Study on Motivational Factors of Civil Construction Site Employees

Prakash Rao B.1, Jaya Prakash S.2

Abstract— The purpose of this study was to identify and investigate the factors linked to employee motivation and job satisfaction of employees and to assess the role of work motivation on employees’ performance. The self-report questionnaire survey was carried out for a total of 59 engineers in Construction site at various capacities. The responses were formulated based on the Likert scale. The Statistical Package for the Social Sciences (SPSS) version 19.0 was used for all statistical analysis. Furthermore, Cross Tabs was employed to determine whether there is a difference in the motivation dimensions based on biological factors. Descriptive statistics were made for job satisfaction factors, workplace conditions, dimension of decision making, compensation (payment), recognition and benefits, promotion and perceived organizational support. Five hypothesis were formulated and tested. ‘Perceived organizational support’ was found to be the main motivating factor for engineering department. Based on the analysis made, ‘Payment aspects’ especially sub factor ‘extra work done is not rewarded’ is the major de-motivating factor.

Keywords— Hypothesis, Likert, Motivation, Statistics,

I. INTRODUCTION

At one time, employees were considered just another input into the production of goods and services. What perhaps changed this way of thinking about employees was research, referred to as the Hawthorne Studies conducted by Elton Mayo from 1924 to 1932 [9]. This study found employees are not motivated solely by money and employee behavior is linked to their attitudes [9]. The Hawthorne Studies began the human relations approach to management, whereby the needs and motivation of employees become the primary focus of managers [2]. For example, research suggests that as employees' income increases, money becomes less of a motivator [5]. Also, as employees get older, interesting work becomes more of a motivator.

For the purpose of this research, construction sites in Bangalore, India were selected. A set of questionnaire was prepared for the employees. Employees from junior level to assistant general manager were considered for the research. A Questionnaire was prepared and the survey was carried for a total of 75 employees in construction site. Only 59 correctly filled questionnaires were used for the analysis. Thus the total population N=59.

A non-probability sampling design, namely, convenience sampling was used to draw the sample. Convenience sampling involves collecting information from members of the population who are most easily accessible and conveniently available to provide the required information. The rationale for using this method is that it is convenient and quick. The disadvantage however, is that the properties of the sample are likely to under or overestimate the true population values. The data was gathered by means of self-report questionnaires. Self-evaluation questionnaires are usually quantified; it is easier to compare the scores of different individuals. The analysis of questionnaires is easy due to the structured information in the questionnaire. However, main problems experienced using questionnaires involve poor levels of response and the limitation of not being able to test the given responses for accuracy.

II. LITERATURE REVIEW

Motivation is operationally defined as the inner force that drives individuals to accomplish personal and organizational goals. “Reference [1] distinguishes between the terms ‘movement’ and ‘motivation’. When a person carries out a task just for the sake of being remunerated, the person is moved rather than motivated”. Research conducted by [8] has proven that employees who get recognized tend to have higher self-esteem, more confidence, more willingness to take on new challenges and more eagerness to be innovative, however results need to be interpreted with caution since a convenience sample was used, thereby restricting the generalizability to the wider population. “Reference [3] shows that the job stability occupies the first place in employee preferences followed by job type and wage offer. The results of the study do confirm the assumption that money is not everything in terms of work motivation suggesting that managers need to focus more on non-financial incentives to better motivate employees”. Research by [7] finds monetary and non-monetary incentives schemes had a great impact on employee motivation. Designation and background of employee did not have significant impact on employees’ motivation. Whereas [6] notes that pay is not equally important in all situations or to all individuals, and identify circumstances under which pay is likely to be more (or less) important to employees. “Reference
Reference [4] suggests that managers must realize that employee motivation and its process are there to motivate their employees; therefore, employee input must be valued and included throughout this process.

III. METHODOLOGY

The methodology adopted in this research is summarized as follows.

Questionnaire

Questionnaire framed consisted of two parts

Part ‘A’ was regarding the demographic factors like age, gender, marital status, type of job, years employed at the organization, educational level, native state and language spoken.

In Part ‘B’ respondents were asked to give their opinion on overall job satisfaction, workplace conditions, decision making factors, payment aspects, recognition and benefits, promotion policy and perceived organizational support.

The responses were formulated based on the Likert scale.

1= Strongly Disagree, 2= Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree.

Data Analysis

The collected data were analysed to find out the most significant rank of motivational factors. The personal background in Part A was calculated as percentages. Each item in Part B of the questionnaire was individually rated through a scale of 1-5 (5 was the highest scale rating, while 1 was the lowest scale rating). The motivational factors which were in the highest scale rating were held to be the most significant motivational factors, and they were calculated into percentage based on the frequency of respondents.

Statistical Techniques

The Statistical Package for the Social Sciences (SPSS) version 19.0 was used for all statistical calculations. CROSS TABS was employed to determine whether there is a difference in the motivation dimensions based on biographical factors gender, age etc.

Cross Tabulation

The formal statistical procedure for performing a hypothesis test is to state two hypotheses and to use an appropriate statistical test to reject one of the hypotheses and therefore accept (or fail to reject) the other.

The first hypothesis is referred to as the Null Hypothesis because it is the hypothesis of no effect or no difference between the populations of interest. It is usually given the symbol \( H_0 \).

The second hypothesis is usually called the Alternative Hypothesis by statisticians, but since it is often the hypothesis that the researcher would like to be true, it is sometimes referred to as the Study Hypothesis or Research Hypothesis.

The chi – square test is used to determine whether an association (or relationship) between two categorical variables in a sample is likely to reflect a real association between these two variables in the population. The chi – square static value is calculated using the formula (Observed frequency – expected frequency) \( 2 / \) expected frequency.

The expected frequency is calculated as 

\[
(\text{Sum of row value} \times \text{Sum of Column value}) / \text{grand Total.}
\]

The chi – square value is calculated for each row of the table and finally all the values are summed up, which gives the final chi-square static value. Then the value is checked for probabilistic significance, \( P \) value. If the value of \( p <0.005 \), then it can be concluded that the association exists between the considered data. Then null hypothesis will be rejected. Further to check the strength of the association Cramer’s \( V \) test is used. The \( v \) – value obtained is checked and based on the following range strength of association is discussed.

- Greater than 0.5 is large
- About 0.3 is moderate
- About 0.10 and below is low

IV. RESULTS AND DISCUSSIONS

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Description</th>
<th>Total</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>My work is interesting.</td>
<td>212</td>
<td>3.59</td>
</tr>
<tr>
<td>2</td>
<td>Training needs are addressed periodically.</td>
<td>194</td>
<td>3.29</td>
</tr>
<tr>
<td>3</td>
<td>I know exactly what my tasks are</td>
<td>210</td>
<td>3.56</td>
</tr>
<tr>
<td>4</td>
<td>I regard the content of my work as responsible.</td>
<td>209</td>
<td>3.54</td>
</tr>
<tr>
<td>5</td>
<td>I feel that my work is of value in my department.</td>
<td>212</td>
<td>3.59</td>
</tr>
<tr>
<td>6</td>
<td>I have certain degree of authority in my role.</td>
<td>195</td>
<td>3.31</td>
</tr>
<tr>
<td>7</td>
<td>I have flexibility in planning my schedule.</td>
<td>193</td>
<td>3.27</td>
</tr>
<tr>
<td>8</td>
<td>I am given to work in accordance with my qualification and skills.</td>
<td>203</td>
<td>3.44</td>
</tr>
<tr>
<td>9</td>
<td>My qualification and skills are put to maximum use.</td>
<td>205</td>
<td>3.47</td>
</tr>
</tbody>
</table>

From Table I, it is evident that the mean values for the different job satisfaction factors are very much close to each other, which indicates that almost all the employees are satisfied with their job and the environment. ‘My work is interesting’ and ‘I feel that my work is of value in my department’ (Mean = 3.59) are considered to be the most satisfying among employees.

It is also evident from Table I, that the employees are not satisfied with their inability in having flexibility in planning their schedule which is indicated by the mean value 3.27.
TABLE II

DESCRIPTIVE STATISTICS FOR THE DIMENSIONS OF DECISION MAKING

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Description</th>
<th>Total</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I am allowed to decide on the methods for doing the work.</td>
<td>190</td>
<td>3.22</td>
</tr>
<tr>
<td>2</td>
<td>I get required support from HOD in key activities.</td>
<td>204</td>
<td>3.46</td>
</tr>
<tr>
<td>3</td>
<td>I have the opportunity to take part in decision making.</td>
<td>195</td>
<td>3.31</td>
</tr>
<tr>
<td>4</td>
<td>Individual ideas and proactive improvements are appreciated.</td>
<td>192</td>
<td>3.25</td>
</tr>
</tbody>
</table>

From Table II, it is evident that all the employees are satisfied with the support they get from the supervisors, Mean = 3.46.

TABLE III

DESCRIPTIVE STATISTICS FOR PAYMENT

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Description</th>
<th>Total</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>My salary is satisfactory in relation to what I do.</td>
<td>171</td>
<td>2.90</td>
</tr>
<tr>
<td>2</td>
<td>I earn the same as or more than other people in similar jobs in other institutions.</td>
<td>164</td>
<td>2.78</td>
</tr>
<tr>
<td>3</td>
<td>Extra work done is rewarded through financial incentives.</td>
<td>143</td>
<td>2.42</td>
</tr>
<tr>
<td>4</td>
<td>Salary increment is decided in fair manner.</td>
<td>175</td>
<td>2.97</td>
</tr>
</tbody>
</table>

From Table III, it can be inferred that the respondents are satisfied with the manner in which the salary increment is done which is indicated by their mean value of 2.97. It also indicates that any ‘extra work done by the employee is not rewarded’ (Mean = 2.42), de-motivates the employee to do additional work which in turn reduces the productivity.

TABLE IV

DESCRIPTIVE STATISTICS FOR PERCEIVED ORGANIZATIONAL SUPPORT

<table>
<thead>
<tr>
<th>Serial No</th>
<th>Description</th>
<th>Total</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>My HOD is friendly and Cooperative</td>
<td>215</td>
<td>3.64</td>
</tr>
<tr>
<td>2</td>
<td>My HOD will support me if there are problems</td>
<td>212</td>
<td>3.59</td>
</tr>
<tr>
<td>3</td>
<td>My HOD can be convinced and persuaded</td>
<td>202</td>
<td>3.42</td>
</tr>
<tr>
<td>4</td>
<td>My HOD cares about my safety</td>
<td>210</td>
<td>3.56</td>
</tr>
<tr>
<td>5</td>
<td>My HOD recognizes my potential and values my contribution on the job.</td>
<td>210</td>
<td>3.56</td>
</tr>
</tbody>
</table>

As seen from Table IV, respondents are satisfied with the way in which their supervisors value their contribution and potential. This is one of the very important motivating factors because every employee wishes to be recognized by their leader/supervisor for their work and potential. This will be a big morale booster for the employees.

V. INFERENTIAL STATISTICS RESULTS

Hypothesis: 1

H₀: There is no difference between Age and Overall Job Satisfaction.

H₁: There is a difference between Age and Overall Job Satisfaction.

Hypothesis: 2

Ho: There is no difference in perceptions of employees based on their Monthly Income and Promotion aspects.
H1: There is a difference in perceptions of employees based on their Monthly Income regarding Promotion aspects.

As seen from Table VI, the chi-square value, p < 0.05 are considered as significant. The test results revealed that out of the four variables considered only one variable is not significant. The detailed results for the significant factors are discussed below:

- **Everyone has equal chance to be promoted**
  The two factors ‘Monthly income’ and ‘Everyone has equal chance to be promoted’ was found significant with a Cramer’s V value of 0.372. From this it can be said that strength of association is moderate.

- **Promotion is based on skill and experience**
  The two factors ‘Monthly income’ and ‘Promotion is based on skill and experience’ was found significant with a Cramer’s V value of 0.366. From this it can be said that strength of association is moderate.

- **Promotion is performance based.**
  The two factors ‘Monthly income’ and ‘Promotion is performance based’ was found significant with a Cramer’s V value of 0.370. From this it can be said that strength of association is moderate.

*Hypothesis: 3*

Ho: There is no difference in perceptions of employees based on their Type of Job and Decision making.

H1: There is a difference in perceptions of employees based on their Type of Job and Decision making.

As seen from Table VII, the chi-square value, p < 0.05 are considered as significant. The test results revealed that out of the four variables considered, three variables are significant. Hence null hypothesis is rejected for these three variables namely, ‘allowed to decide on the methods for doing the work’, ‘get required support from HOD in key activities’ and ‘individual ideas and proactive improvements are appreciated’. Since other variable are not significant, null hypothesis cannot be rejected for the other variables. The detailed results for the significant factors are discussed below:

- **Allowed to decide on the methods for doing the work**
  The two factors ‘Type of job’ and ‘I am allowed to decide on the methods for doing the work’ was found significant with a Cramer’s V value of 0.423. From this it can be said that strength of association is moderate.

- **Get required support from HOD in key activities**
  The two factors ‘Type of job’ and ‘I get required support from HOD in key activities’ was found significant with a Cramer’s V value of 0.447. From this it can be said that strength of association is moderate.

- **Individual ideas and proactive improvements are appreciated.**
  The two factors ‘Type of job’ and ‘Individual ideas and proactive improvements are appreciated’ was found significant with a Cramer’s V value of 0.388. From this it can be said that strength of association is moderate.

*Hypothesis: 4*

Ho: There is no difference in perceptions of employees based on their Work Experience and Work Place condition aspects.

H1: There is a difference in perceptions of employees based on their Work Experience and Work Place condition aspects.

As seen from Table VIII, the chi-square value, p < 0.05 are considered as significant. The test results revealed that out of the four variables considered only two variables are significant. Hence null hypothesis is rejected for this variable namely, ‘I am never overloaded’ and ‘My job description describes accurately what I have to do’. Since other variables are not significant, null hypothesis cannot be rejected for the other two variables. The detailed results for the significant factors are discussed below:

- **I am never overloaded**
  The two factors ‘Work Experience’ and ‘I am never overloaded’ was found significant with a Cramer’s V value of
0.409. From this it can be said that strength of association is moderate.

- My job description describes accurately what I have to do.

The two factors ‘Work Experience’ and ‘My job description describes accurately what I have to do’ was found significant with a Cramer’s V value of 0.378. From this it can be said that strength of association is moderate.

**Hypothesis: 5**

**Ho:** There is no difference in perceptions of employees based on marital status and Recognition and Benefits.

**H1:** There is a difference in perceptions of employees based on Marital status and Recognition and Benefits.

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Description</th>
<th>Chi-Square</th>
<th>Significance</th>
<th>Cramer’s V</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I am satisfied with my fringe benefits and perks.</td>
<td>0.585</td>
<td>0.219</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>I never have problems with my arrangements for leave.</td>
<td>0.057</td>
<td>0.357</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>I am praised regularly for my work.</td>
<td>0.911</td>
<td>0.095</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>I get credit for what I do.</td>
<td>0.006</td>
<td>0.456</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>I am given regular feedback on my performance.</td>
<td>0.021</td>
<td>0.407</td>
<td></td>
</tr>
</tbody>
</table>

Table IX, shows the Chi-square test results obtained to analyze the effect of Marital status of employees on Recognition and Benefits. Out of the 5 variables considered only two variables were found to be significant at p<0.05 level. The other variables were not significant. Hence null hypothesis cannot be rejected for these variables.

- Marital status and I get credit for what I do

The null hypothesis is rejected, since the value of p< 0.05 and a conclusion can be made that marital status of employees is associated with ‘I get credit for what I do’. By observing the Cramer’s value ‘V’ of 0.456, it can be concluded that the association between the two factors is of moderate range.

- Marital Status and I am given regular feedback on my performance

Data analysis revealed a significant relationship between marital status and the explanatory variable ‘I am given regular feedback on my performance’ as perceived by employees. The range of Cramer’s value, 0.407 is considered to be of moderate range.

**Motivators of Employees**

‘Perceived organizational support’ was analyzed as the main motivating factor for engineering department. With perceived organizational support, employees look forward for the support they receive from their higher authorities. In this survey employees indicate that they are highly motivated when they feel that their leader recognizes their potential and values their contribution. It was found that ‘Overall Job Satisfaction’ is analyzed as the Second main motivating factor for engineering department and the third most favored motivator according to the analysis made was ‘Decision Making’.

**De motivators of Employees**

Based on the analysis made ‘Payment aspects’ especially sub factor ‘extra work done is not rewarded’ is the main de-motivating factor while the second de-motivator is the ‘not receiving fringe benefits and perks’ especially when the extra work done by them is not recognized and not rewarded.

**REFERENCES**