

MINIMIZING THE EIGHTH WASTE OF LEAN- ABSENTEEISM THROUGH SIX SIGMA METHODOLOGY

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Abstract: The garment industries are labour intensive and are subjected to pollution in terms of dust and dyes. This is causing allergy and other huge amount health related issues. As employees are focused on stitching operations they tend to get injured when there is a lapse in attention. In India, garment industries are generally dominated by female workforce. There is a disparity in the male to female ratio. Most of the managers and supervisors are male and there is an increasing case of harassment towards the female workforce. Added to these conditions, the labour laws are no strict to protect the employees in terms of working conditions, job security and proper salaries. As a result there is an increase in employee absenteeism which is hurting the overall company growth and resulting in targets not being met. This research work is implemented in Apple garment industry located in South India. Absenteeism in garment industry is rampant and reaching alarming proportions. According to industry reports, if absenteeism is more than 10%, then the assembly line will be affected in terms of productivity. The majority of the garment industries in India are facing productivity problems due to employee absenteeism. The results after implementing the lean sixsigma methodology in Apple garments is positive and a trend setter for other garment industries to follow. The existing absenteeism of 11.05% is a true reflection of the state of affairs in the garment sector. This research work has shown that absenteeism can be really controlled with the involvement of management.

Keywords: Kaizen, Lean, Six Sigma, Continuous Improvement & Employees Participation, Absenteeism, garment

1. INTRODUCTION

- **Research Case :** The garment industries are labour intensive and are subjected to pollution in terms of dust and dyes. This is causing allergy and other huge amount health related issues. As employees are focused on stitching operations they tend to get injured when there is a lapse in attention. In India, garment industries are generally dominated by female workforce. There is a disparity in the male to female ratio. Most of the managers and supervisors are male and there is an increasing case of harassment towards the female workforce [6]. Added to these conditions, the labour laws are no strict to protect the employees in terms of working conditions, job security and proper salaries. As a result there is an increase in employee absenteeism which is hurting the overall company growth and resulting in targets not being met. The labour productivity can be enhanced by adopting the incentive plans for better prospects of industries [5]. This research work is implemented in Apple garment industry located in Madurai

- **Problem Statement:** Absenteeism in garment industry is rampant and reaching alarming proportions[2]. According to industry reports, if absenteeism is more than 10% , then the assembly line will be affected in terms of productivity.
- **Goal Statement**
To reduce % absenteeism to Minimum [1].
- **Team Size:** Two
- **CTQ (Critical to Quality Characteristic):** % absenteeism of employees.

2. MEASURE PHASE

In this phase, after discussions with the managers and supervisors the following data is collected with the help of team members which is indicated in table 1.1 .The variables in terms of Total working days, Total number of staff, total available days and absenteeism is recorded.

The percentage absenteeism and the defects per opportunities (dpo) are calculated which is indicated in Table 1.1

Table.1.1: Dpo and percentage absenteeism

Period	3 Months
Total Working Days	60
Total No. of Staffs	285
Total Available Days	17100
Absenteeism	1890
% Absenteeism	11.05%
dpo	0.1105
sigma	2.7

Table.1.2: Department - wise absenteeism

Department	Absenteeism	% Absenteeism
Cutting	145	7.68%
Fabric	13	0.69%
Finishing	301	15.93%
House keeping	23	1.22%
Maintenance	25	1.32%
Sample	64	3.39%
Stitching	1318	69.77%
Grand Total	1889	100%

3. ANALYZE PHASE

The past data on absenteeism, department wise & designation wise is collected and analyzed as given in table 1.2.

Figure.1.1 Pareto Chart shows that stitching and finishing departments are major contributors for absenteeism

Through brainstorming sessions with the shop supervisors, all potential causes were identified [3,4]. The identified causes are given in figure 1.2.

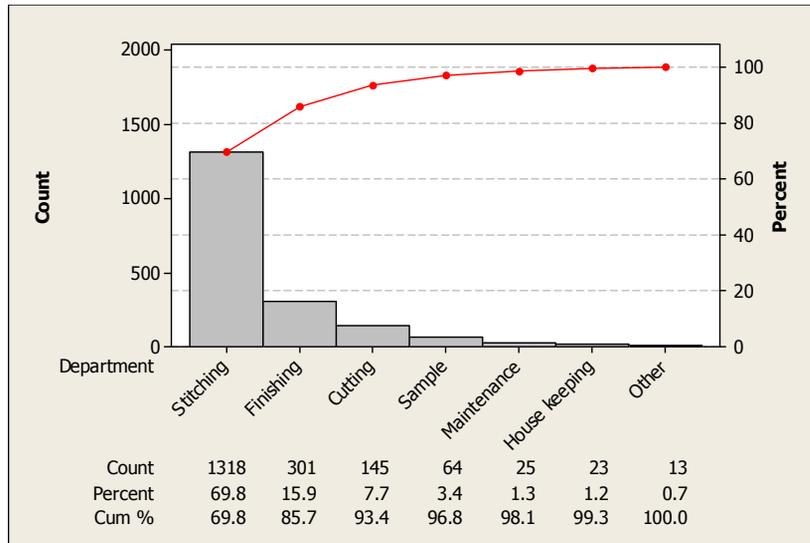


Figure.1.1: Pareto Chart for major contributors in terms of absenteeism in various department

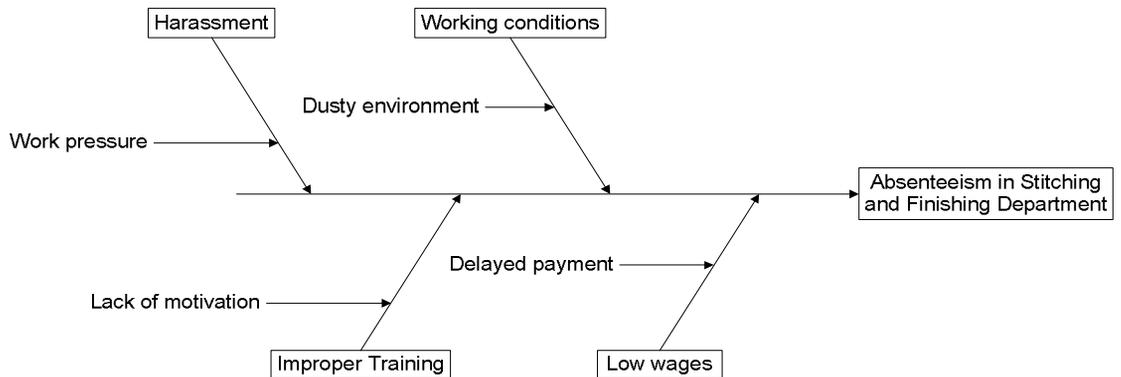


Figure.1.2: Cause and Effect Diagram-Absenteeism

Inside the stitching department, the designation wise absenteeism analysis is given in Table 1.3

Table 1.3: Absenteeism in stitching department

Sl. No	DESIGNATION	Absenteeism	% Absenteeism
1	checker	52	3.95%
2	helper	312	23.67%
3	ironer	36	2.73%
4	trimmer	8	0.61%
5	writer	14	1.06%
6	operator - a	464	35.20%
7	operator - a+	2	0.15%
8	operator - b	207	15.71%
9	operator - b+	177	13.43%
10	operator - c	41	3.11%
11	others	5	0.38%
Grand Total		1318	100.00%

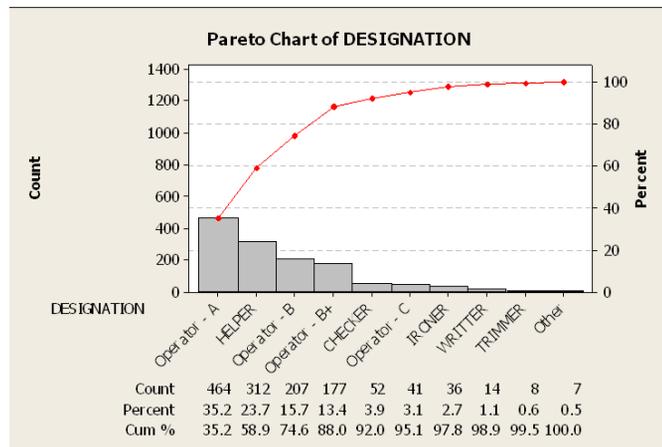


Figure.1.3: Pareto chart for designation

In stitching department, as indicated in figure 1.3 :Pareto diagram show that Operator A, Helper, Operator B & Operator B+ are major absenteeism [7,8].

The reasons for absenteeism amongst the

operators in stitching department is discussed with the employees and supervisors and the cause and effect diagram is drawn as shown in figure 1.4.

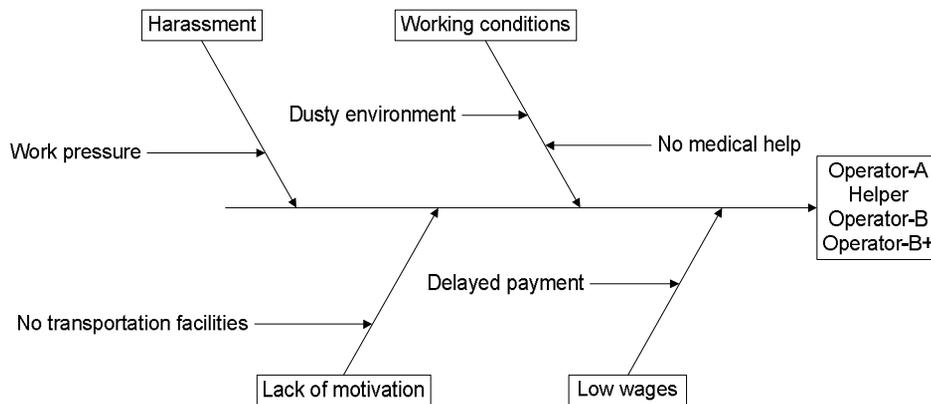


Figure.1.4: Cause and Effect Diagram- Stitching

The Absenteeism in finishing department is identified and the analysis results are given in Table .1.4

Table .1.4: Absenteeism in Finishing Department

Sl. No	DESIGNATION	Absenteeism	% Absenteeism
1	Checker	77	25.58%
2	Final checker	42	13.95%
3	Helper	25	8.31%
Sl. No	DESIGNATION	Absenteeism	% Absenteeism
4	Ironer	12	3.99%
5	K/b operator	44	14.62%
6	Marking	14	4.65%
7	Packer	71	23.59%
8	Snap operator	6	1.99%
9	Writer	10	3.32%
10	Grand total	292	100.00%

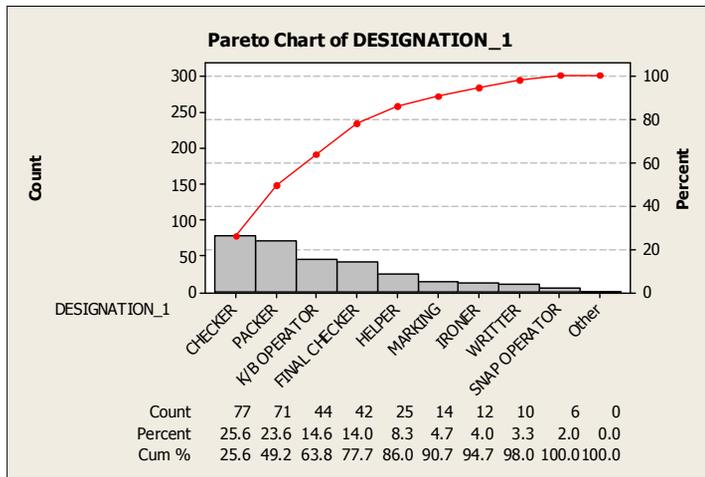


Figure.1.5: Pareto for finishing department

In the Finishing department, that Checker, packer, K/B Operator, Final Operator & Helper are major absenteeism as indicated in Figure 1.5.

The reasons for absenteeism amongst the

operators in Finishing department [9,10] is discussed with the employees and supervisors and the cause and effect diagram is drawn as shown in Figure 1.6.

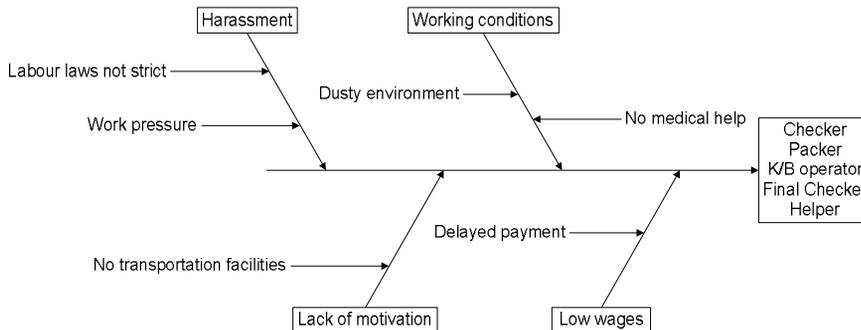


Figure 1.6: Cause and Effect diagram-Finishing department

Table 1.5: Major Contributors in departments

Sl. No	Department	Designation
1	Stitching	Operator - A
		HELPER
		Operator - B
		Operator - B+
2	Finishing	CHECKER
		PACKER
		K/B OPERATOR
		FINAL CHECKER
		HELPER

4. IMPROVE PHASE

Through discussions with the managers, supervisors and the employees, the following actions are identified for each cause. The action plans need not be individual or specific in nature rather should be considered to the whole company [11,12].

Table.1.6: Remedial action for improvement

Depart.	Design.	Actions
Stitching	operator - a	Training on machine, protective Gloves to be used
	helper	Protective gloves, masks should be used
	operator - b	Improving the working conditions, Transportation facilities
	operator - b+	Improving the working conditions, Implementing labour laws
Finishing	checker	Increase in salary
	packer	Salaries on time
	k/b operator	Training on motivation
	final checker	Incentives to the operators who exceedingly do well
	helper	Medical help

Implementation: The author conducted brainstorming sessions with the managers, supervisors and the employees. New policies, procedures and incentives are implemented [13,14].

After implementing the some of the action plans, the following data is recorded which is indicated in Table.1.7

Table 1.7: Reduced absenteeism

Period	1 Months
Total Working Days	30
Total No. of Staffs	285
Total Available Days	8550
Absenteeism	496
% Absenteeism	5.80%
Dpo	0.0580
Sigma	3.07

5. CONTROL PHASE

To reduce the employee absenteeism the following control plan is necessary and should be monitored closely by the management [15,16].

Control Plan:

- Labour laws should be implemented in letter and spirit
- Working conditions should drastically improve.
- Medical help should be provided within the plant itself.
- Pick and drop facilities should be provided for all garment employees.
- Incentives should be given by the management for star performers.
- Harassment should be brought the notice of the police.

6. CONCLUSIONS

The majority of the garment industries in India are facing productivity problems due to employee absenteeism. The results after implementing the lean six sigma methodology in Apple garments is positive and a trend setter for other garment industries to follow. The existing absenteeism of 11.05% is a true reflection of the state of affairs in the garment sector. This research work has shown that absenteeism can be really controlled with the involvement of management.

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