

# **Productivity Gainsharing Incentive Scheme for a Spinning Mill Industry**

**Harikrishnan R P, Pradeep Kumar P**

Department of Mechanical Engineering, Rajiv Gandhi Institute of Technology, Kottayam, Kerala, India

Assistant Professor, Department of Mechanical Engineering, Rajiv Gandhi Institute of Technology, Kottayam, Kerala, India

## **Abstract**

Absenteeism is a serious workplace problem and an expensive occurrence for both employers and employees seemingly unpredictable in nature. The term absenteeism refers to the failure to attend to work. It is one of the major problems faced by companies across the globe today. Unscheduled absenteeism badly hurts the progress of an organization resulting in loss of productivity, increased costs in hiring additional staff and low morale among the workers. Absenteeism affects the efficiency, productivity and discipline of an organization. It not only shows the irresponsibility of the employee but also their disloyalty towards the organization. Absenteeism reduces the satisfaction level of the employee and makes him unsecured about his job in the organization. This paper focus on absenteeism as a threat to the organization as it reduces the employee satisfaction and the ways to manage absenteeism in the Spinning Mill industry in order to improve the productivity of the organization. A productivity gainsharing incentive scheme is proposed to the industry to improve satisfaction level of employees and reduce absenteeism.

Keywords - absenteeism, job satisfaction, productivity, incentives, gainsharing

## **1.INTRODUCTION**

The paper titled “Productivity Gainsharing Incentive Scheme for a Spinning Mill Industry” is aimed at maximizing the productivity of a public sector spinning industry under the government of Kerala, and to advice an efficient crew incentive scheme, so as to boost the financial performance of the firm, which is under financial stress over the past years.

Human resources are the most precious assets of any institution. They are the corner stone of any working place. The effectiveness of an institution to maintain a quality team of employees links to its ability to manage the staff as well as recognize the contributions of each individual. Motivation is such a factor that exerts a driving force on our actions and work. A highly motivated team of employees helps in achieving the targets of an organization or institution. When goals are aligned, institutions are better able to compete with the competitors, and morale is also higher when employees are properly motivated.

Workplace attendance and absenteeism are of fundamental importance to industrialised society. Primarily, this appears most directly to affect those in industry as a cost of production, yet lost productivity also affects the whole economy and society directly and indirectly. It adds to the cost, or may reduce the quality, of public and private goods and services. At the workplace, it may place additional burdens on employers and workers especially at critically important times, or in key processes.

This complexity would appear to make it a difficult problem to understand and manage and should serve as a caution against generalisation. Yet there are some simple concepts and basic principles which can assist employers, workers and their organisations in understanding the causes and applying solutions. Employee attendance should not be viewed in isolation from the workplace or the work environment. Collateral workplace indicators, such as employee turnover, workers compensation claims rate and industrial disputation, can assist in forming a comprehensive picture. Absenteeism, work delays and productivity decline are often the first signs of something wrong in the workplace, and may precede events such as accidents and injury. These first signs should receive more attention by occupational health and safety professionals and management

Absenteeism is a common problem in many industrial units, small or big, private or Government. The high rate of absenteeism is at times due to lack of commitment to work. Absenteeism results in dislocation of work increase in labor costs, reduction in productivity and if unchecked, it causes an increase in indiscipline.

Although some amount of absent will always be inevitable, most of it can be avoided. Largely, the rate of absenteeism is a gauge of employees moral, both in the company as a whole and for specific individuals; therefore, employees and human resource professionals should be concerned when absence suddenly increases in length and/or frequency and they have to take whatever steps are necessary to alleviate the problem.

The term absenteeism refers to failure to report to work. The definition itself tells the failure of the organization process if the employee fails to follow the rules and standards of the organization. Absenteeism is a type of unscheduled activity which threatens the organization to fall in danger as it leads to the disruption of the daily process.

## **2.LITERATURE SURVEY**

The literature review will endeavour to provide a theoretical body of knowledge related to the two variables of the present study, namely absenteeism and job satisfaction. This section deals with a brief review of researches conducted in the area of Job satisfaction and incentive schemes in order to identify the approach and tool to be adopted in the work.

Job satisfaction refers to the individual matching of personal needs to the perceived potential of the occupation for satisfying those needs while Price defined it in terms of the affective orientation that an employee has towards his or her work [4]. Extensive research has been conducted to measure and predict Job satisfaction [3]. According to different researches organizational commitment, which is the prime area of interest for many researchers, can be influenced affirmatively by job satisfaction [6]

It has been noticed that there is a disparity between pay structures of the younger and experienced employees. Research has shown that most young workers are satisfied with the salary they have, but experienced workers are not paid according to their functions so the wage structures require further attention [2]. This disparity does not bring good results for the organizations. Intensity of job satisfaction depends on the discrepancy of expectations of person, what he or she wants and what he or she gains[4]. Job satisfaction is an extent to which employee feels positively or negatively about different aspects of job e.g. job conditions, timing, structure, compensation, tasks, and relationship with co-workers and responsibilities ([5]. Employees satisfaction results in pleasant environment in an organization [3]. Pay is

thought to be a key factor behind job satisfaction besides promotion, recognition, job involvement and commitment. Job satisfaction is a feeling of an employee about his job [7]. The management should give priority to its human resources who play a vital role to give a competitive edge to the organization [1]. Job attachment, dedication and willingness are the key factors that provide satisfaction [3]. Employees or teachers may be considered as dissatisfied with their jobs if they remain absent and friction to the job of teaching [6]. The teachers are more content with communities that are less distant and having better economic and social possession. The work itself or the quality of supervision may also contribute towards the job satisfaction. The working conditions at school contribute to the satisfaction of teachers. They are happy with good pay, big schools where they have the chance of professional growth, where there is not much workload and where they get the administration support [4]. No work is good or bad; it is the way the employee perceives it. The job itself is neither fascinating nor uninteresting but the relationship makes it fascinating or otherwise [2]. In the opinion of [3] “Absenteeism is the ratio of the number of production man-days or shifts lost to the total number of production scheduled to work”.

### 3. PROBLEM DESCRIPTION & METHODOLOGY

#### 3.1 Introduction

This work, as already told, is based on a study of the absenteeism of employees in Trivandrum Spinning Mill over the past some months. The rate of absenteeism among operators and mixing works in the company was high. So, in order to understand the major issues faced by the firm, it is necessary to conduct a study on absenteeism rate in the company. This is done in the first section of this chapter.

For this research study a descriptive research design was used the factors that are affecting the employees in work environment and job satisfaction is studies and the findings were described in detail. The statistical tools like chi-square test were applied for data analysis. Descriptive statistics like tables, frequencies and percentages was used for the purpose of analysis. The objective of this research is to identify the reasons of absenteeism in company. Employees can be absent for a variety of reasons including sickness, lethargic attitude, family emergencies, too much workload and stress, monotonous work or a general dissatisfaction with the job.

#### 3.2 Absenteeism rate

From the secondary data obtained from the company it is noted that absenteeism rate of employees in the company was high. Among that rate of absenteeism of operators are higher than that of mixing workers and administrative workers.

Formula for absenteeism rate

$$A = B / C \quad (1)$$

Where;

A = Absenteeism rate for the period

B = Total number of man days lost due to absenteeism in the period

C = Total number of working man days available in the period

And where:

$$C = D \times E \quad (2)$$

D = Total employees planned to work in the period

E = Number of available working days in the period

The rate of absenteeism among mixing workers of the company. The data obtained from company records. Unauthorized absence cause problem in work force allocation in the plant and it directly affected production. Even though absenteeism rate in Kerala state is 6.8%, the rate at TSM was very high. The rate of absenteeism among mixing workers is 13.23% and among operators is 18.9%. This high rate of absenteeism is directly affected the production process.

### 3.3 Analysis of production

From the figure 3.1 it is clear that absenteeism directly affected the production in the plant. If the employees are attending their regular duties without fail it surely improves the production in the plant. That helps to perform better in the competitive field. The Spinning Mill industry is a highly competitive industry in India. World second cotton and products manufacturer is India itself. So it is important to the company to perform well to improve output.

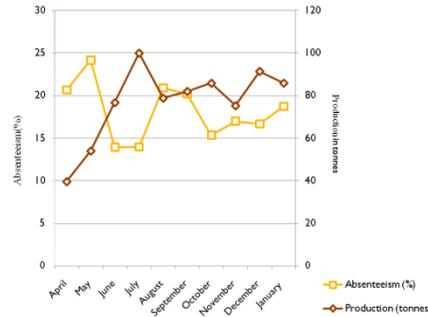


Fig 3.1 Production Vs absenteeism (Performance analysis)

### 3.4 Present System

The present condition of Trivandrum spinning mills is that there is no incentive provided by the company. Employee's level of satisfaction is very low. They are not satisfied with the monetary policies that are followed by the company. Moreover, the financial position of the company was too poor in the last few years.

### 3.5 Problem definition

During the initial survey, it is noted that absenteeism was one of the major issues faced by the company. Most of the employees fail to attend their regular duties without proper approval and prior sanction of leave. Unauthorized absence causes a problem in work force allocation in the plant and it directly affects production. So it is necessary to find the factors affecting job satisfaction.

### 3.6 Sampling techniques

In this research study, simple random sampling technique was used to select respondents needed for the study.

#### a) Data collection method

Both primary and secondary sources of data were used. The primary data was collected through the use of questionnaires while the secondary data was gathered from textbooks, articles, and journals. The questionnaire was used in collecting data on questions relating to the impact of job satisfaction on absenteeism.

#### b) Questionnaire method

The researcher used a questionnaire, which was self-developed so as to measure the job satisfaction of the employees in the organization. A questionnaire to be used must be prepared very carefully so that it may prove to be effective in collecting the relevant information. The questionnaire consisted in the main of self-rated, non-comparative single-item rating scales used to assess respondents' level of agreement or disagreement with statements relating to the benefits and disadvantages of absences and presences, to their satisfaction with standard features and to the difficulty of choice between many alternative models. All items in the questionnaire are extracted from previous literature. This questionnaire is based on a 5-point Likert scale. The questionnaire is designed on the basis of previous literature and study related to labour absenteeism and job satisfaction.

c) Statistical tools used

The data collected were carefully analyzed & interpreted by statistical technology. Chi- Square test is applied to draw meaningful references. A chi-square distribution Method is used for judging the significant difference between observed and expected Frequencies. As a non-parametric test, it can be used to determine if categorical data Shows dependency or the two classifications are independent. Questionnaire were analyzed using SPSS 15.0

#### 4. DATA ANALYSIS AND INTERPRETATION

The analysis is done based on the information taken from the questionnaire survey. In the Likert scale, the values 1, 2, 3, 4, and 5 are taken as ‘Strongly disagree’, ‘Disagree’, ‘Neutral’, ‘Agree’, and ‘Strongly agree’ respectively. The value 3 is neutral. This means that the mean score of value 3 indicates no effect of variable. The mean score more than 3 means a positive effect of the variable. But the mean score less than 3 means a negative effect of the variable.

##### 4.1 Reliability test

As primary data in the survey, the reliabilities of work motivation and job satisfaction of employees are tested with eight scale items each separately. The variables and their values of Cronbach's alpha are given in Table 5.1.

TABLE 5.1: CRONBACH'S ALPHA CALCULATION

<b>Cronbach's Alpha</b>	<b>No of item</b>
.743	8

The value 0.743 is considered as acceptable reliability. Various data analysis and reliability analysis of data collected (Cronbach's alpha) was done using SPSS (Statistical Package for Social Sciences) Software.

##### 4.2 Data Analysis

Data analysis was done to determine how the units covered in the research project respond to the items under investigation. Descriptive statistics, Pearson product moment correlation and multiple regression methods were employed to analyze the collected data. Figures obtained from SPSS 15.0 were interpreted to come at conclusion and implications.

##### 4.3 Descriptive Statistics

Descriptive statistics were used to determine the central tendency of the data and trend of the variables. The outcome explained the intensity of Job satisfaction, considering 8 factors for the point of view of employees working. Results showed that employees are dissatisfied in pay scale and benefits provided by the company. Table below contains data about tendency for the predicting and criterion variables:

TABLE 4.7. DESCRIPTIVE STATISTICS

	Mean	Std. Deviation	N
Co worker	3.3125	.624220	48
Supervision	3.2292	.66010	48
Communication	3.0000	.82514	48
Promotion	2.9583	.74258	48
Nature of work	2.8958	.69158	48
Operating conditions	2.7500	.66844	48
Pay	2.3542	.75764	48
Benefits	2.0417	.68287	48

The mean score of value 3 indicates no effect of variable. The mean score more than 3 means a positive effect of the variable. But the mean score less than 3 means a negative effect of the variable. From the descriptive statistics it is clear that promotion mean=2.9583), nature of work (mean=2.8958), operating condition (mean=2.75), pay (mean=2.3542) and benefits (mean=2.0417) having the mean value less than 3. Therefore these factors are most dissatisfying factors. Among that pay and benefits score very low mean. That indicate those two factors cause most dissatisfaction in employees. Mean value obtained from survey is 2.0417 for fringe benefits of S.D 0.6828 and 2.3542 for current pay scheme of S.D 0.7576. These dissatisfying factors lead employees to absenteeism. In order to find how likely these two variables are associated with job satisfaction, chi square test were conducted.

#### 4.4 Chi-square test

##### Test of Hypotheses

Saunders et al. (2009), contend that Chi-Square test enables a researcher to find out how likely it is that two variables are associated. The study sought to establish the association between pay scale and benefits with job satisfaction in Trivandrum Spinning Mills Ltd. Pearson Chi-Square test was used to test whether there is any significant association between the variables. This test was performed on the null hypothesis that there exists no association between pay scale, benefits with job satisfaction in Trivandrum Spinning Mills Ltd. against an alternate hypothesis that there exists an association between employee rewards, job satisfaction, and human resource policies with employee retention in Trivandrum Spinning Mills Ltd. The chi-square statistic was computed using the formula below.

$$\chi^2 = \sum_{i=1}^K \frac{(O_i - E_i)^2}{E_i} \quad (3)$$

Where;  $\chi^2$  is the chi-square statistic value with df 3;  $O_i$  is the observed value;  $E_i$  is the expected value. The test was performed using SPSS computer software where the level of significance was set at 0.05 (5%).

The chi-square statistic for the association between job satisfaction and benefits, the hypothesis taken are follows

H0: there is no association between benefits and job satisfaction

H1: there is association between benefits and job satisfaction

TABLE 4.8: PEARSON CHI-SQUARE TEST FOR BENEFITS.

	Observed N	Expected N	Residual
Highly dissatisfied	7	12.0	-5.0
Dissatisfied	35	12.0	23.0
Normal	3	12.0	-9.0
Satisfied	3	12.0	-9.0
Total	48		

The chi-square statistic for the association between job satisfaction and pay, the hypothesis taken are follows

H0: there is no association between pay and job satisfaction

H1: there is association between pay and job satisfaction

TABLE 4.9: CHI-SQUARE TEST FOR PAY STRUCTURE

	Observed N	Expected N	Residual
Highly dissatisfied	6	12.0	-6.0
Dissatisfied	21	12.0	9.0
Normal	19	12.0	7.0
Satisfied	2	12.0	-10.0
Total	48		

The findings presented in table shows that the chi-square statistic for benefits and pay scale policies were 59.667 and 22.167 respectively which were all statistically significant at 0.05 ( $P < 0.05$ ). This led to rejecting the null hypotheses and accepting the alternate hypotheses that there exists an association between pay scale and incentives with job satisfaction in Trivandrum Spinning Mills Ltd These associations explain a direct connection between these variable. It also means that with an improvement in the reward systems, increasing the aspect of the job to make it more satisfying and implementing strategic human resource policies, an organisation can significantly boast the retention of its employees. The employees are satisfied more if better compensation are given and that help to reduce absenteeism rate. The following are the effect of job satisfaction on employee performance.

They are

- High Productivity
- Turn Over
- Less Absenteeism.

## 5. FINDINGS AND RECOMMENDATIONS

### 5.1 Findings

1. By conducting detailed study on the duty allocated to employees, rate of absenteeism of the employees were found out. It has been found out that absenteeism rate were high.

2. By analyzing the production and absenteeism, it is found that there is positive relationship between production and absenteeism rate in Trivandrum Spinning Mill.

3. Conduct a questionnaire survey to find out job satisfaction level of employees. It has been found out that the employees are dissatisfied towards current monetary and nonmonetary incentive schemes followed by the company.
4. Fringe benefits and pay are the most dissatisfying factors that are obtained from the result of questionnaire survey conducted and result analysis using SPSS.
5. Chi-square test was conducted to found out the association between pay and benefits towards job satisfaction. It is obtained that there is positive association between job satisfaction and fringe benefits.

## 5.2 Recommendation

### a) Introduction to Productivity Gainsharing

Need for Productivity Gainsharing In today's highly competitive environment, organisations need to manage productivity well for survival and growth. Employees play a critical role in productivity improvement. Establishing a structure to reward and motivate them is part of a good productivity management system. A portion of the wealth generated by the organisation should be distributed back to the employees as a productivity incentive. There are various productivity incentive schemes. Productivity gainsharing is one of them. When successfully applied, productivity gainsharing reinforces teamwork. It also creates an environment for sustained and continuous improvements

In order to motivate employees and made them to attend their regular duties, a productivity gainsharing incentive scheme were recommended.

Productivity gainsharing is the distribution of the wealth generated as a result of productivity improvement between the organisation and its employees. Gainsharing provides various opportunities for the employees. They can participate in and contribute to organisational improvements.

Objectives of productivity gainsharing incentive are scheme

- Productivity improvement
- Quality enhancement
- Promotion of teamwork

### b) Productivity Gainsharing Models for spinning mill

For the productivity improvement a productivity gainsharing model that recommended to Trivandrum Spinning Mills based on Scanlon plan. Absenteeism is one of the major issue that faced by company. So attendance factor is also included to the recommended productivity gainsharing model so that the benefits of improved productivity fully get to those employees who attend regular duty. By adding attendance factor with the proposed model helps to restrict the benefits of incentive to ineligible employee Incentive = (Labour cost-to-sales ratio\*sales – wages and salaries already paid)\*(1- reserve ratio)\*(no .of days attend duty/ total no .of duty days)

#### Steps

Step 1: Determine an average labour cost-to-sales ratio Labour cost-to-sales ratio = (saleries,wages,benifites) / sales

Labour cost-to-sales ratio was determined based on historical data.

Step 2: Calculate amount of theoretical wages and salaries to be paid. It is obtained from (labour cost-to-sales ratio \*sales)

Here sales means sales of current month/year

Step 3 : Subtract the actual amount of wages and salaries paid

This will determine the amount of labour costs saved as a result of higher productivity. The amount saved will form the bonus fund available for distribution.

Step 4 : Determine the “reserve ratio”.

The percentage of the bonus fund to set aside as a reserve – so that some bonus could still be paid out even in a recession.

Step 5 : Multiply the amount of bonus fund computed under Step 3 by “1 – Reserve ratio”, to arrive at the amount to be distributed between the organisation and the employees.

Step 6 : Multiply attendance benefit to each employees benefit to calculate individual’s incentive

Attendance factor = (no .of days attend duty/ total no .of duty days)

By adding attendance factor with the proposed model helps to restrict the benefits of incentive to ineligible employee

### c) Incentive distribution

In the company for one day there are 72 employees on roll for three shifts. Among 72 employees 3 supervisors and 69 operators and mixing workers are allocated. Supervisor paid double the salary. So total incentive is distributed between employees and supervisors in the ratio 23:2.

The obtained incentive is distributed as 92 % to workmen and 8 % to supervisors

For workmen,

Incentive =  $0.92 * (\text{Labour cost-to-sales ratio} * \text{sales} - \text{wages and salaries already paid}) * (1 - \text{reserve ratio}) * (\text{no .of days attend duty} / \text{total no .of duty days})$

For supervisors,

Incentive =  $0.08 * ((\text{Labour cost-to-sales ratio} * \text{sales} - \text{wages and salaries already paid}) * (1 - \text{reserve ratio}) * (\text{no .of days attend duty} / \text{total no .of duty days}))$

These helps to improve their job satisfaction level and that help them to attend regular duty without fail.

## VI CONCLUSION

Present scenario of Trivandrum Spinning Mills is studied and identified that Absenteeism is one of the major issue that face organization. Job satisfaction of employees in the Trivandrum Spinning Mills was studied and it is observed the pay structure and benefits are the factors that most dissatisfied the employees in the company. A productivity based incentive scheme was recommended to the company that may help to improve the productivity and reduce absenteeism rate. Proposed incentive scheme ensures benefits to the employee if the productivity improved and absenteeism is reduced.

### A. Limitations of the study

The major limitations identified in the work are

1. Questionnaire method was used which may be supported with focus group discussion, interviews and panel discussion to come at more concrete results. Bias may occur by the respondents reply.
2. Absenteeism is the issue that related to individual perception. That may or may not affect personal as well as organizational factors.
3. Proposed model is based on the questionnaire survey analysis result. It may or may not reduce absenteeism rate in the company. The effect of incentive scheme only gets to the employees if productivity improves.

### B. Future scope

The project was mainly confined to the absenteeism of a public sector spinning mill in Kerala .This can be extended to other spinning mill industries of Kerala. The results of the study can be applied

to analysing the absenteeism and job satisfaction of any similar companies, and implementation of proposed model to industries and after implementation analysis are to be considered as the major scope this work.

## REFERENCES

- [1] Dr.R.Anitha “A study on job satisfaction of paper mill employees with special reference to udumalpet and palani taluk” Journal of Management and Science Vol.1, No.1 (Sep’2011)
- [2] C.Swarnalatha and G.Sureshkrishna“Absenteeism – a menace to organization in building job satisfaction among employees in automotive industries in India” Tactful Management Research Journal, vol. 1 , issue. 4 , jan 2013
- [3] M.Prabhu “A Study in a Steel Organisation on Employees Absenteeism”, Indian Journal of Economics and Development ,Vol: 1 | Issue: 3 | March 2013
- [4] Mosammod Mahamuda Parvin and M M Nurul Kabir “Factors affecting employee job satisfaction of pharmaceutical sector “Australian Journal of Business and Management Research Vol.1 No.9 [113-123] | December-2011
- [5] Obasan Kehinde, A“Impact of Job Satisfaction on Absenteeism:A Correlative Study” European Journal of Humanities and Social Sciences , Volume 1, No. 1 (2011)
- [6] Kshitija Dixit and Rupayan Pal,(2010) “Group Incentives and Performance of Small Firms,” Gokhale Institute of Politics and Economics, India
- [7] Parismita Chetia, C.K.Gogoi,”Work commitment and absenteeism among the industrial Workers: a sociological study of two industries of Namrup, assam.” International Journal for Basic Sciences and Social Sciences (IJBSS) ISSN: 2319-2968 Vol.1, Issue 3, November-2012 Page: 93-98.