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# **Importance of Incentives and Motivation Human Element in Construction City, Lohgaon (Dr.D.Y.Patil School of Engineering and Technology, Dr.D.Y.Patil School of Engineering, Dr.D.Y.Patil School of Architect, Dr.D.Y.Patil School of MCA, Dr.D.Y.Patil School of MBA, Dr.D.Y.Patil School of Diploma)**

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**Abstract:** *Construction industry is a labor intensive industry. It also consumes heavy engineering equipment, machineries but still labor has important parts to play. There are challenges of applying the principles of total quality management to construction projects, particularly from the stand point of the human factor. The main objective during construction project is to deliver product in a timely, cost-effective and safe manner. Construction industry forms an integral part of the economy and a conduit for a substantial part of its development investment, is poised for growth on account of industrialization, urbanization, economic development and people's rising expectations for improved quality of living.*

*Avoidance and negligibility towards motivation of employees is becoming a macro-issue in the construction industry referring to the unsubstantial productivity in construction projects in the Indian construction sector. It is therefore important to study the present scenario of incentives for construction employees and suggest motivating ways for the same employees. Motivation is the term used to describe the reason why people work. From an organization point of view, motivation deals with everything that a manager knows or can use to influence the direction and rate of individual's behavior towards commitment. After that conduct the investigation to study the current scenario of incentives provided for motivating construction employees. It is widely believed that when a worker is highly motivated, this goes a long way in improving organizational productivity, effectiveness and efficiency.*

*The study intends to investigate the effects of various human elements on the quality of a construction project. Thus, this study will determine the weight age of different human factors on quality of construction. For this study, primary research and secondary data will be used. Moreover, the descriptive research method will be utilized. Thus, this study will use the descriptive approach. This descriptive type of research utilizes observations in the study. Descriptive method of research is to gather information about the present existing condition. Primary research is conducted using questionnaire surveys that are sent to highly experienced construction industry professionals having considerable work experience in all major domains of construction industry*

## **I. INTRODUCTION**

In the last decade, with greater emphasis being given on infrastructure development, the industry has grown by leaps and bounds both in quantitative and qualitative terms. The business is no longer restricted to construction of residential buildings or factories but has extended to a wide range of services like construction of residential and commercial complexes, shopping and entertainment malls, industrial and software parks / towns, regional and national highways, roads, bridges, sea ports, airports, irrigation and water treatment projects, canals and so on. India has become a major outsourcing hub of the world in sectors like Information technology, Business Processes, Pharmaceuticals, Gem and jewelers, Biotechnology and Manufacturing. This has resulted in a major surge in demand for quality commercial and industrial construction services. Further, with increasing

concentration of highly paid working class in the commercial and industrial cities, the need for increased residential, shopping and entertainment related constructions has also surged. construction industry is a labor intensive industry. It also consumes heavy engineering equipment, machineries but still labor has important parts to play. There are challenges of applying the principles of total quality management to construction projects, particularly from the stand point of the human factor. The main objective during construction project is to deliver product in a timely, cost-effective and safe manner.

Construction sector is understood to be the largest sector after agriculture, with steady growth of 8% to 10% per annum. It has generated 31.46 million jobs (2008-2009) with potential to add another 2.5 million jobs in the coming years. About 250 ancillary industries such as cement, steel, brick and timberland building material are dependent on this sector.

The context of European economic recession has aggravated the decline of the construction sector of southern European countries. In Portugal, between 2005 and 2010, construction accumulated successive losses of over 24%. In 2012, the civil engineering sector was the most affected with a production fall, measured in constant prices, of around 7.5%. The civil construction industry relies on a business structure with predominantly unspecialized micro, small and medium companies, often using subcontractors or being subcontracted. In 2012, the Civil Construction and Public Works sector (CCOP) was constituted by 88,787 firms employing 344,185 workers. 93.8% of the companies were micro businesses (under 10 employees) and small companies with fewer than 50 employees represented 5.7% of total companies. In most of the companies, labor is intensive and the workforce is characterized by a high proportion of young males (who work in some cases illegally or without contracts). Over half of the employees have no or low qualifications, promoting high job insecurity. Wages are lower than the national average. The industry has a high manpower turnover over 70% of employees have been employed in their company for less than 4 years.

## II. THEROTICAL CONTENTS

### A. Incentive

The term incentives include all influence, positive and negative which stimulate human exertion. It is something that encourages a worker to put in more productive effort voluntarily. Mostly, workers are not willing to exert themselves to produce anywhere near their full capacity unless their interest in work is created by some kind of reward. This is called 'incentive'. The incentive is of course some kind of monetary reward which is closely related to the performance of a worker, that there is increase in wage corresponding to an increase in output.

### B. Types of Incentives

The Incentives are classified mainly as Financial, Non-Financial Incentives and Semi-Financial incentives.

### C. Financial Incentives

In order to enhance the efficiency further, some financial incentives are given to workers. In other words, financial incentives are remunerative arrangements which provide money inducement. It excludes wages, overtimes etc. Any return for his extra work has nothing to do with the incentives. If some award is given for one's efficiency, it will be considered as incentives. Financial incentives are one of the most powerful motivator in India because of low wages at every level of employment.

### D. Non-Financial Incentives

Non-financial incentives are used to reward participants for excellent behavior through opportunities. Non-financial incentives may include flexible work hours, payroll or premium contributions, training, health savings or reimbursement accounts, or even paid sabbaticals. If it comes to environmental behavior, often labeling and recognition certificates are used. This may include stickers, T-shirts with banner logos, etc.

### E. Semi-Financial Incentives

Semi-financial schemes may be classified as those which have some monetary benefits, but not directly linked with output and wages. Promotions, increments, and provision of training and welfare facilities may be included in this.

### F. Motivation

Motivation is a psychological feature that arouses an organism to act towards a desired goal, controls, and sustains certain goal-directed behaviors. It can be considered a driving force; a psychological one that compels or reinforces an action toward a desired goal. Motivation is an inner drive to behave or act in a certain manner. Because of motivation's role in influencing workplace behavior and performance, it is key for organizations to understand and to structure the work environment to encourage productive behaviors and discourage those that are unproductive.

### III. PROBLEM STATEMENT

The use of financial incentives in construction projects has been seen as a way to improve short term motivation, collaboration and reinforce long term commitment. an incentive plan that supports your strategic objectives, motivates attainment of stretch goals, provides desired returns and behaviors, and yields results.

Need for research to fulfill the following Demand;

To promote worker's efficiency.

To raise productivity.

To make workers feel that their interests are identical with those of the employers.

To make workers behave in a more responsible manner.

Construction industry is a vast industry with a huge number of human resources who are engaged in all types of works ranging from a basic labor to the senior most management employee of the company. Human element has a very important role to play in the productivity as well as the qualitative part as it is involved in every process of the industry which makes this area very important from the research point of view.

Human factors like education and training, employee motivation, role of management, communication, relations amongst stakeholders, construction safety technical ability of employees etc. are amongst some of the important factors which have a direct effect on the quality of the process

### IV. RESEARCH DESIGN

The study intends to investigate the effects of various human elements on the quality of a construction project. Thus, this study will determine the weight age of different human factors on quality of construction. For this study, primary research and secondary data will be used. Moreover, the descriptive research method will be utilized. Thus, this study will use the descriptive approach. This descriptive type of research utilizes observations in the study. Descriptive method of research is to gather information about the present existing condition. Primary research is conducted using questionnaire surveys that are sent to highly experienced construction industry professionals having considerable work experience in all major domains of construction industry. visit five construction sites and collect questions responds and make observation and analysis data for existing situation.

#### A. Sampling Technique

The general population for this study is composed of highly experienced construction industry professionals ranging from Engineers at big contractor firms of India to Managers working with Multinational Consultants. Basically these respondents are asked to rate the importance of enlisted human factors with respect to the quality of construction according work..

- 1) *Measurement:* First, the respondents shall fill out a self-administered questionnaire. Ideally, the respondents will grade each statement in the survey-questionnaire using a scale with a ten-response scale wherein respondents will be give adequate response.
- 2) *Range Interpretation:*
  - a) Ignorable
  - b) Not at all important
  - c) Less important
  - d) Relevant
  - e) Neutral
  - f) Important
  - g) Considerable
  - h) Most Important
  - i) Essential
  - j) Most important

The basic approach behind using the questionnaire as a tool is that it is easy to construct. Moreover, copies of the questionnaire could reach a considerable number of respondents either by mail or by personal distribution. Generally, responses to a questionnaire are objectified and standardized and these make tabulation easy. But most importantly, the respondent's replies are of their own free will because there is no interviewer to influence them. This is one way to avoid biases, particularly the interviewers' bias.



### B. Relative Important Index Method (RII)

Kometal et al. had used the relative importance index method which helps to determine the relative importance of various factors affecting human element in quality construction. The five-point scale ranging from 1(No Impact) to 10(Very High Impact) was adopted and it was transformed to relative important indices for each facto.

Table no 4.1 Relative Important Index Method (RII)

| F.no | Factors                 | RII (%) | Ranking |
|------|-------------------------|---------|---------|
| 1    | Effective Training      | 70      | 1       |
| 2    | Project Management      | 59      | 5       |
| 3    | Effective Communication | 51      | 7       |
| 4    | Worker Participation    | 49      | 8       |
| 5    | Work Organization       | 37      | 10      |
| 6    | Lack of Understanding   | 47      | 9       |
| 7    | Safety culture          | 63      | 2       |
| 8    | Employ motivation       | 59      | 4       |
| 9    | Reward and Recognition  | 56      | 6       |
| 10   | Human error             | 60      | 3       |

$$RII = \frac{\sum W}{A * N}$$

Where W is the weighting given to each factor by the respondents (ranging from 1 to 10)

A is the highest weight i.e., 10 in this case.

N is the total no. of respondents' i.e., 5 in this case.

RII was used to rank the factors. See figure comparing relative importance indexes of all the factors. These rankings made it possible to cross compare the relative importance of the Factors. Each individual cause perceived by all respondents was used as the overall rankings in order to give a clear understanding about the factors affecting labor productivity in construction industry.

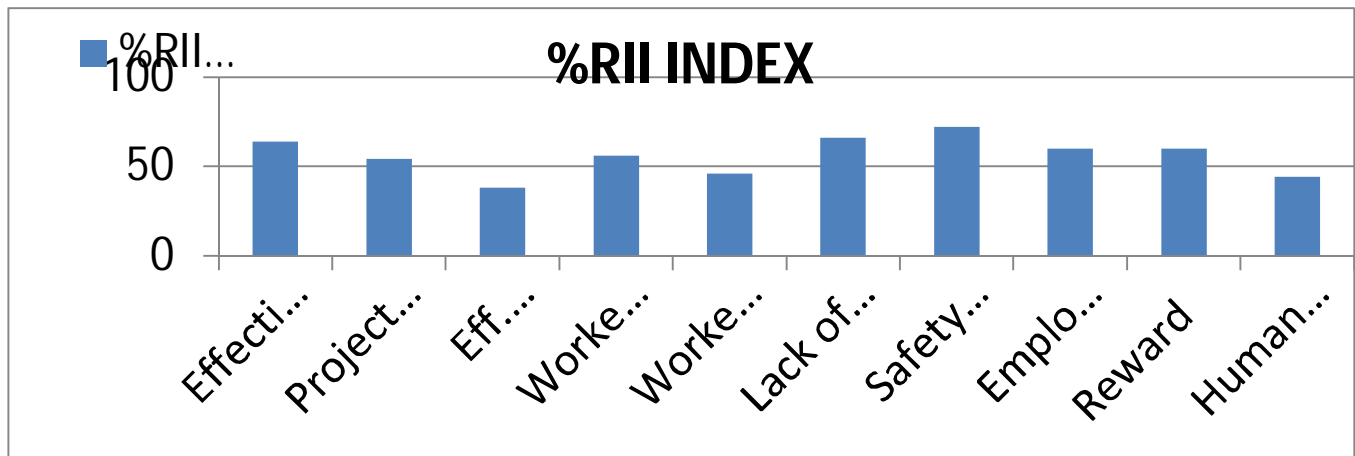


Fig no 4.1 Relative Important Index Method (RII)

Results from the above table suggest that effective communications, lack of understanding & effective training are the top three hindrances to quality construction

Comparative Questionnaire Chart.

| S r .no | Company name                             | Factors     |                   |                    |
|---------|------------------------------------------|-------------|-------------------|--------------------|
|         |                                          | Human error | Employ motivation | Effective Training |
| 1       | Madhuban Infracon & Developers           | 3           | 6                 | 8                  |
| 2       | Gardian Promotors & Developers pvt .ltd. | 9           | 7                 | 6                  |
| 3       | Arca realites LLP                        | 4           | 5                 | 9                  |
| 4       | Vishwa Developers                        | 4           | 10                | 6                  |
| 5       | Astute Engineering Serves                | 2           | 2                 | 3                  |
| 6       | J.kumar Infra                            | 3           | 3                 | 7                  |
| 7       | Meera Construction                       | 6           | 8                 | 8                  |
| 8       | Padmm Construction                       | 7           | 6                 | 10                 |
| 9       | Prem Infra                               | 8           | 5                 | 10                 |
| 10      | S.N.Developers                           | 8           | 5                 | 7                  |

Table no 4.2 Comparative Questionnaire Chart.

## Comparative Questionnaire Chart.



## V. CONCLUSION

- A. Human factors and issues which affect the construction quality and safety can be reduce by effective motivation and incentives.
- B. By studding case study following observation made;
  - 1) Training to labour is necessary.
  - 2) Motivation Works.
  - 3) Individual Behavior.
  - 4) The Motivation Performance Cycle.
  - 5) Motivators AndDemotivators.
  - 6) The Construction Project Motivation Program.
  - 7) Communication with labour is importance to avoid accidents.
  - 8) It is necessary to increase the interest of labour for increasing output of labour.
- C. By studying case study its conclude that Human factors affects construction quality.
- D. It is necessary to improve the interest of labour toward the work to avoid accident & production loss
- E. The research topic "Human Element in Quality Construction" was a very good learning platform in itself and helped us to raise productivity.
- F. It is necessary to improve the interest of labour toward the work to avoid accident & production loss.
- G. Motivate small organization through communication for motivation and safety.
- H. Motivate organization for compulsory fund for human element to achieve safety and quality.

## VI. ACKNOWLEDGEMENT

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## REFERENCES

- [1] Abdulaziz A. Bubshait, 'Incentive/disincentive contracts and its effects on industrial projects', International Journal of Project Management, (2003) pp 63–70.
- [2] Ashok kumar D. (2014)Study of Quality Management in Construction Industry. IJRSET, ICETS, Vol. 3, Special issue 1, 36-43.
- [3] Construction industry Unpublished M.Sc Thesis University of Lagos, page 80-85.
- [4] Dielman. M, Gouong. P ,Ann., Martineau 2007. Financial and Non-Incentives: Identifying factors for Job Motivation Vietnam. Journal -Construction Management and Economics.22, 899-991.
- [5] Fagbenle O.I,Adeyemi,A.Y,Adesanya,D.A.2004. The Impact of Non-Financial Incentives on Bricklayers productivity in Nigeria.Journal of Construction Management and Economics.22,899-911
- [6] Gana E. and Coren A. J. (2015) Human elements and factors contribution and consideration in construction projects. IRJESTI, vol. 4(1) pp. 12-18
- [8] Gilson 2004 Exploring the influence of workplace Trust Over Health Workers Performance. Journal of Health Economics .10,101
- [9] Journal of Management. Vol. 15, No t page 21-30.
- [10] Kelly.K, 2007. Feedback and Incentives on Non-Financial Values Drivers: Effect on Managerial Decision Making. Contemporary Accounting Research 24.2 Kaming. E.A 1997"Factors influencing craftsmen productivity in Indonesia" International .
- [11] Motivational Factors Impacting the Prodcivity of Construction Master Craftsmen in Kuwait volume 29 issue 4 oct 2013 asce journal of management in engineering
- [12] Owolana O.O 1997 "The influence of welfare factors on site workers performance
- [13] Priyanga V. and Ambika D. (2014) Study on factors influencing construction process performance. International Journal of Advanced Research in Civil, Structural, Environmental and Infrastructure Engineering and Developing Vol. 2, Issue:2: 85-89.
- [14] Varajão J. and Dominguez C. and Ribeiro P. and Paiva A. (2014) Critical success aspects in project management: similarities and differences between the construction and the software industry. Tehničkvjesnik 21, 3:583-5



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