Faculty of Engineering

Department of Textile Engineering

Thesis on

Analysis of Defects in Readymade Garments.

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Submitted by:

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M.Sc. in Textile Engineering

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

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DECLARATION

I hereby, declare that this Thesis has been done by me under the supervision of **Mr. Tanvir Ahmed Chowdhury**, Assistant Professor, Department of Textile Engineering, Faculty of Engineering, Daffodil International University. I also hereby declare that neither this Thesis nor any part of this Thesis has been submitted elsewhere for the award of any degree or diploma.

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LETTER OF APPROVAL

This thesis report prepared by Md. Nahid Nadim Ibn Iqbal (ID: 112-32-157) is approved in partial fulfillment of the requirement for the Degree of **Master OF SCIENCE IN TEXTILE ENGINEERING**. The said student has completed his thesis work under my supervision.

During the research period I found them sincere, hardworking and enthusiastic.

Tanvir Ahmed Chowdhury

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I would like to show greetings to all my course teachers as well as batch mates in Daffodil International University, who took part in the discussion while completing the course work.

Finally, I am extremely thankful to Graphics Textiles Ltd. for giving me a fantastic opportunity to use their document.

Abstract

The global economic condition changing rapidly, in an industry, they are more focus on profit margin as well as customer demand for high quality product and improved productivity. This project was done to analysis defect percentage in final inspection and how to overcome this defect moreover how to improve product quality.

The readymade garment industry is not only a leading industry in Bangladesh but also, they lead throughout the world that's why the improvement of garments quality is needed by recruiting defect from garments, it can play a vital role for every industry. The main purpose of this paper is to measure the defects throughout the year furthermore, which defect is repeating so many times. This thesis worked at **Graphics Textiles Ltd** where they faced treble with garments defect in final inspection several times, particularly in Boy's t shirt, Girls t shirt and Kid's T shirt. On the other hand, it is easy to overcome a problem if individual can find the actual problem.

Contents

1 INTRODUCTION

1.1 Study background

In the past few decades, Bangladesh's ready-made garments (RMG) industry has experienced a tremendous growth causing it to be one of the leading exporters of apparel around the world. Currently, RMG represents an amazing 85% of all exports from the country; this goes on to show how much it contributes to the economy. Among other reasons that have helped achieve such remarkable success include fast-paced industrial growth, modernization in production facilities and constant commitment towards improving working conditions for millions employed in this sector.

The strong demand for knitwear has been a significant driver behind the rapid expansion of this sector with it becoming Bangladesh's top export product. This is because knitted fabrics are amazingly comfortable and versatile thus making them popular among international buyers who have found Bangladesh able to cater for their needs. Additionally, there has been an increased demand for denim whereas a result Bangladesh emerged among leading nations globally in such trade. The country's status is further fortified by positive reports about its manufacture of denim jeans and other related products thus positioning itself as a notable garment exporter globally.

Although Bangladeshi garments are knitwear or denims, woven garments constitute a minor share of its export. However, this scenario presents an opportunity for the industry to diversify and diversify, as the country's talent in garment making can be exploited to uplift sales of woven garments soon. The increased global demand for Bangladeshi clothing indicates there is tremendous scope for development of the textile sector both at home and abroad. Bangladesh has solid production capabilities, trained workers, and cheap prices, which places it in good position to grab a larger share of the world's clothing market.

Bangladesh's textile industry is made up of about 4,500 factories and holds a prominent place in the nation's RMG sector. While cotton remains the main raw material, the country cannot produce enough cotton and depends on imports. Furthermore, because Bangladesh does not have spinning mills, yarn is often imported from other countries to meet the demands of major clothing manufacturers. Thus, import dependence on raw materials is both a challenge as well as an opportunity for

expansion since investments made towards setting up weaving and spinning units could help enhance value chain while reducing imports from other sources.

1.2 Problem in present state:

This research has problems stated below-

(a) Every clothing has its own faults and therefore, determining the percentage of defects at final inspection is very difficult.

(b) The clothing type determines the percentage of defects; it is seen that luxury clothing tends to have a higher percentage.

1.3 Objectives and possible outcome:

This study aims to explore the following:

a) Analysis of yearly defects present in a ready-made garment item.

b) Understanding of major and minor issues in RMG sector.

c) Annual percentage calculation for a specific design regarding different kinds of defects; major and minor.

Expected output includes:

a) Identify which defect seems to recur for same clothing items as before.

b) Quick identification made regarding their recurring problems on some types of apparel.

c) Shipment could be safe from Risk during its Final Inspection before delivery.

2 LITERATURE REVIEW

2.1 Introduction:

After China, Bangladesh is the largest readymade garments exporter in all over the globe.

BGMEA data express that, the needs of RMG are growing year after year whereas it is

Table 2.1: Bangladesh's apparel export (2001-2020) [Value in million US$]

Year	Woven	Knit	Total RMG
2010-2011	8432.4	9482.06	17914.46
2011-2012	9603.34	9486.39	19089.73
2012-2013	11039.85	10475.88	21515.73
2013-2014	12442.07	12049.81	24491.88
2014-2015	13064.61	12426.79	25491.4
2015-2016	14738.74	13355.42	28094.16
2016-2017	14392.59	13757.25	28149.84
2017-2018	15426.25	15188.51	30614.76
2018-2019	17244.73	16888.54	34133.27
2019-2020	14041.19	13908	27949.19

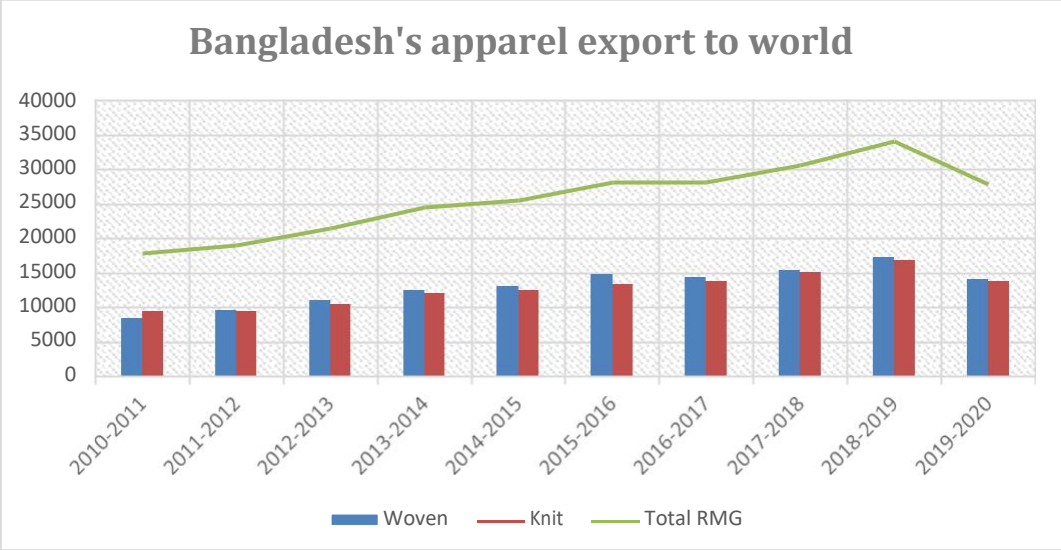


Figure 2.1: Bangladesh's apparel export data in US$.

2.2 Inspection:

To check whether an item or operation meets the specific range of acceptable quality. The goal of inspection is to find out the defects in the earliest phases possible.

In garments industry, it is mainly performed in three stages:

- Inspection of raw materials.
- In-line inspection
- End-line inspection

2.3 Quality control:

It explores the pros or corns of a product. However, in general, quality refers important characteristics of a product by which, it is in demand. According to ISO 9000: 2000 defines quality as “degree to which a set of inherent characteristics fulfill requirements.

Some other ways of definition of quality includes:

1. Combination of quantitative and qualitative perspectives for which each person has his or her own definition.
2. Quality assembles people power and process power.
3. Quality in a product or service is not what the supplier puts in. It is what the customer gets out and is willing to pay for.
4. According to Juran: "Fitness for use." Fitness is defined by the customer.
5. "Uniformity around a target value." It is hard to quantify quality in absolute terms, rather can only be judged in terms of standards or quality benchmarks. Published in Dhaka University Journal of Management.

2.4 AQL:

Acceptable Quality Level (AQL) is the **maximum percent defective (or maximum number of defects per 100 units) that can be considered acceptable**. AQL is measured in defects per 100 units.

In performing sampling inspection, QIMA inspectors exclusively apply the ISO 2859 standard, and the tables provided by it. This document, published by the International Organization for Standardization (ISO), is an international standard with equivalents in all national regulations.

AQL (Acceptable Quality Limit) Sampling is a method widely used to define a production order sample to find whether the entire product order has met the client's specifications. Based on the sampling data, the customer can make an informed decision to accept or reject the lot.

Your inspection report will clearly state whether your production has passed or failed your selected Acceptable Quality Tolerance level.

2.5 What AQL mean:

AQL of 0.4 mean

For most general consumer products, the standard AQL levels are 2.5% for major defects, 4.0% for minor defects, and 0% for **critical defects**. That's why we've underlined '2.5' and '4.0' above. Going by this standard, we can see that your inspector will accept a maximum of 7 major defects, and. 10 minor defects.

What does an AQL of 1.5 mean?

Importers usually set different AQLs for critical, major, and minor defects. Most Asian exporters are familiar with this type of setting. For example: "AQL is 1.5%" means "**I want no more than 1.5% defective items in the whole order quantity, on average over several production runs with that supplier**".

What does an AQL of 2.5 mean?

What Does 2.5 AQL Mean? AQL 2.5 means **the acceptable level of major defective goods is 2.5% of the total order quantity**. If the batch produced contains a defect level that exceeds 2.5% defects, then the quality of the product is not living up to the agreement.

What does AQL level 3 mean?

The leftmost one, General Level I, will give you the smallest sample size, which means your inspector will check fewer products. The rightmost one, **General Level III, will give you the largest sample size**, which means they will inspect more samples to give you better result.

3 METHODOLOGY / EXPERIMENTAL DETAILS:

3.1 Raw Materials:

Collected some inspection report, almost 10 styles to be more exact.

Style wise sample to identify all major as well as minor defect.

Experimental data to ensure every defect, is it major or minor.

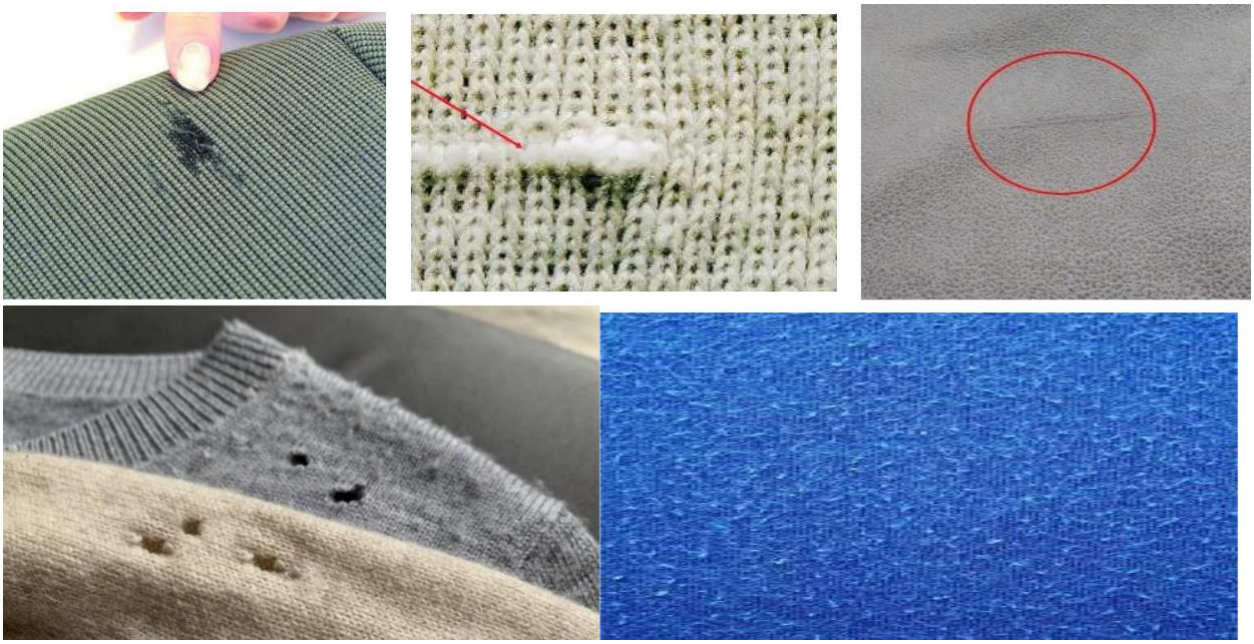
3.2 Defect chart:

SL	Garments Workmanship and Appearance	Critical	Major	Minor
1	Brand name differs from PO/sample	X	–	–
2	Broken / Skip stitch	–	X	–
3	Open seam or hem	–	X	–
4	Wavy seams/stitch	–	–	X
5	Collar Fullness or tightness of fabric (Bubbling)	–	X	–
6	Unintentional pleats form along the seam	–	–	X
7	Missing / wrong accessories	–	X	–
8	Thread discoloration	–	–	X
9	Incorrect interlining weight in relation to the fabric	–	–	X
10	Sharp ends, Bent Buttons / snaps post	X	–	–
11	Button too big for the buttonhole	–	X	–

12	Buttonhole too big for the button	–	X	–
13	Zipper puller self-lock not secure	–	X	–
14	Zipper slider does not glide through the zipper teeth smoothly	–	X	–
15	Zipper stitching margin too small that may cause slider to jam	–	X	–
16	Snapping action too tight to close	–	X	–
17	Snapping action too loose to close adequately	–	X	–
18	Belt loop Missing/Incomplete	–	X	–
19	Color shade variation within a box	–	X	–
20	Missing collar bone	–	X	–
21	Broken hanger resulting to sharp end/edge	X	–	–
22	Poorly attached hanger hook	–	X	–
23	Poly bag / inner box damage / wrinkled	–	–	X
24	Brand name differs from PO/sample	X	–	–
25	Poly bag / inner box too loose or too tight	–	X	

3.3 Name of some major defects:

Fabric damage:



Dirty stain:

Broken stitch:

Oil stain:

Pleat:

Stitch missing:

Needle cut:

Skip stitch:

Raw edge:

Sleeve up down:

3.4 Name of some minor defects:

1.

Foreign yarn:

costly polypropylene fault in the dyed end product

Uncut thread:

Dirty stain:

Loose fabric:

Uneven bottom hem:

Side seam poor shape:

Bottom hem poor shape

Neck rib shedding:

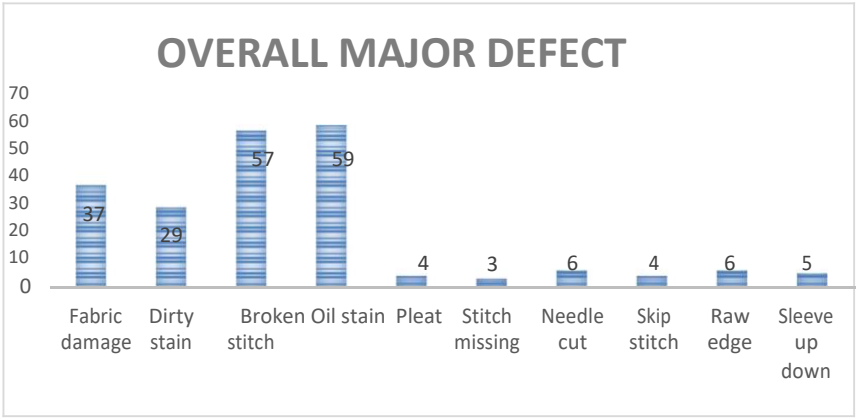
4. DISCUSSION OF RESULT'S

Major defect																														
	Style name																													
Name of defect	Boys T shirt			Dragon T shirt			Oversized T shirt			Menime ladis T shirt			Kid's T			Polo shirt			Kikki dress			Girls bib dress			Chilly T shirt			Exclusive T shirt			Total defect
	Inspection			Inspection			Inspection			Inspection			Inspection			Inspection			Inspection			Inspection			Inspection			Inspection			
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
	Qty. 2500	Qty. 2000	Qty. 2000	Qty. 2500	Qty. 2000	Qty. 2000	Qty. 2500	Qty. 2000	Qty. 2000	Qty. 2500	Qty. 2000	Qty. 2000	Qty. 2500	Qty. 2000	Qty. 2000	Qty. 2500	Qty. 2000	Qty. 2000	Qty. 2500	Qty. 2000	Qty. 2000	Qty. 2500	Qty. 2000	Qty. 2000	Qty. 2500	Qty. 2000	Qty. 2000	Qty. 2500	Qty. 2000	Qty. 2000	
Fabric damage	1	2	1	0	0	0	1	2	3	1	1	2	2	1	2	1	2	1	1	3	2	1	1	2	1	1	2	1	1	2	40
Dirty stain	1	2	1	0	0	0	2	3	1	1	2	1	1	2	1	1	0	1	1	2	1	1	3	1	1	2	1	1	2	1	37
Broken stitch	2	1	2	3	2	1	1	2	2	3	1	1	1	2	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	56
Oil stain	3	1	2	2	3	1	0	2	0	3	1	2	3	2	3	1	2	3	2	2	1	2	4	2	3	2	2	3	2	2	61
Pleat				3	1	2																									6
Stitch missing				1	2	1																									4
Needle cut				3	2	2																									7
Skip stitch							2	3	1																						6
Raw edge										2	1	1										2	1	2							9
Sleeve up down																			2	3	1										6
	8	5	7	9																											

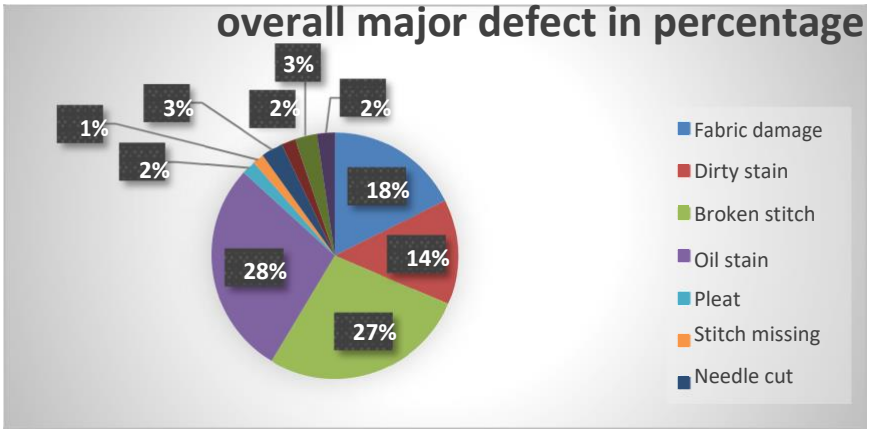
Overview statement of major defect: This table presents data for major defect which found in inspection report regarding ten styles. As inspection held three times in a year, therefore here mention three times inspection for each style. By following this table, we can be able to know which types of defects are repeated many times as well as which is rare defect in an industry.

All types of major defects name here mentioned in vertically on the other hand style names as well as count of defect number here given in horizontally.

Furthermore, here added two graphs in below to analysis this data more clearly.



Four major defects namely pleat, stitch missing, needle cut, skip stitch, raw edge and sleeve up/down can be quickly identified using this graph. The most significant ones are fabric damage (37), dirty stain (29), broken stitch (57) and oil stain (59), which is much higher as compared to rest of the defects.



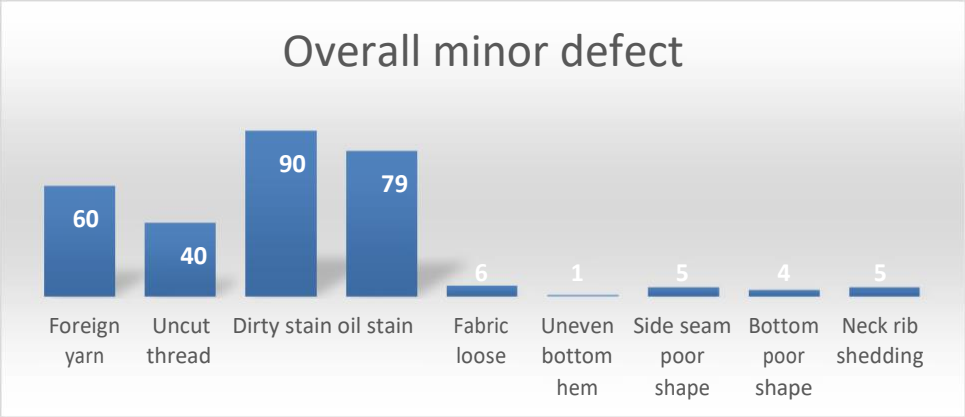
Graph 2 highlights the grievous imperfection rate of every design type within a one-year period. It is easy to determine defect percentage using this graph. The highest percentages of defects for this category include (28%) oil spots, (27%) cord breaks, (14%) unclean spots and (18%) fabric destruction. All other types incur damages below (5%).

Minor defect																															
	Style name																														
Name of defect	Boys T shirt			Dragon T shirt			Oversized T shirt			Menime ladies T shirt			Kid's T			Polo shirt			Kikki dress			Girls bib dress			Chilly T shirt			Exclusive T shirt			Total defect
	Inspection			Inspection			Inspection			Inspection			Inspection			Inspection			Inspection			Inspection			Inspection			Inspection			
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
	Qty. 2500	Qty. 2000	Qty. 2000	Qty. 2500	Qty. 2000	Qty. 2000	Qty. 2500	Qty. 2000	Qty. 2000	Qty. 3500	Qty. 1500	Qty. 2500	Qty. 3000	Qty. 2000	Qty. 3000	Qty. 3500	Qty. 1500	Qty. 2500	Qty. 3000	Qty. 2000	Qty. 3000	Qty. 3500	Qty. 1500	Qty. 2500	Qty. 3500	Qty. 1500	Qty. 2500	Qty. 2500	Qty. 2000	Qty. 2000		70000
Foreign yarn	2	3	2	1	3	2	1	3	2	1	3	2	1	3	1	2	3	2	1	3	2	1	3	2	1	3	2	1	3	2	61
Uncut thread	3	1	2	2	2	1	3	2	1	3	2	1	2	1	3	1	2	2	3	2	1	2	2	1	2	2	1	1	2	1	55
Dirty stain	4	2	3	4	2	3	4	2	3	4	2	3	4	2	3	4	2	3	4	2	3	4	2	3	4	2	3	4	2	3	90
oil stain	3	4	1	3	4	1	3	3	1	3	4	1	3	4	1	3	4	1	3	4	1	3	4	1	3	4	1	3	4	1	79
Fabric loose				1	2	3																									6
Uneven bottom hem				0	0	1																									1
Side seam poor shape							2	2	1																						5
Bottom																						1	1	2							4

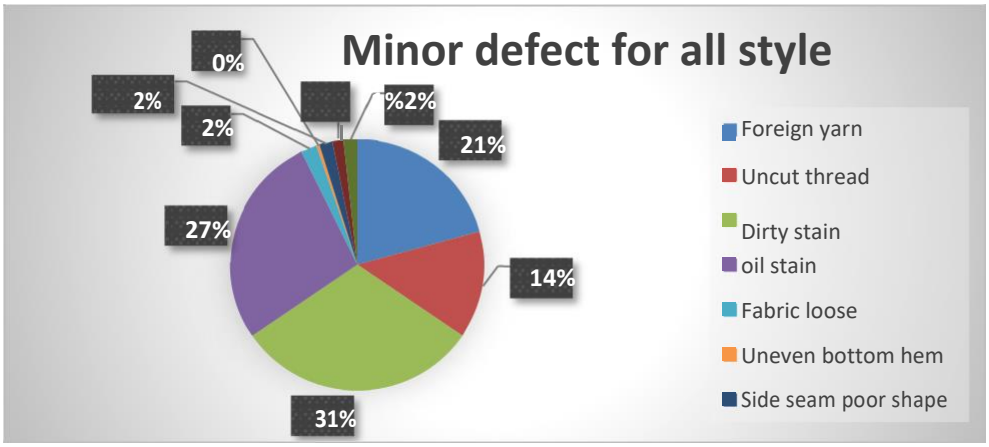
This table presents data for minor defect which found on inspection report regarding ten styles. As inspection held three times in a year, therefore we mention three times inspection for each style. By following this table, we can be able to know which types of minor defect were repeated many times as well as which is rare defect in an industry.

All types of minor defects name mentioned in vertically on the other hand style name as well as defect number here given in horizontally.

Furthermore, here added a graph in below to analysis this data more clearly.



Looking at the chart we can see four small faults immediately: oil spot (79 times), dirty spot (90 times), uncut thread (40 times) and foreign yarn (60 times). These defects appear with a higher frequency when compared to other defects such as loose fabric, uneven bottom hems, poorly shaped side seams or rib shedding in the neck.



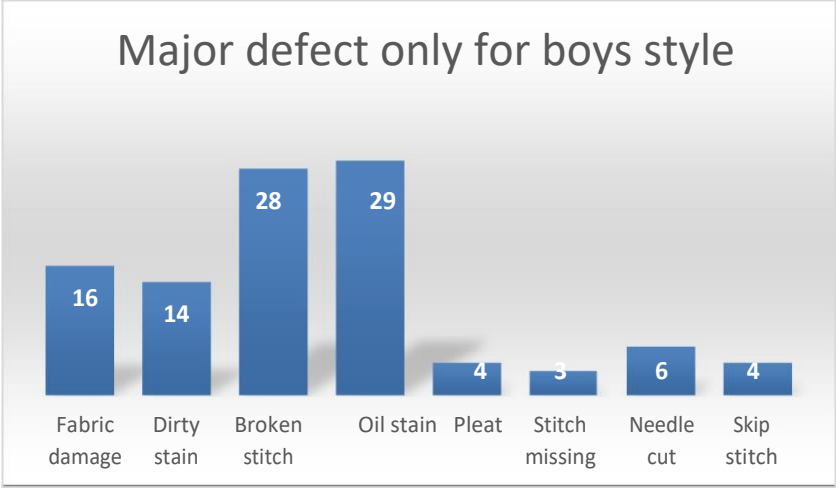
The minor defect percentage for each style during the year is shown in graph 2. This graph makes it simple to calculate the defect percentage rate. The highest percentage of flaws in this case include oil stain (27%), dirty stain (31%), uncut threat (14%), and foreign yarn (21%).

BOY'S STYLE:

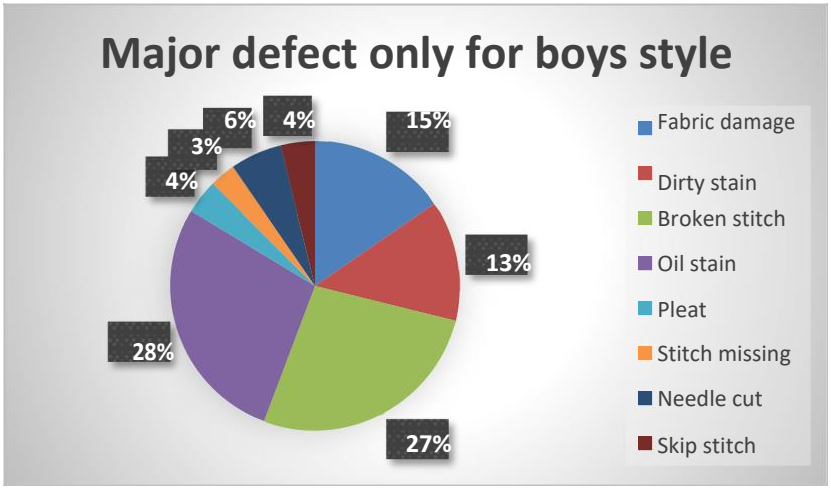
This table states major defect only for boys' styles. Here given only major defect which found in boys style. Moreover, here added product quantity for per style as well as style wise total defect. By following this table, we can be able to know how much major defect found in only boy's style.

Major defect for boy's style																
	Style name															
	Boys T shirt			Dragon T shirt			Oversized T shirt			Polo shirt			Exclusive T shirt			
Name of defect	Inspection			Inspection			Inspection			Inspection			Inspection			
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
	Qty. 2500	Qty. 2000	Qty. 2000	Qty. 2500	Qty. 2000	Qty. 2000	Qty. 2500	Qty. 2000	Qty. 2000	Qty. 2500	Qty. 2000	Qty. 2000	Qty. 2500	Qty. 2000	Qty. 2000	Total defect
Fabric damage	1	1	2				1	1	2	1	1	2	1	1	2	16
Dirty stain	1	1	1				2	2	1	1	1	1	1	1	1	14
Broken stitch	3	1	2	3	2	2	0	1	2	3	1	2	3	1	2	28
Oil stain	3	2	2	1	3	1	2	1	0	3	2	2	3	2	2	29
Pleat				1	1	2										4
Stitch missing				1	1	1										3
Needle cut				3	1	2										6
Skip stitch							1	2	1							4

Graph 1



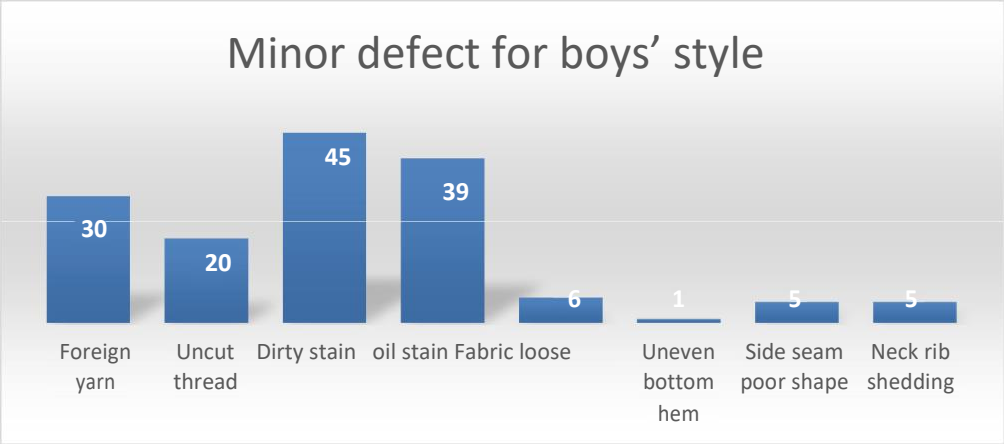
This graph makes it easy to recognize four key defects: pleat, stitch missing, needle cut, and skip stitch are far less common than fabric damage (16 times), dirty stain (14 times), broken stitch (28 times), and oil stain (29 times).



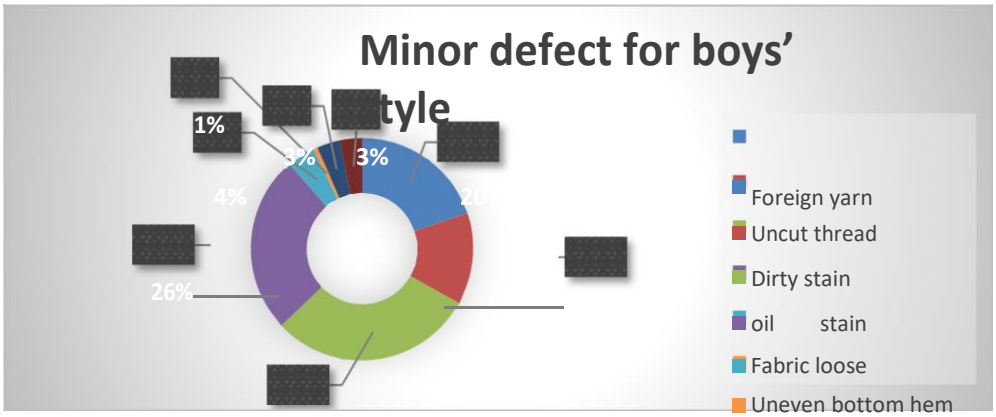
The significant defect percentage for each style during the year is shown in graph 2. This graph makes it simple to calculate the defect percentage rate. The highest percentage of flaws in this case include oil stain (28%), broken stitch (27%), dirty stain (13%), and fabric damage (15%). And fewer than 10% is damaged by others.

Minor defect																
	Style name															
Name of defect	Boys T shirt			Dragon T shirt			Oversized T shirt			Polo shirt			Exclusive T shirt			
	Inspection			Inspection			Inspection			Inspection			Inspection			
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
	Qty. 2500	Qty. 2000	Qty. 2000	Qty. 2500	Qty. 2000	Qty. 2000	Qty. 2500	Qty. 2000	Qty. 2000	Qty. 2500	Qty. 2000	Qty. 2000	Qty. 2500	Qty. 2000	Qty. 2000	Total
Foreign yarn	1	3	2	1	3	2	1	3	2	1	3	2	1	3	2	30
Uncut thread	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	20
Dirty stain	4	2	3	4	2	3	4	2	3	4	2	3	4	2	3	45
oil stain	3	4	1	3	4	1	3	3	1	3	4	1	3	4	1	39
Fabric loose				1	2	3										6
Uneven bottom hem				0	0	1										1
Side seam poor shape							2	2	1							5
Bottom poor shape																
Neck rib shedding													2	0	3	5

This table presents data about minor defect only for boys' styles which found on inspection report within ten styles. As inspection held three times in a year, therefore we mention three times inspection for each style. By following this table, we can be able to know which types of minor defect for boys' style is repeating many times as well as which is rare defect in an industry. Furthermore, here added two graphs in below to analysis this data more clearly.



By closely examining this graph, we can quickly spot four minor faults: oil stain (39 times), dirty stain (45 times), uncut thread (20 times), and foreign yarn (30 times). These defects are significantly prevalent than other defects like loose fabric, uneven bottom hems, poorly shaped side seams, and neck rib shedding.



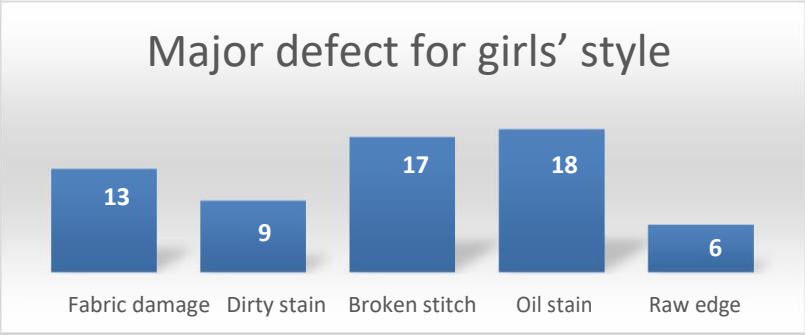
The minor flaw percentage for the sole boys' style during the year is shown in graph two. This graph makes it simple to calculate the defect percentage rate. The most common flaws in this instance are oil stain (26%), dirty stain (30%), foreign yarn (20%), and uncut threat (13%). And less than 5% damage is done to others.

GIRL'S STYLE:

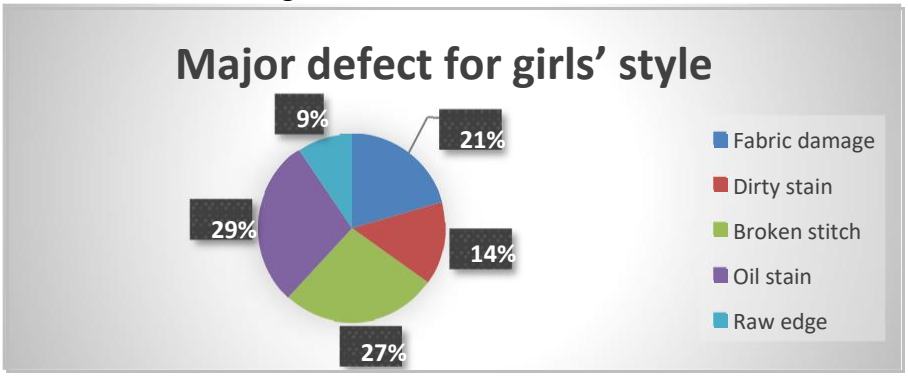
By following this table, we can be able to count how many major defects we find in girls' styles throughout a year. It describes overall major defect only for girl's style.

Major defect										
Name of defect	Menime ladies T shirt Inspection			Girls bib dress Inspection			Chilly T shirt Inspection			
	1	2	3	1	2	3	1	2	3	
	Qty. 3500	Qty. 1500	Qty. 2500	Qty. 3500	Qty. 1500	Qty. 2500	Qty. 3500	Qty. 1500	Qty. 2500	
Fabric damage	2	1	2	1	1	2	1	1	2	13
Dirty stain	1	1	1	1	1	1	1	1	1	9
Broken stitch	3	1	1	3	1	2	3	1	2	17
Oil stain	1	2	2	2	2	2	3	2	2	18
Raw edge	1	0	2	1	1	1				6

This table represents only for boys' styles major defect. Here, is given only major defect which found in boys style. Moreover, there is an added product quantity for per style as well as style wise total defect. By following this table, we can be able to know how many major defects found in only boy's style.



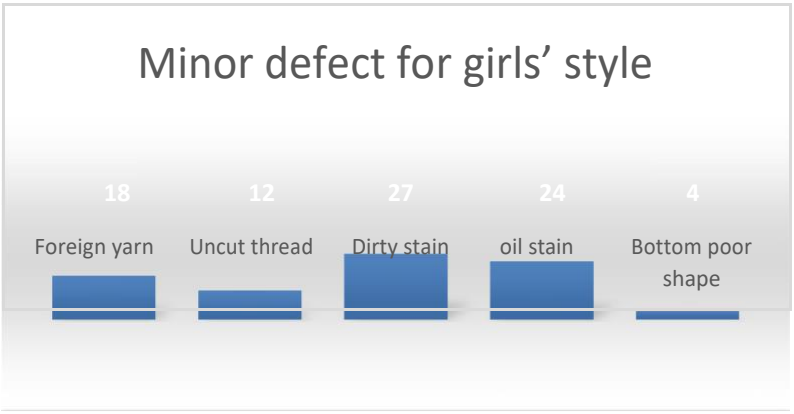
By closely examining this graph, we can quickly spot four key defects: oil stain (18 times), broken stitch (17 times), fabric damage (13 times), and dirty stain (9 times), all of which are far more common than raw edge.



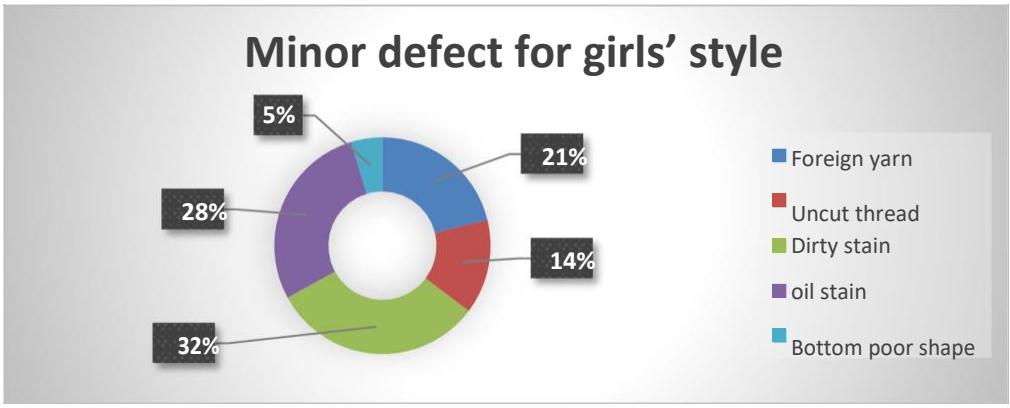
The significant flaw percentage for girls' style during the year is mentioned in graph 2. This graph makes it simple to determine the defect percentage rate. Here, fabric degradation (21%), dirty stains (14%), rough edges (9%), oil stains (29%) and broken stitches (27%) account for the largest number of defects.

Minor defect										
Name of defect	Menime ladies T shirt			Girls bib dress			Chilly T shirt			
	Inspection			Inspection			Inspection			Total defect
	1	2	3	1	2	3	1	2	3	
	Qty. 3500	Qty. 1500	Qty. 2500	Qty. 3500	Qty. 1500	Qty. 2500	Qty. 3500	Qty. 1500	Qty. 2500	
Foreign yarn	1	3	2	1	3	2	1	3	2	18
Uncut thread	1	2	1	1	2	1	1	2	1	12
Dirty stain	4	2	3	4	2	3	4	2	3	27
oil stain	3	4	1	3	4	1	3	4	1	24
Bottom poor shape				1	1	2				4

This table shows data about minor defects which was found on inspection report regarding only for girl's style. As inspection is held three times a year, therefore we mention three times inspection for each style. By following this table, we can be able to know which types of effect were repeated many times as well as which is rare defect in an industry. Furthermore, here added two graphs in below to analysis this data more widely.



Only the minor defect percentage for girls' style during the year is mentioned in graph 2. We may quickly ascertain the defective percentage rate by referring to this graph. The most common flaw here is the dirty stain (32%), followed by the foreign yarn (21%), the uncut threat (14%), and the oil stain (28%). Finally, there is a bottom poor form fault, which is an uncommon minor flaw.

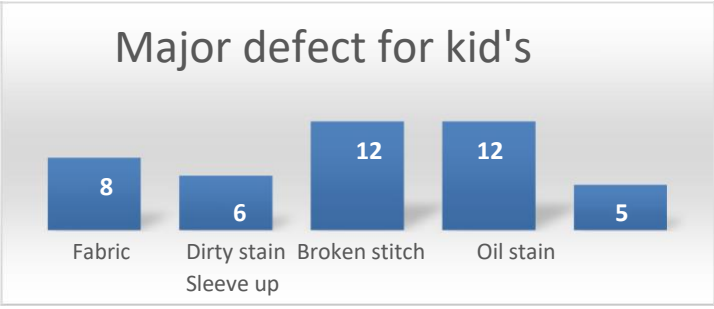


Only the minor defect percentage for girls' style during the year is mentioned in graph 2. We may quickly ascertain the defective percentage rate by referring to this graph. The most common flaw here is the dirty stain (32%), followed by the foreign yarn (21%), the uncut threat (14%), and the oil stain (28%). Finally, there is a bottom poor form fault, which is an uncommon minor flaw.

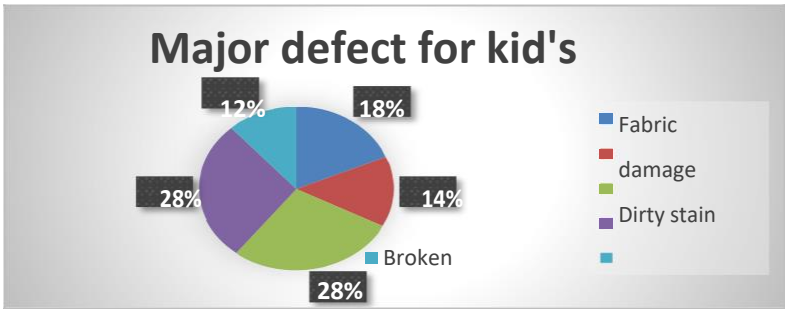
KID'S STYLE:

Major defect							
Name of defect	Kid's T			Kikki dress			
	Inspection			Inspection			Total
	1	2	3	1	2	3	
	Qty. 3000	Qty. 2000	Qty. 3000	Qty. 3000	Qty. 2000	Qty. 3000	
Fabric damage	1	1	2	1	1	2	8
Dirty stain	1	1	1	1	1	1	6
Broken stitch	3	1	2	3	1	2	12
Oil stain	3	2	2	2	2	1	12
Sleeve up down				1	3	1	5

This table describes only for kid's styles major defect. Here, only major defects which are found in kid's style. Moreover, here there is an added product quantity per style as well as style wise total defect. By following this table, we can be able to know how many major defects are found in only kid's style.



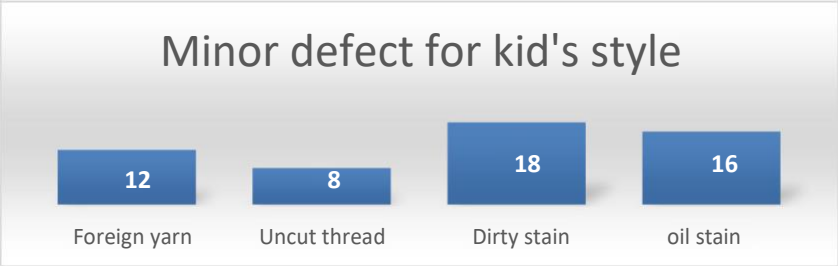
This graph makes it easy to detect the four key defects: sleeve up down five times, oil stain twelve times, broken stitch twelve times, and fabric damage eight times. Here, there is more oil stain and damaged stitching.



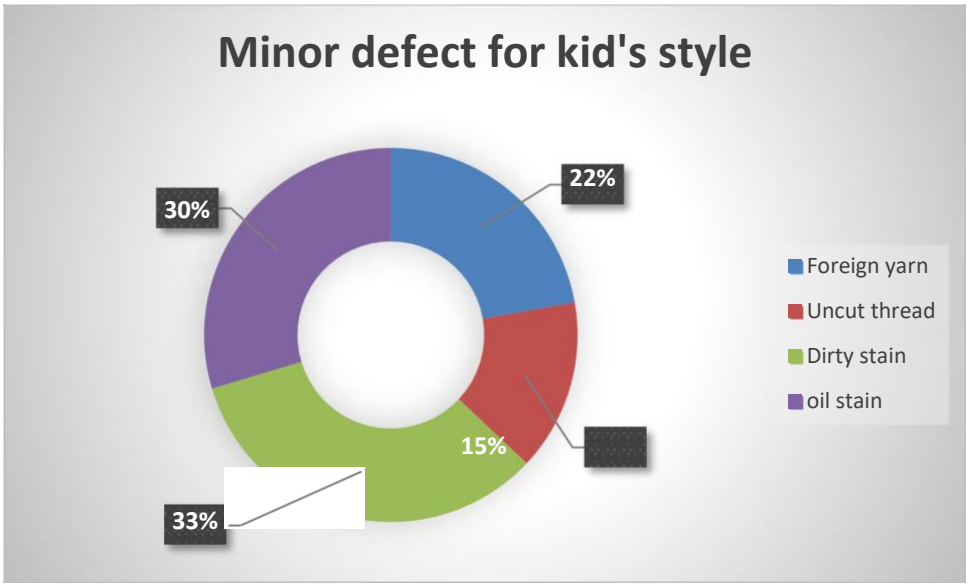
The significant defect percentage for each style during the year is shown in graph 2. We can quickly determine the defect % rate by referring to this graph. Here, oil stains (28%), and broken stitches (27%), make up many faults. Additional damages include sleeve up down (12%), dirty stain (14%), and fabric damage (18%).

Minor defect for kid's style							
Name of defect	Kid's T			Kikki dress			Total defect
	Inspection			Inspection			
	1	2	3	1	2	3	
	Qty. 3000	Qty. 2000	Qty. 3000	Qty. 3000	Qty. 2000	Qty. 3000	
Foreign yarn	1	3	2	1	3	2	12
Uncut thread	1	2	1	1	2	1	8
Dirty stain	4	2	3	4	2	3	18
oil stain	3	4	1	3	4	1	16

This table displays information on minor flaws that were discovered solely for children's clothing in the inspection report. We specify three inspections for each style because the inspection is conducted three times a year. We may determine which effects are recurring and which are uncommon flaws in an industry by referring to this table. Additionally, two graphs have been added below to analyze this data more thoroughly.



This graph makes it simple to discover four small defects: oil stain (16 times), dirty stain (18 times), uncut thread (08 times), and alien yarn (12 times).



The percentage of minor defects for each style during the year is mentioned in graph 2. We can quickly determine the defect % rate by observing this graph. Dirty stain (31%) and Uncut threat (14%), which are large percentage faults, foreign yarn (21%) and oil stain (27%) are the others.

5. CONCLUSION

5.1

Oil marks and damaged stitches were the two conspicuous defects in boys' style. These problems recurred frequently. Oil spots and unclean patches formed two other small flaws that were detected. Since it is possible to group stains into both major and minor categories, an attempt at controlling such spots could reduce defects by half.

In their style, oil stains were still the most common large problem despite some other small faults being present among girls' designs. This should also be emphasized because of a higher prevalence of this kind among teenage girls' clothing designs.

Many of these defects had both major and minor manifestations which recurred in children's style. The challenges faced here were like those of the boys' and girls' styles.

In summary, oil stains appeared in both major and minor fault categories while they were most common across all three styles. By reducing the occurrence of oil stains, it would be possible to significantly lower the total defect rates for all styles.

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