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CASE STUDY Open Access

PRODUCTIVITY IMPROVEMENT IN JUTE INDUSTRY: A CASE STUDY

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ABSTRACT

This research paper summarizes the views of technical and managerial staffs of Bally Jute Company Ltd to pinpoint scopes and means of productivity improvement. Critical analysis of their views facilitates in identifying major and minor areas as well as their ranking as per priority. Machine breakdown, Poor machine maintenance, idle machines, etc. are the top most areas for productivity improvement in Jute Industry. Shortage of skill manpower and lack of control of process wastage accounts loss in productivity. Absenteeism of labors, action against low producers, and poor quality of spare parts are the important areas where Top Management are required to take effective measures.

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INTRODUCTION

Jute mills are basically continuous processing industry, producing various jute products from raw jute. The working environment is very dusty due to emission of fine fibers at every stage of production. These mills use large number of machines at every production stage (total number of machines in a mill is about 700 to 2000). These are in operation for past 80-100 years, in many cases. These industries are manpower dominated, covering a large number of manpower in production units with very less numbers in maintenance operations. Based on their detailed investigations, Krishna S[1] et al. (2001), provided useful guidelines for the formulation of strategies for improvement of productivity in Indian jute industry. Apart from other activities, up-gradation of machinery maintenance was stressed. These includes not only regular replacement of worn-out parts but also regular cleaning and lubrication of the machinery. The study has revealed that a centralized system of routine cleaning and lubrication has not been effective in jute mills. Rather, the concept of Total Productive Maintenance (TPM) utilizing available manpower in maintenance department on activities requiring engineering skills, in lieu of simple maintenance operations like cleaning and lubrication alone. Some suggestion of strategies have been highlighted for implementing TPM in jute industry. Ghosh S K et al. (2006) highlighted international and national scenario of production and market share of jute goods of Indian and Bangladesh Jute Industries with particular reference to weaving production in few mills of India and Bangladesh. This research study explored the identification of possible causes/factors for low productivity in conventional hessian and sacking looms. In-depth discussion of these factors ultimately led to specific suggestions for necessary strategy, care and actions to be taken for improving the productivity. These include incorporation of appropriate technical measures, sustainable HRD activity and standardize labor productivity norms. Rani P Suseela[3 et] al, (2012) opined that provision of welfare amenities enables the workers to live a better quality life and thereby contributes to their efficiency and productivity. It helps to maintain industrial peace. Increased productivity of an industrial undertaking, indisputably, results from mental happiness of employees. The labor welfare covers a broad field and connotes a state of well-being, happiness, satisfaction, conservation and development of human

resources. The Jute Industry is one of the oldest traditional industry providing employment opportunities to huge number of population particularly unskilled and semiskilled. Industrial disputes can also be avoided to some extent if necessary provision for non-statutory welfare facilities like restrooms, lunchrooms, hygienic canteen facility, first-aid boxes, ambulance facility, etc. can be arranged. Mohiuddin MD [4] (2015) presented an in-depth study on jute industries in Bangladesh. Agro-climatic environment made Bangladesh a natural home for producing the best quality jute in the World. It has played a significant role in the economy and history of Bangladesh. Even today the decaying jute sector accounts for the third highest foreign currency earner after readymade garments and frozen foods in Bangladesh. Bangladesh controls 62% share of the total jute goods market of the world and earn Taka 20.125 billion by exporting jute goods. Bangladesh is the only exporter of raw jute. In recent year the country exported 2.4 million bales of raw jute valued at Taka 9.77million. Bangladesh's jute sector, however, faced hurdles since 1990s, as jute started to face increasing competitive pressure from synthetic substitutes, along with other related factors, i.e., failure to follow modern marketing procedure and international trade practices, lack of significant efforts and required investment towards product development and diversification, inability to undertake the technological transformation undermined jutes prospects as fiber. All these had adverse impact on production & marketing. This research paper mainly delineates with investigation for productivity improvement of Bally Jute Company Ltd based on systematic survey of the views of Technical and Managerial staffs of the organization.

Study Area

'Bally Jute Company Ltd "is situated at Bally of Howrah District, West Bengal, India. It is a pioneer Jute Industry in West Bengal, India. More than 3000 employees are directly related to day-to-day work. The unit is manufacturing Jute Bags of A Twill, B Twill, Bags of Hydro Carbon free, cloths, Jute Twine, Carpet Backing cloth, etc. The unit is ISO-9001:2008, ISO 14001, OHSAS 18001: 2007certified organization. The unit is situated close to river Ganga and Bally station.

RESULTS AND DISCUSSIONS

A systematic questionnaire survey of the Technical and Managerial staffs of Bally Jute Company Ltd was conducted. The outcome of these surveys is summarized in Table I. Table I reveals 40 areas of concerns which need to be considered for the improvement of productivity. It Out of these factors, mechanical breakdown causing machine idling (Sl No 2), Wastage of raw material, semi-finished product and proper utilization manpower at work place (Sl No 3) and shortage of skill manpower for production and Maintenance work (Sl No 6) seem to be very important as reflected by the survey. Thus quality of raw jute, yarn, semi-finished products, shortage and inferior quality of spare parts, absenteeism, regular cleaning and maintenance of the machines demand immediate attention for improvement of productivity in jute industry. The outcome of the survey investigation was further strengthened by the personal discussion/interaction with different departments of the Jute industry. the findings of the discussion/interaction are summarized below:

- Shortage of workers in every department are very serious and needs to be filled up along with lucrative incentives schemes for their retention.
- Appropriate floor planning/equipment layout, cleanliness of working area, up-gradation of maintenance work, availability of space, sufficient stock of spare parts, replacement of old machinery with modern machinery, appropriate roof ceiling, drainage system, etc. are paramount importance for achieving desired productivity.
- Sufficient and adequate storage condition for finished goods, provision of sufficient light and firefighting equipment in godowns, maintenance of appropriate roof with leak proof condition of the warehouse, are also equally important in this respect. At the same time, it is necessary to maintain/check morah weight in every shift and feeding of rah at spreader machine on regular manner.

According appropriate ranking for the areas of action/control required for productivity improvement in Jute Industry are evaluated as shown in Fig 1 and Table II. From Table II, it is evident that machine breakdown/idle machine/idle spindles/ poor maintenance achieved first ranking and naturally demands highest priority in the quest of productivity improvement. Top management and maintenance department have to develop suitable plan in this respect and implement the same in true sense. Shortage of skill manpower in both production and Maintenance units, having second ranking, also needs proper attention. Personal Department and Human Resource Department have important role to play in this respect. Recruitment of new manpower and their appropriate training and development are quite essential. Provision of proper pay package and lucrative incentives are also equally important for their retention. Again process wastage control/ raw material wastage control, etc. in day-to-day activities are very important. Day-to-day monitoring of wastage, wastage control, target of wastage selection, identification of suitable route for controlling such areas, regular counseling/seminars and discussion with the workmen, target of wastage selection, finding suitable route for controlling such areas are the important points for development of productivity in jute industry. Similarly, cleaning of machines, department and housekeeping need to be an integral part of day to day activities at work place of jute industry.

Shortage, non-availability, poor quality of spare parts also seem to be an important point and demand appropriate actions for rectification, e.g. to keep buffer stocks of highly required items, necessary items, inspection activities of purchased items at store dept by qualified mechanics, fitters, checking the technical specifications of the spare parts, return of defective purchased items with feedback report, suppliers evolution, etc. are the important guideline to improve overall situation. Besides these major concerns, questionnaire survey also reveals other concerns. These are minor no doubt but their importance cannot be overruled. Table III displays the minor areas which need to be augmented for overall productivity improvement. Out of the 20 points identified by the survey, reduction of overtime, poor supervision of staffs , long tiffin and labors away from workplace, late coming and early departure from workplace and poor team spirits are very important and require due consideration in urgent manner.

Table 1. Summarized results of the views of Questionnaire Survey

Sl.No	Areas need to be considered for Improvement	Number of Staffs given their concern	% of Total	SlNo .	Areas need to be considered for Improvement	Number of Staffs given their concern	% of Total
01	Absenteeism of Labour	11	2.66	21	Reduction of NC Products	6	1.44
02	Mechanical Breakdown/ Idle machine/Machine Maintenance	67	16.22	22	Late coming & early departure from Work Place	1	0.24
03	Waste Control/ Raw Material/ Wastage of Manpower	38	9.2	23	Requirement of New Labour	4	0.96
04	Raw Jute/ Quality of Yarn/ Quality of Semi Finished Products	32	7.74	24	Workers involvement/ suggestion for betterment	1	0.24
05	Shortage of spare Parts at Stores/ Quality of Spare Parts	23	5.56	25	Bio metric system of Attendance	1	0.24
06	Shortage of Skill manpower (Production &Maintenance)	38	9.2	26	Machine handover at running condition during shift change	1	0.24
07	Cleaning of Machines And Departments	28	6.77	27	Defective Full bobbin	1	0.24
08	Non Availability of Accessories (Fork Lift, Trolley)	8	1.93	28	Bags/ Cloth used outside	1	0.24
09	Labours are away From work place / Tiffin time	6	1.45	29	Team spirit improvement	5	1.21
10	Poor Floor condition/ Insufficient floor area	9	2.17	30	Poor discipline/ good relationship requirement	13	3.14
11	Overtime related Issue	4	0.96	31	Regular counselling of workmen	1	0.24
12	Cooperation of maintenance department	10	2.42	32	IT related Memo System	1	0.24
13	Contract Labour/ outside labour related issue	8	1.93	33	Control firing incidents at machine	4	0.96
14	Reduction of hands/ Work force	13	3.14	34	Technology Adaption	8	1.93
15	Action against Low Producer	11	2.66	35	Conservation of Energy	4	0.96
16	Motivation Programme for Work men	11	2.66	36	R & D	1	0.24
17	Miss use of Stationary	1	0.24	37	Security related	4	0.96
18	Sliver wastage/Shortage	11	2.66	38	Communication	11	2.66
19	Doffing Loss/ Doffing Time	10	2.42	39	Better supervision	1	0.24
20	Piecing rate /Ends Down related issue	4	0.96	40	Lucrative Incentive System	1	0.24

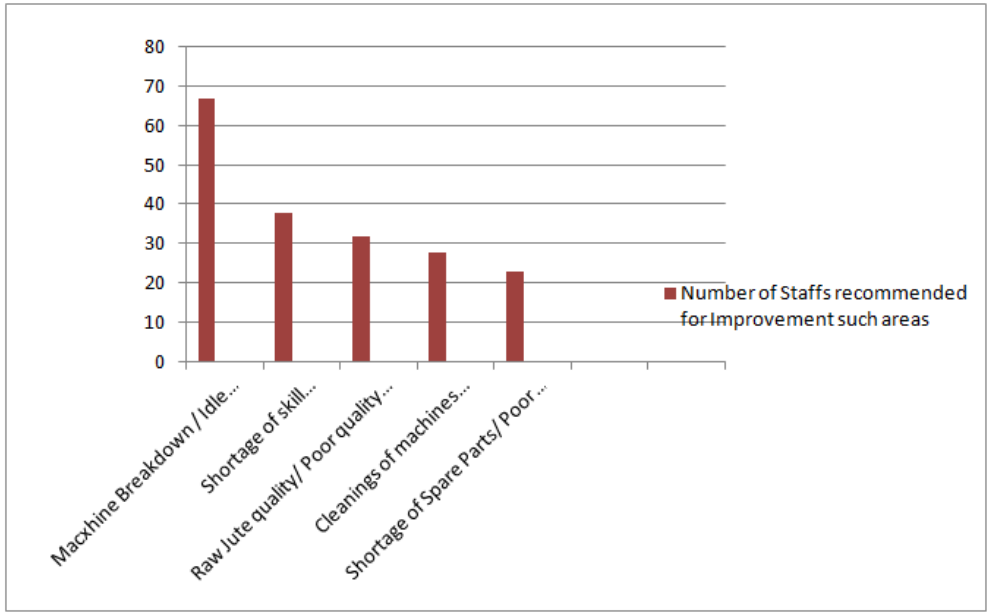

Fig 1. Major areas of action/control required for productivity improvement in Jute Industry

Table 2. Major areas for productivity improvement in Jute Industry and their ranking

Sl No	Areas to be considered for improvement	Number of Employees Recommended	Rank	Sl No	Areas to be considered for improvement	Number of Employees Recommended	Rank
01	Mechanical Breakdown/Idle machine/Spindle/poor machine maintenance	67	01	10	Action against Low producers	11	07
02	Shortage of skill manpower both Production and Maintenance areas	38	02	11	Motivation programmed of Workers	11	07
03	Process Wastage control/Raw material wastage control/ Wastage of Hands..	38	02	12	Sliver wastage/ Shortage.	11	07
04	Raw Jute quality/quality of Yarn Improvement/Poor quality of semi finished products	32	03	13	Poor communication between staffs /labours.	11	07
05	Cleaning of machines/ Department/ Housekeeping	28	04	14	Poor cooperation of maintenance department.	10	08
06	Shortage of spare parts of stores/ poor quality of spare parts	23	05	15	Doffing loss/ High doffing time.	10	08
07	Poor discipline/ Poor relationships between employees	13	06	16	Poor floor condition/ Insufficient floor space	9	09
08	Reduction of Hands	13	06	17	New Technology adaption/Modernization of Machineries	8	10
09	Absenteeism of Labour	11	07	18	Poor performance of outsider/ contract labour	8	10

Source; Primary date collected during survey at industry

Table 3. Minor Areas to be considered for Improvement in productivity

Sl No	Recommended area for Improvement	Sl No	Recommended area for Improvement
1	Labours are away from Work Place /High Tiffin Time	11	Biometric system of attendance of labours
2	Conservation of Power/Energy	12	Machine handover at running conditions during shift change
3	Reduction of Overtime work	13	Defective full bobbins / Thin bobbins
4	Research and Development Activities	14	Yarn/Bags /cloths used other purpose at work place /at workplace/ outside department
5	Poor security Conditions	15	Poor Team Spirit
6	Poor Supervisions	16	Late coming & early departure from work place of labours
7	Lucrative Incentives scheme	17	Regular counselling of Workmen
8	Miss- use of Stationary	18	IT application and Memo system distribution/application
9	Poor piecing Rate / High Ends down at spinning frame	19	Control fire at machines
10	New labour appointment	20	Reduction of NC products

Action plan by top Management

Based on group discussion, brainstorming session of all Management and Supervisory staffsof Bally Jute Company Ltd, following action plans has been recommended:

- Timely attainment of Line fitter, Analysis of MTBF & MTTR.
- Timely availability of stores spares parts.
- Optimization of delivery speed, RPM. of Machines.
- Monitoring of man & machines efficiency, keeping in mind man & machine Ratio.
- Timely engagement of workmen after regular coordination with respective departmental staffs.
- Issue of warning letter to low producers after adequate enquiry.
- Introducing reward system to efficient workmen periodically.
- Maintain required humidity and temperature in spinning, Weaving and Finishing department.
- Improved supervision.
- Timely overhauling machines and various machinery maintenance.
- Proper planning in maintenance, preparing budget and good quality of store material, reduction of maintenance cost.
- All staff members should try to reduce power consumption wherever possible.

Conclusion

This research paper summarizes the views of technical and managerial staffs of Bally Jute Company Ltd to pinpoint scopes and means of productivity improvement.

Constant observation and necessary corrective measures by top management are essential at this moment to deliver Jute goods to the customers at right time, right quantity and right quality at right places. In this connection, major and minor factors, their ranking as per priority have been identified. Accordingly, appropriate action plans have been devised.

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