 Calculation:

Here,

Allowance is =15%

Total no of Operator = 33

SMV calculation

SMV= Basic time+ Allowance of basic time

Basic Time = (Observe time x Observe rating %) /Standard rating

Observe time = Cycle time /No. of cycle

Observed Time=Cycle Time/No of Cycle

Observed Time=Cycle Time/No of Cycle

= (15+16+15+14+16)/5

=76/5

=15.2

Basic Time== (Observe time x Observe rating %) /Standard rating%

= (15.2x90%)/100%

=13.68

=13.68 +15 %(Allowance)/60

=0.23

Other operation SMV can be calculated same way

Basic Pitch time calculation

Basic Pitch time=Total Garments SMV/ NO of Operation

Total Garments SMV=7.81

NO of Operation=26

Basic Pitch time=0.30 minute

Capacity Calculation

Capacity = 3300 /Operation time

=3300/15.2

=217.105

Efficiency Calculation

Efficiency = [(Production output x SMV) /(60 x Manpower x working hour)] x100

= [(185 x 7.81)/ (60 x 26 x 1)] x 100%

= 85%

- Working Hour =10
- Plan Downtime = 45
- SMV = 7.81
- Flow = 5
- Customer Demand = 158
- Target Efficiency = 75%

CHAPTER – 4: RESULT AND DISCUSSION

4.1 Analysis of Capacity Study of Different Operation for T-Shirt

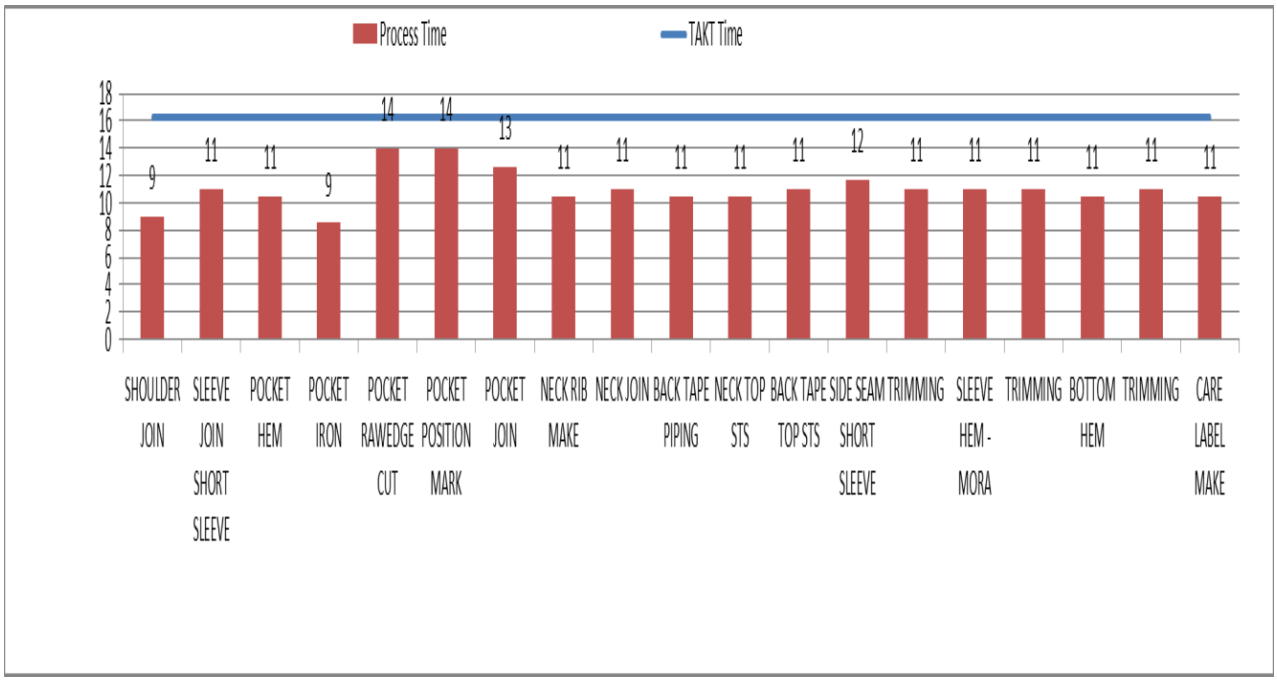


Figure: 4. 1 Analysis of Capacity Study of Different Operation for T-Shirt

4.2 Analysis of Capacity Study of Different Operation for Long Pant

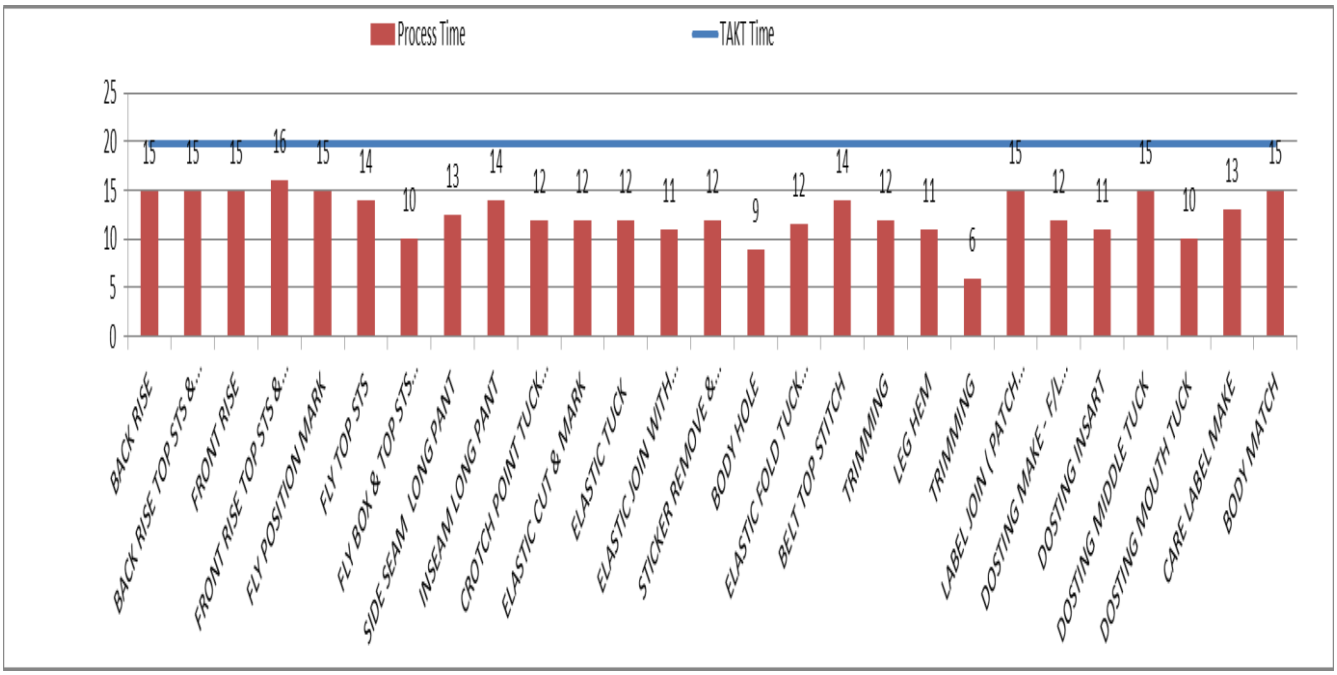


Figure: 4. 2 Analysis of Capacity Study of Different Operation for Long Pant

4.3 Analysis of Capacity Study of Different Operation for Short Pant

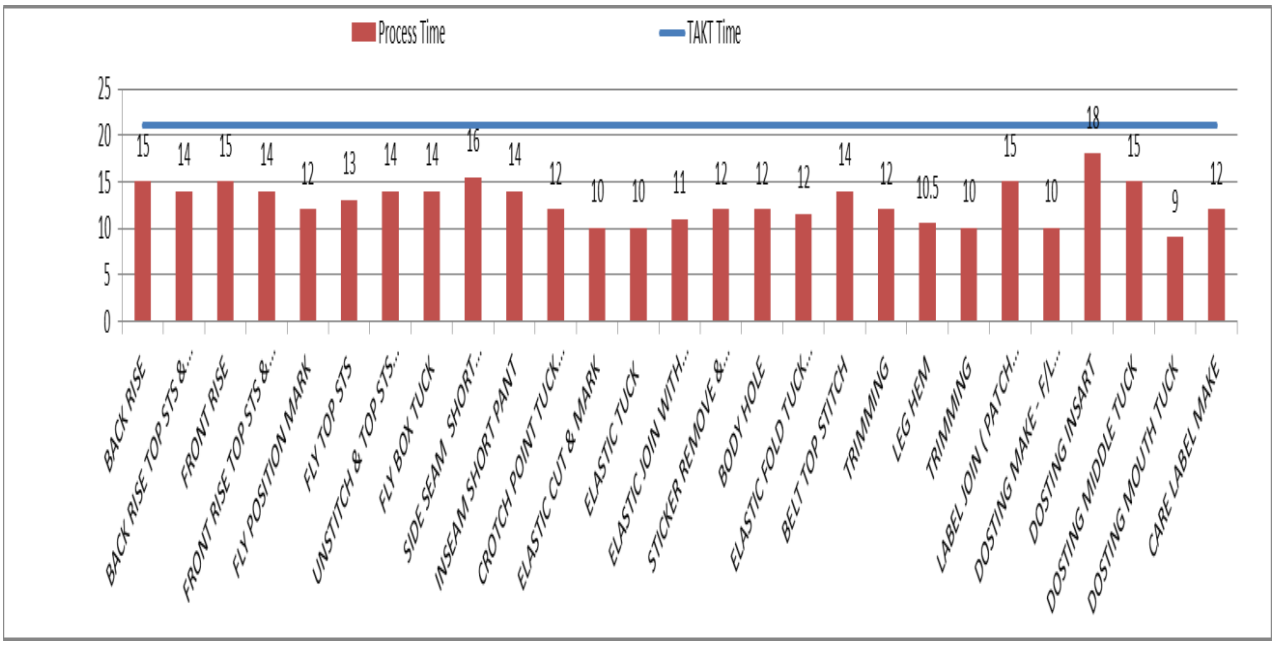


Figure: 4. 3 Analysis of Capacity Study of Different Operation for Short Pant

4.4 Analysis of Total SMV of Different item from Data 3.1, 3.2, 3.3

ITEM	TOTAL SMV
T-SHIRT	5.79
LONG PANT	9.08
SHORT PANT	7.81

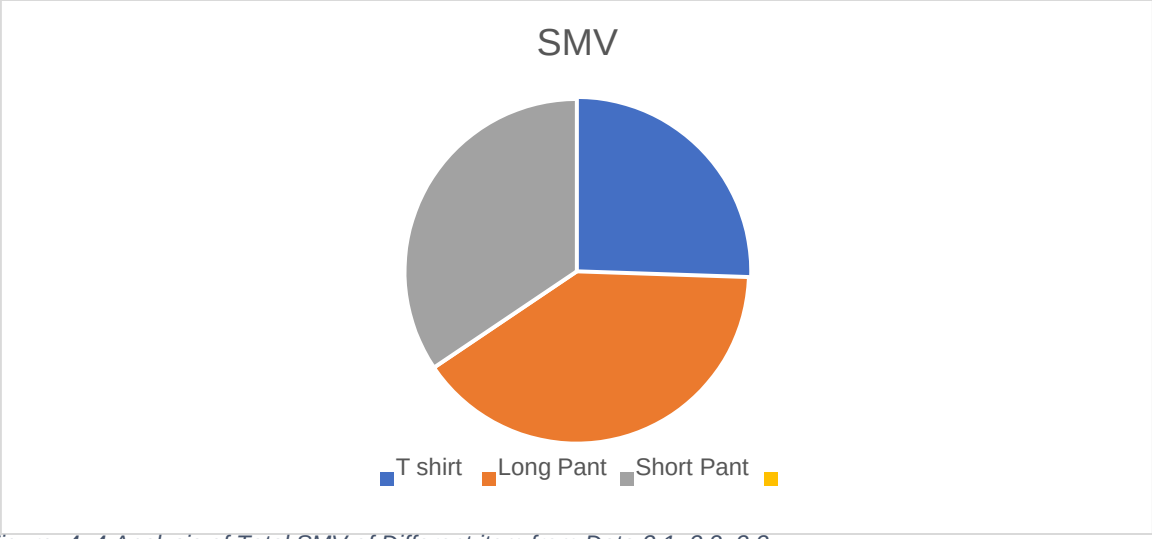


Figure: 4. 4 Analysis of Total SMV of Different item from Data 3.1, 3.2, 3.3

Description:

On this pie chart, we confirmed the only of kind gadgets of usual SMV which we calculated financial ruin-03. Right here we evaluation T-shirt, Short pant, long PANT. This pie chart indicates the overall SMV. The overall SMV of T-shirt is 5.79, Long pant 9.08 and short pant 7.81. Right here we're able to see a higher SMV in the pie chart is long pant is 22.10 and the lowest SMV in the pie chart is TANK pinnacle is T-shirt.

4.5 Analysis Efficiency% of Different item from Data 3.1, 3.2, 3.3

ITEM	TOTAL Efficiency%
T-SHIRT	84%
TANK TOP	70%
LONG PANT	75%

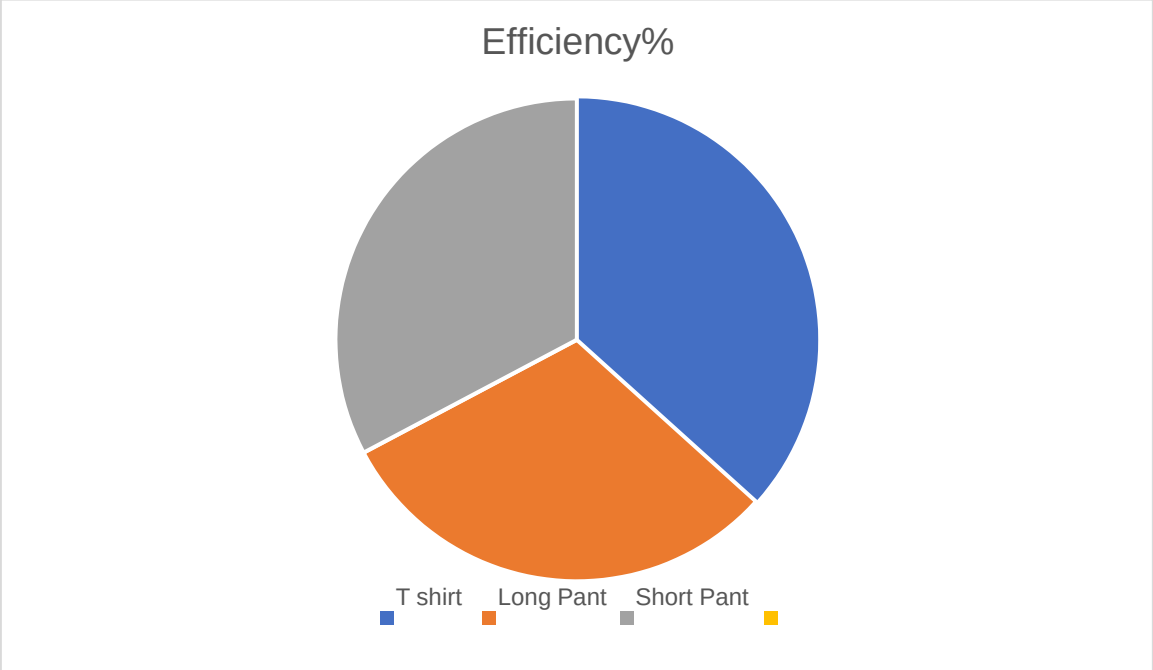


Figure: 4. 5 Analysis of Total SMV of Different item from Data 3.1, 3.2, 3.3.

Description:

On this pie chart, We confirmed the first-class-of-a-kind object common overall performance% which we calculated bankruptcy-03. Proper right here we evaluation T-shirt, long pant and short pant. This pie chart shows the performance%. Overall performance% of the T- shirt is 84%, the long pant 70% and short pant 74%

%. Proper right here we're able to see better general overall performance% within the pie chart is T shirt 84% and the lowest usual performance% inside the pie chart is the extended pant is 70%.

CHAPTER – 5: CONCLUSION

5.1 Conclusion:

The assistance of collecting SMV map and service bulletin hopefully we have concluded our project with the help of N.A.Z Bangladesh Ltd. This project helped us learn about output, SMV time looks at the corresponding components and their corrected process in addition. Anlyzing the products and the result we found; For the Basic T- Shirt we found the SMV- 5.79, Where target efficiency came- 84% and the capacity was- , total man power used is 28. For the long pant the SMV- 9.08, Target Efficiency- 70%, Capacity- 217.015, total man power- 40. Finally for the short pant, the SMV- 7.81, Target Efficiency- 85%, Capacity- 217, total man power- 33. Now we know how a garment can be proceed in the fastest way possible for benefitting company as well to grow the business more. Not just that we learned how to use proper time and what to action for. This project really thought us more valuable things a processes that will help us to become more knowledgeable engineers.

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