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Problems of Garment Textile Industry in Bhilwara

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Abstract: **In our country, the Textile industry occupies an essential place in the country's economy because it assists the industrial output, employment generation, and foreign interaction revenues. In today's time, the primary concern for any garment manufacturing industry is the defects that arise during the manufacturing cycle, and garment faults are one of the most crucial aspects of the apparel manufacturing industry because it negatively impacts real productivity. The primary aim of this research paper is to analyze the issues confronted by various garments industries and then rank these problems according to their effects on the production cycle and product. These goals were examined with the garment worker working in the garment industry and were permitted to respond confidentially by telephone, other than the option to provide an email address to procure a complimentary copy of the results. Totally of 150 submissions were compiled. However, only 142 were correct, and eight were incorrect due to inappropriate filling in the data gathering sheet in the survey assessment. Hence the submissive rate for this survey was deemed to be successful 150 respondents**

Keywords: **Textiles, garment defects, ranking, Lean wastes.**

I. INTRODUCTION

In India, the textile industry encloses diverse industrial divisions which operate a comprehensive combination of natural and synthetic fibers to create fabrics. Generally, the textile industry can be extensively categorized into two kinds, the collected mill sector and the cluttered mill sector. As the textile industry contributed significantly to the national economy, initiatives are being driven to take crucial and satisfactory efforts to lure investment and promote overall evolution and development in this sector. The textile or apparel industry primarily involves manufacturing yarn and cloth and the following design or production of clothing and distribution. The raw material may be natural or synthetic, utilizing by-products of the chemical industry. The city of Bhilwara, located in the Mewar province of Rajasthan, is a prominent epicenter for textiles in India. The textile industry is a primary sector in the district. The location has more than 400 production units, pushing it into an influential textile center specializing in artificial materials for trousers. The methods of textile consisted of various techniques such as spinning, weaving, and processing carried out in the mills in Bhilwara. Hence, the enterprise is also the most prominent job generated in the unorganized and organized sector, with over 75,000 people working in the industry to raise the State's economy. The district is the motherland of as many as 16 spinning mills in an enormous sector and five open spinning divisions, which produce approximately two lakh tones of polyester/viscose and cotton yarn yearly. With such a colossal production churning out per annum, Bhilwara district sole is stated to satisfy 44 percent of the State's yarn manufacturing capability.

Bhilwara has a rich chronology of textiles dating to the 60s, when 200-second hand looms from the British Raj was being operated, and numerous cotton yarn-manufacturing factories were working. But it was exclusively when, in 1988, removed the Industrial licenses to provide momentum to the industrial blossoming the textile industry thrived. Between the years 1988 to 1990, installed over 70 weaving divisions. Bhilwara has become a vital textile center in India. Technologies like air jet spinning are employed exclusively in Bhilwara, and it is the only district manufacturing silk yarns in the State of Rajasthan. Around 70 crore meters of various blends of polyester fabrics such as polyester-wool, polyester-viscose-modal, polyester-viscose-elastane, and polyester-wool elastane are being manufactured in the district. Bhilwara is also gradually thumping the prospect in home textiles and home furnishings.

Pair of institutions is manufacturing high-quality and usable yields like a flock, Velcro fabrics, thermal curtains, and upholstery fabrics. Giving constant aid from the state government and bodies like the Mewar Chamber of Commerce and Industry has devised the town to reach distinction in export matters. Moreover, the central government has delivered economic aid via Market Access Initiative Scheme for generating technologically concentrating services. Beneath Aid to States for Expanding Export Infrastructure and other Allied Activities (ASIDE), special assistance is supplied to the town of Bhilwara for creating infrastructure structures for more good manufacturing capabilities. Barring this, the considerable substantial advantage of the city has been the assertion of Bhilwara as one of the Mega Power loom Cluster in the year 2009 by the Ministry of Textiles. Under this, we will deliver a 70-crore grant for enhancing Bhilwara textile testing structures, export advancement structures, and infrastructures. Undoubtedly, the district of Bhilwara has a significant possibility and is a well-known textile destination not simply in the country but is also cultivating traction in the global market because of its broad export market.. At the current period the performance of many garment industries hinges on many parameters such as the caliber of garments products, production cost and time etc. These parameters are hindered due to different faults arising in the sewing workstation. Defects in the garment industry can lead to reduction in the economy of the garment industry. Due to these consequences the garment organization are chosen for the purpose of the research for eradicating the garment wastes by applying Lean tools and Techniques in the sewing workstation referred through study of old literature. So this research try to find out the common scenario of garment industry of chosen garment

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industry by illustrating the Lean philosophy

II. STATEMENT OF THE PROBLEM

In India, the textile sector is one of the country's largest manufacturing sectors and plays a substantial position in exporting the products. For further growth of the textile industry, it is crucial to know the current problems the textile industries are facing. The difficulties can arise, such as waste due to overproduction, Manual handling, Government Regulations, Labour turnover, many procedures, and the Rate of interest being too high. Therefore the primary aim of this research is to sort out the problems faced by the textile industry according to their prominence in the garment production cycle.

III. SCOPE OF THE ANALYSIS

The research primarily concentrates on the garment-textile units encountering troubles during the manufacturing of garments. The elements which may construct the issues for garment textile units are Labour, unwanted transportation, overproduction, over processing, unwanted motion. This has been endured as the central priority of the study. The opinions of Owners belonging to various strata of Bhilwara city are taken into the narrative in this analysis.

IV. OBJECTIVES OF THE STUDY

The goals of this analysis are as follows.

- To analyze the problems faced by various small-scale garments textile units in Bhilwara.
- To rank the multiple issues in the garment industry according to their significance during garment manufacturing.

V. LITERATURE REVIEW

The concept of Lean manufacturing was first discovered at Toyota motor company in 1950 by Taichi ohno according to Fricke (2010) as a progressive proficiency which hinges on the head and hand ideology of the artisans period, integrating it with the work rationalization and gathering line manufacturing and adding the principles of togetherness for improve production.

As said by Jonwal (2014) the definition of the Lean with reference to a person is “Any human whose body does not have extra weight or the person whose body has zero fat”. By virtue of this description the Lean is a scientific tool in which the target is to minimize the wastage during the production cycle and the ways to reduce the wastage are by better communication or understanding between different production workstation and by better use of resources during the production cycle and this result in the reduction of the manufacturing cost. By applying the concept of Lean it can results in the reduction in the human effort and production time and manufacturing space by 50%.

There is another definition of Lean according to Aitken(2011) in which the improvement of the business is not only aim, it is also to produce the required amount of confidence and it is a philosophy whose quality of execution in industry depends upon the top management. In the global market the garment industry of developing countries is facing the challenges from the garment industry of developed countries. The success of any garment industry depends on the optimum use of the resources and simultaneously doing a research for producing the product in innovative way which results in increase in the productivity of garment industry but in India most of the garment industry is a small or medium scale industry and the processes these industry are using for the production are traditional and due to this these industry faces the problems such as high reworks, high amount of rejection, low productivity, unbalancing of workstation and longer manufacturing lead time and the issues of price and manpower.

A survey was done by Bheda(2002) with the target of finding the achieve productivity level, parameters associated and the possibilities for improvement by Indian garment industry and the relevant data was collected by doing the interview of three thousand active garment producer and thirty six producer of domestic and regional brands from major garment manufacturer such the likes of Bangalore, Bhilwara, Madurai, Delhi and eighty garment producing industry manufacturing ladies fabric top and having a capacity of more than thirty machines were selected by the assessment, cum-cuota sampling and the workers are interviewed for the purpose of surveying. The results disclosed that the efficiency of the garment industry was low. It has been found that the productivity of machines is 10.3 shirts per sewing machine per shift basis and the labour productivity was 8.03 shirts per shift basis. It showed there is a relation between machines, workers, and operators.

VI. METHODOLOGY OF THE STUDY

This study was taken out in Bhilwara city from November 2020 to March 2020 and lasted five months. This analysis is based on a questionnaire method. The set of questions is sent to different medium-scale textile industries in Bhilwara. The collective quantitative data shows a considerable detailed waste in the manufacturing process related to the garments. This process was found to be the most refined data gathering technique. Some methods, such as facilitating telephonic calls and dispatching aftermath letters, increased the response rate. The set of questions was crafted in consulting with garment manufacturing managers, supervisors, and chief executives of the garment industry who are primarily engaged in garment production. After deciding on a set of questions, it was sent to a textile employee, and their responses were gathered. Then by using statistical analysis, ranking of the Lean wastes decided to arise in the garment industry

VII. LIMITATIONS OF THE STUDY

The constraints of the analysis are.

- The sampling batch was limited to Bhilwara city only.
- The specimen size was contented to 150 respondents solely.
- The investigation has concentrated only on those companies whose assets amount between 30 lakhs to less than 5 crores only.

VIII. ANALYSIS AND INTERPRETATION

PERCENTAGE INVESTIGATION

A. MEASURES FOR WASTE OF OVERPRODUCTION

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Table I. Percentage of Wastes from Respondents for Overproduction

S.No	Types of Over Production Waste	Particulars					
		Staunchly agree	Agree	Doubtful	Staunchly disagree	Disagree	Percentage
1	Unnecessary Inspection	48	43	3	32	16	64.08
2	Unleveled Planning	42	36	0	36	28	54.92
3	Distorted Work Load	44	26	4	42	26	49.29
4	Length Process Step	43	35	0	36	28	54.9
5	Mismanagement of Automation	38	37	2	31	34	52.8
	Range	10	6	2	10	18	Average 55.19%
	Minimum	38	26	2	31	16	
	Maximum	48	43	4	36	34	
	Sum	215	177	9	177	132	
	Mean	43	35.4	1.8	35.4	26.4	
	Standard deviation	3.224	5.46	1.124	3.878	5.85	

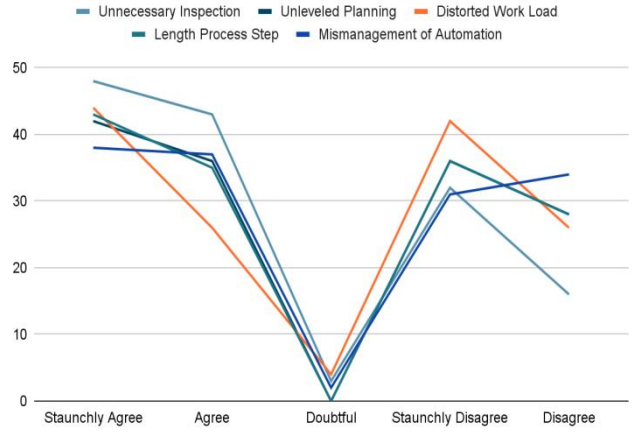

Fig.1. Visual inspection for percentage of wastes obtained from Respondents for overproduction

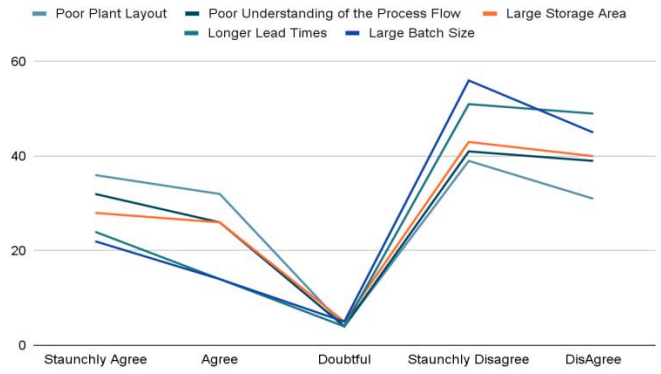

Fig.2. Visual Identifications for Percentage of Wastes obtained from Respondents for Transportation.

Five important questions referred in Table I are raised to the respondents about waste of overproduction. This figure 7.1 provide the visualization of number of respondents affirmative or not affirmative to the fact that the overproduction is one of the primary wastes among the group of eight wastes arises in textile industry

Thus table demonstrate that valuation awarded from respondent for overproduction had a very large effect on staunchly agreeing (3.605) and agreeing (6.107)/staunchly disagreeing (4.335) and disagreeing (6.542) opinions. From the table I, 39.2 % of respondent emphasized that over production is one of the primary waste in garment production sector.

B. MEASURES FOR WASTE OF TRANSPORTATION

Transportation is defined as discharge to and from outside of the industry warehouse according to researcher Devadasan (2012). The price of transportation may rise due to extra refinishing of products and raw matters inventories. Hence it is required that manufacturing operation must be done near customer area. Five crucial questions described below in Table II are asked to the respondents concerning waste of transportation. The following figure 2 clearly describe the percentage of respondent in agreement and disagreement with analysis that

Thus table demonstrate that valuation awarded from respondents for the transportation had a very large effect on the staunchly agreeing (5.1224) and agreeing (7.2)/staunchly disagreeing (6.449) and disagreeing (6.4095) opinions. From the table II, 25.4 % of respondent emphasized that transportation is one of the primary waste in garment production sector.

C. MEASURES FOR WASTE OF DEFECTS

The large amount of production product and defective product can result in reduction in the profit of industry. Five crucial descriptions below in Table III are asked to the workers and management regarding waste of defects. The below figure 3 describe the maximum number of respondents accepting that the defect is one of the primary waste among the group of eight wastes in the manufacturing sector. Among five different types of defects all respondents accept that sewing defect is the most problematic and most crucial defect arise during manufacturing process.

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Table II. Percentage of Wastes from Respondents for Transportation

S.No	Types of Transportation Waste	Particulars					
		Staunchly agree	Agree	Doubtful	Staunchly disagree	Disagree	Percentage
1	Poor plant layout	36	32	4	39	31	47.8
2	Poor understanding of the process flow of the production	32	26	4	41	39	40.8
3	Large storage area	28	26	5	43	40	38.02
4	Longer lead time	24	14	4	51	49	26.76
5	Large batch size	22	14	5	56	45	25.35
	Range	14	18	1	17	14	Average 35.74
	Minimum	22	14	4	39	31	
	Maximum	36	32	5	56	45	
	Sum	142	112	22	230	204	
	Mean	28.4	22.4	4.4	46	40.8	
	Standard deviation	5.12	7.2	.48	6.44	6.07	

Table III. Percentage of Wastes from Respondents for Defects

S.No	Types of Transportation Waste	Particulars					
		Staunchly agree	Agree	Doubtful	Staunchly disagree	Disagree	Percentage
1	Sewing defects	108	34	0	0	0	100
2	Seaming faults	54	46	2	22	22	70.4
3	Placement faults	47	40	3	32	32	61.26
4	Fabric faults	48	46	2	24	24	66.19
5	Embroider y faults	37	41	5	35	35	54.9
	Range	71	12	5	35	24	Average 70.55
	Minimum	37	34	0	0	0	
	Maximum	108	46	5	35	24	
	Sum	294	207	12	113	84	
	Mean	58.8	41.4	2.4	22.6	16.8	
	Standard deviation	25.19	4.45	1.62	12.28	8.634	

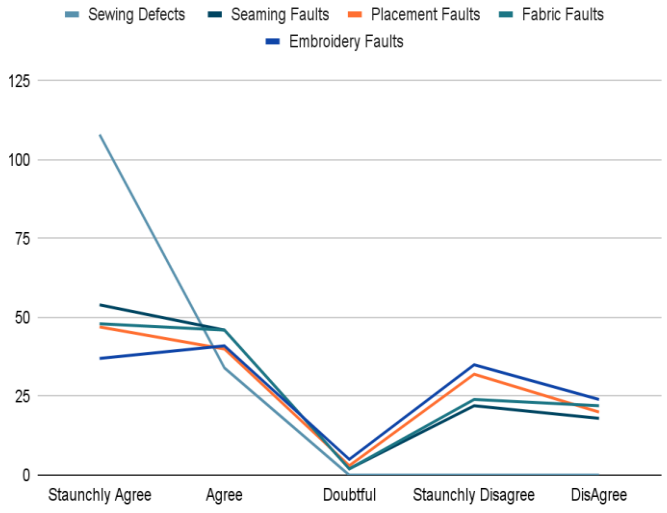

Fig.3. Visual Identifications for Percentage of Wastes obtained from Respondents for Defects.

Thus Table III clearly reveals that ratings received from respondents for defects had a high impact on strongly agreeing (25.19) & agreeing (4.45) / strongly disagreeing (12.28) & disagreeing (8.624) opinions. From the Table, 70.55% of respondents expressed that defects are one of the most influential wastes in garment manufacturing firms.

D. MEASURES FOR WASTE OF INVENTORY

In most of the circumstances, the devised use-cost of the basic material in companies is 63.4%, though the actual use-cost of natural fabrics in apparel enterprises is 65.5%.Surplus stock stagnates the excess commodities in the store room without client orders. The extra labor leans on the number of products fabricated in every shift; regular attendance and operators' performance is among the reasons for elevated garment production, leading to a high inventory level. Shoddy logbook keeping, miscommunication with suppliers, customers, and inconsistent administration decisions will improve inventory levels. As the status of stock boosts, the cash-on-hand expense for preserving also expands. When entities stagnate in the storeroom, additional time is needed to divert the materials into the storehouse and out of storehouse sites to customers Damage to commodities in stock cumulates with stock level. Optimum stock is essential to control manufacturing operations effectively and lowest production leads periods in apparel

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companies. Four influential questions viewed down in Table 7.4 are presented to the respondents about inventory waste. The following Figure 4 displays the number of respondents approving and dissenting that commodities are one of the effective wastes among eight wastes in the apparel manufacturing procedure.

Therefore Table IV apparently demonstrates that ratings acquired from respondents for products influenced strongly agreeing (3.39) & agreeing (7.79) / strongly disagreeing (4.92) & disagreeing(6.09) opinions. From the Table, 48.76% of respondents conveyed that commodities are one of the wastes in apparel manufacturing enterprises

Table IV. Percentage of Wastes from Respondents for Inventory

S.No	Types of waiting	Particulars					
		Staunchly agree	Agree	Doubtful	Staunchly disagree	Disagree	Percentage
1	Poor forecasting	41	40	4	30	27	57.04
2	Unleveled scheduling	37	37	3	34	31	52.11
3	Unreliable shipment by supplier	34	36	3	39	30	49.29
4	Unbalanced Workload	32	20	4	43	43	36.6
	Range	9	20	1	13	16	Average
	Minimum	32	20	3	30	27	
	Maximum	41	40	4	43	43	
	Sum	144	133	14	146	131	
	Mean	36	33.25	3.5	36.5	32.75	
	Standard deviation	3.39	7.79	.5	4.92	6.09	

Table V. Percentage of Wastes from Respondents for Over Processing

S.No	Types of Over Processing Waste	Particulars					
		Staunchly agree	Agree	Doubtful	Staunchly disagree	Disagree	Percentage
1	Styles changes without process change	33	32	2	43	32	45.77
2	Lack of information about process	31	31	1	45	33	43.6
3	Redundant approvals	27	28	1	49	37	38.73
4	Over processing to accommodate expected down time	25	24	1	55	37	34.5
5	Customer true requirement not properly defined	22	23	2	54	41	31.6
	Range	11	9	1	12	9	Average 38.84
	Minimum	22	23	1	43	32	
	Maximum	33	32	2	55	41	
	Sum	138	138	7	246	180	
	Mean	27.6	27.6	1.4	49.2	36	
	Standard deviation	3.9	3.61	.4898	4.74	3.22	

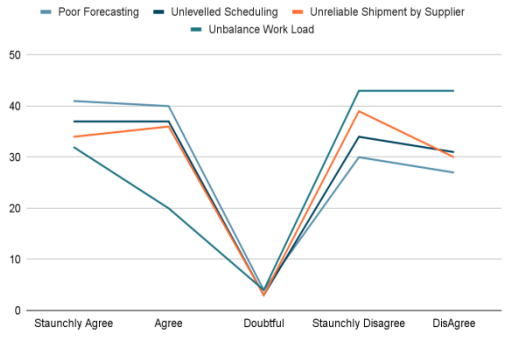

Fig.4. Visual Identifications for Percentage of Wastes obtained from Respondents for waste of Inventory

E. MEASURES FOR WASTE OF INVENTORY

Most of the manufacturing operations are critical to the lean approach, which minimizes the garment waste. Therefore, it is noteworthy to focus on all operations in the sewing unit as possible waste. Numerous literature assessments reveal that over processing is more critical to eradicating enterprise waste. Unfortunately, the procedures in approving the production method from top-level leadership in apparel enterprises are a non-value added exercise. Indecent processing, when the quality management division determines the defective entities, the goods need re-designing by the garment manufacturing companies. Five critical questions viewed below in Table V are presented to the workers concerning waste of over processing. The subsequent Figure 5 shows the number of respondents approving and dissenting to that over

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processing is one of the wastes among eight wastes in the apparel manufacturing method.

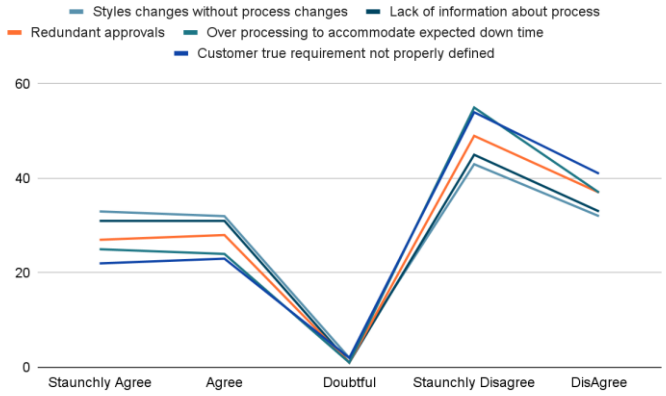

Fig.5. Visual Identifications for Percentage of Wastes obtained from Respondents for waste for over processing

Therefore Table V apparently demonstrates that ratings acquired from respondents for products influenced strongly agreeing (3.9) & agreeing (3.61) / strongly disagreeing (4.74) & disagreeing(3.22) opinions. From the Table, 38.84% of respondents conveyed that over processing is one of the wastes in apparel manufacturing enterprises.

F. MEASURES FOR WASTE OF MOTION

Five critical questions viewed below in Table 7.5 are presented to the workers concerning waste of over processing. The subsequent Figure 6 shows the number of respondents approving and dissenting to that over processing is one of the wastes among eight wastes in the apparel manufacturing method.

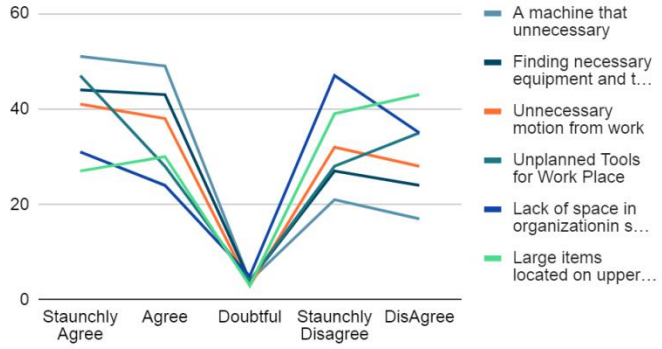

Fig.6. Visual Identifications for Percentage of Wastes obtained from Respondents for waste of motion

Therefore Table VI apparently demonstrates that ratings acquired from respondents for products influenced strongly agreeing (8.53) & agreeing (8.78) / strongly disagreeing (8.51) & disagreeing(8.49) opinions. From the Table, 53.03% of respondents conveyed that over processing are one of the wastes in apparel manufacturing enterprises.

G. MEASURES FOR WASTE OF UNDERUTILIZATION OF EMPLOYEE

The primary challenge of the production manager is to allocate crucial assignment, relevant jobs, and challenging leadership to a distinct category of people utilized to achieve the purposes of garment firms such that customer is pleased. Five noteworthy questions below in Table VII are presented to the respondents concerning the utilization of workers. The subsequent Figure 7 indicates the number of responses agreeing and refusing to that underutilization of people is one of the influential wastes among eight wastes in the chosen institution.

Table VI. Percentage of Wastes from Respondents for Motion

S.No	Types of Motion	Particulars					
		Staunchly agree	Agree	Doubtful	Staunchly disagree	Disagree	Percentage
1	A machine that unnecessary distances moved in garment industries	51	49	4	21	17	70.04
2	Finding necessary equipment and tools for concern Production process	44	45	4	27	24	61.2
3	Unnecessary motion from work place	41	28	3	32	28	55.63
4	Unplanned tool	47	28	5	47	35	38.73
5	Lack of space	31	24	5	47	35	38.73
6	Large items located	27	30	3	39	43	40.14
	Range	24	25	2	26	26	Average 53.09
	Minimum	51	24	3	21	17	
	Maximum	27	49	5	47	43	
	Sum	241	212	23	194	182	
	Mean	40.16	35.33	3.83	32.33	30.33	
	Standard deviation	8.532	8.78	.68	8.51	8.439	

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Table VII. Percentage of Wastes from Respondents for Under Utilization of Employee

S.No	Types of Underutilization of people	Particulars					
		Staunchly agree	Agree	Doubtful	Staunchly disagree	Disagree	Percentage
1	Selection of the Production manager for proper responsibility	40	39	3	38	22	55.6
2	Selection of the Production manager is to allocate correct authorities	37	41	1	40	23	54.92
3	Selection of the Production manager is to allocate right jobs	32	32	2	51	35	45.07
4	Whether employee possessing allotted practice- oriented job	28	29	1	54	30	40
5	Whether technique used to avoid underutilization of the people the scheduling of their assignments	35	27	4	53	33	36.6
	Range	15	14	3	15	13	Average 46.43
	Minimum	25	27	1	38	22	
	Maximum	40	41	4	53	35	
	Sum	162	168	11	236	143	
	Mean	32.4	33.6	2.2	47.2	28.6	
	Standard deviation	5.53	5.49	1.16	6.79	5.23	

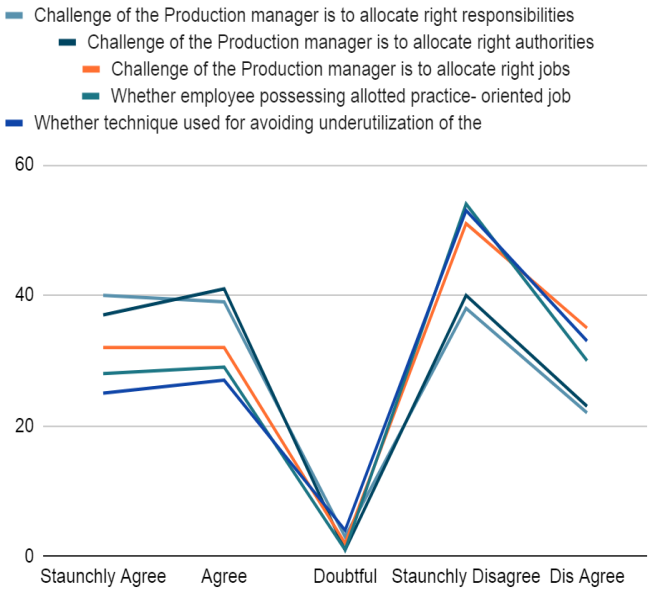

Fig.7. Visual Identifications for Percentage of Wastes obtained from Respondents for Underutilization of People

Therefore Table VII apparently demonstrates that ratings acquired from respondents for products influenced strongly agreeing (5.53) & agreeing (5.49) / strongly disagreeing (6.79) & disagreeing(5.23) opinions. From the Table, 46.43% of respondents conveyed that under utilization of people is one of the wastes in apparel manufacturing enterprises.

H. MEASURES FOR WASTE OF WAITING

Waiting happens in companies because of different non-value added actions among production methods Devadasan (2012). Most of them contain non-availability of resources like workers, finished articles, and raw fabrics and variance of the program due to unregulated discharge of knowledge and materials. An optimum plan is to be developed to lessen waiting time, which repeatedly appears in institutions. In numerous garments, the waiting is inclined to take place in different procedures in the sewing units are noted in Table VIII. Arunagiri & Gnanavelbabu (2013) Indecisiveness will result in waiting for the service time, machine break time, and undesirable period for permission from higher officials. This excess time allocation for the operators to do the work supplements the overall time for waiting for the operation. The subsequent Figure 8 indicates the number of replies conforming and differing of that waiting is one of the significant wastes among eight wastes in a picked organization.

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Table VIII. Percentage of Wastes from Respondents for Waiting

S. No	Types of waiting	Particulars					
		Staunchly agree	Agree	Doubtful	Staunchly disagree	Disagree	Percentage
1	In sufficient servicing machines and equipments in garment manufacturing	25	24	1	53	39	34.5
2	Poor scheduling of production process	22	26	1	55	38	33.33
3	Improper arrangements of machines in garments for sequence process	20	18	1	60	43	26.76
4	Time taken for signature approval from higher officials	17	17	1	61	46	23.9
5	Lack of experience of supervisor	15	17	1	61	48	22.5
	Range	10	9	0	8	10	Average 28.196
	Minimum	15	17	1	53	38	
	Maximum	25	26	1	61	48	
	Sum	99	102	5	290	214	
	Mean	19.8	20.4	1	58	42.8	
	Standard deviation	3.54	8	1	3.25	3.86	

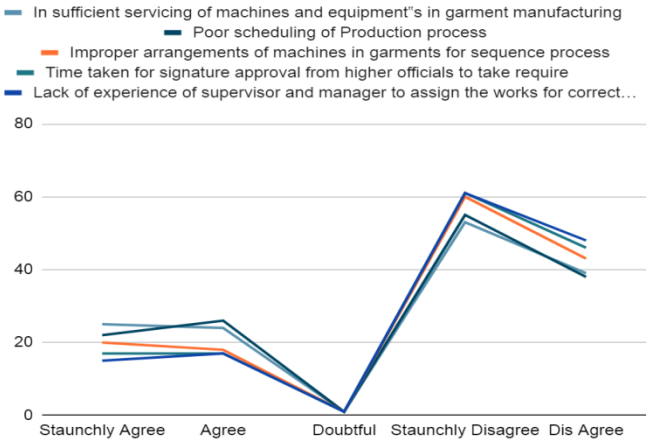

Fig.8. Visual Identifications for Percentage of Wastes obtained from Respondents for waiting

Therefore Table VIII apparently demonstrates that ratings acquired from respondents for products influenced strongly agreeing (3.54) & agreeing (8) / strongly disagreeing (3.25) & disagreeing(3.86) opinions. From the Table, 28.196% of respondents conveyed that waiting are one of the wastes in apparel manufacturing enterprises.

IX. RESULTS AND DISCUSSION

In Table IX it that flaws, movement, and overproduction are actual waste that impacts the production in the apparel manufacturing technique. The commodities rank is after the first three critical lean wastes in chosen organizations. Nonetheless, for most of the apparel industries, over processing is wholly vanished due to optimum scheduling and planning. The remnant waste in apparel like stock, underutilization of workers, processing, transport, and waiting was ranked as 4, 5, 6, 7, and 8. Wastes 5, 6, 7, and 8 do not notably impact the production of the sewing unit, as demonstrated in Figure 9. The rank suggests out that those deficiencies emerge as an influential waste in the garment industries because the number of respondents thoroughly consents with 70.55%. Afterward, movement waste with 55.19%. The third significant waste in garments is overproduction with 53.09%. The above-mentioned spare waste is the slightest significant waste that influences productivity. This research article is specifically focused on the significant impact of the first three wastes as there is a limitation of time and the most appropriate lean tools to primary minimize the first three poor wastes at selected garments at Bhilwara.

Table IX. Percentage of Wastes from Respondents for Waiting

S.no	List of Lean wastes	Percentage	Ranking
1	**Defects**	**70.55**	**1**
2	**Over production**	**55.19**	**2**
3	**Waste of motion**	**53.09**	**3**
4	**Inventory**	**48.76**	**4**
5	**Underutilization of employee**	**46.43**	**5**
6	**Over processing**	**38.84**	**6**
7	**Transportation**	**35.74**	**7**
8	**Waiting**	**28.196**	**8**

Thus, Table IX apparently discloses that a ranking of different lean manufacturing wastes in apparel industries greatly influenced defects, movement, and overproduction of lean wastes than other wastes.

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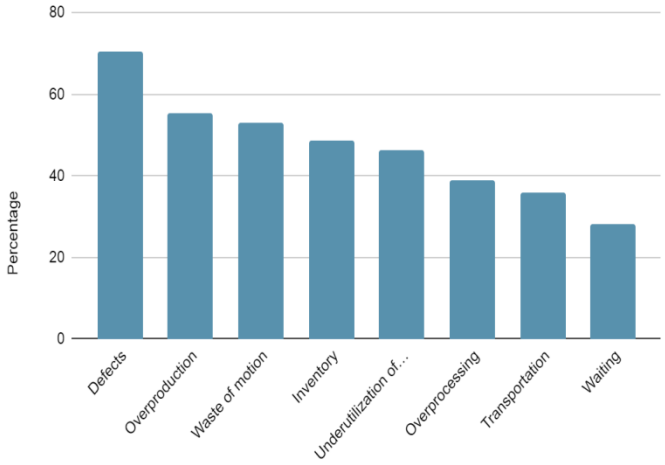

Fig.9. Visual Identifications for Percentage of Wastes obtained from Respondents for Lean wastes

X. REFERENCES

1) McGrath, W. (2007). *Impact Analysis of Large-Scale Lean Manufacturing Initiatives upon Manufacturing Process Innovation in Irish Companies.*
2) Chethan Kumar C S, Dr. N V R Naidu, Dr. K Ravindranath/ IOSR Journal of Engineering (IOSRJEN) www.iosrjen.org Vol. 1, Issue 1, pp. 001-009
3) Kayaalp I. and Erdogan M., Decreasing Sewing Defects by using Stastical Process Control Methods in the Apparel Factory, Tekstilve Konfesksiyon, 19(1), 169-174(2009)
4) Kelegama, S., 2005. Ready-made garment industry in Sri Lanka: preparing to face the global challenges. Asia-Pacific Trade and Investment Review 1, 51–67
5) Bhasin, S. And Burcher, P. (2006), ―Lean Viewed As A Philosophy‖, Journal of Manufacturing Technology Management, 17, P.P. 56-72.
6) Florida, R. "Lean and Green The Move to Environmentally Conscious Manufacturing."*California Management Review* 39, (1996) 80 105