

Importance Of Incentives and Motivation Human Element in Construction Industry

Mr. Tushar T Sathe¹, Prof. Shreedhar Patil², Prof. Ashish P. Waghmare³

¹P.G.Student, ME(C&M), Dept. of Civil Engineering, Dr. D.Y. Patil SOET, Pune, Maharashtra, India.

²Asst. Professor, Dept. of Civil Engineering, Dr. D.Y. Patil SOET, Pune, Maharashtra, India.

³P.G. Coordinator, Dept. of Civil Engineering, Dr. D.Y. Patil SOET, Pune, Maharashtra, India.

Abstract - Construction industry is the backbone and a key driver for developing economy. Construction originates in any nation's planning philosophy. Construction is borne out of politico-socio-economic considerations and hence, they have an immeasurable influence on construction technology and management of projects efficiently and effectively. Construction, in fact, is the leader of development. Construction industry sector can be broadly divided into buildings and construction. The latter deals with heavy civil engineering works - dams, highways, airports, bridges, power stations etc. Building component deals with ejection of buildings, mass housing, hospitals, schools and ancillary works referred to as external services.

In first stage of project, we are study the concept of incentives and theories of motivation of construction 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.

In second stage of project, we are analyzing the results of human the investigation and compare them with the ideal requirement of a construction projects. 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. After that suggest the construction organizations new methods of motivating the construction employees.

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. The study particularly targeted construction workers and their perception of the usefulness of the QA systems in place on case projects, and whether or not there were concurrent

attempts to achieve workers' empowerment on the projects. Improving quality and customer satisfaction has received considerable attention in recent years. This study examines human element in construction in terms of customer satisfaction and quality also. A framework is developed to evaluate the dynamics of customer satisfaction and quality. Hence for constant and better quality of construction work, it is necessary to maintain constant level of human resources in all aspect.

Key Words: Incentives, Performance, productivity, Enhancement, Human traits, Quality, Construction, Management Construction Industry.

1. INTRODUCTION

Construction industry has always been one of the largest industries in India. 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 jewellery, 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.

Along with increasing demand the construction business is also witnessing surging competition. The competition is not only within Indian players, but also from international players who see India as a large and growing market in the construction field. In today's business world, with increased complexities & competition, the management have become a crucial area of interest. Management is playing a key role in today's corporate sector. In present scenario, the success or failure of an organization mostly

depends on its management. Management is playing an important role by taking up the efficiency, productivity of an organization at higher levels. Management study has become a 'must do' situation for any organization. Today, for implementing any particular approach of management, it has become necessary to go through various concepts of management.

It don't know of any major project backed by good ideas, vigor and enthusiasm that has been stopped by shortage of cash. I do know industries whose growth has been partly stopped or hampered because they can't maintain an efficient labor force and I think this will hold true even more in the future - Fred K Foulkes

Fred K Foulkes is the Director, Human Resource Policy Institute Professor of organization behavior. He studied human behavior in construction industry thoroughly. With prior consultation with experts from various industries and putting all his experiences and expertise, he arrived at the above stated conclusion. The above statement draws spot light on the importance of human factor in the survival and proper completion of projects of any type of industry..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 timber and building material are dependent on this sector

In India, if we consider 100 percent human force in the industry, there are more than 83 percent unskilled labors. Construction industry is the only industry which dealt with this proportion of unskilled labors. Construction industry has its unique nature due to following reasons

1. Their reliance on transient workforce
2. Increasingly demanding client
3. A male dominated culture
4. Shrinking labor market & image of the construction sector.

1.2 Background

Construction sector is diverse as it contains contractors, consultants, designers, owners, and others. Construction projects suffer various problems. There are undue cost overruns, delays and loss of productivity associated with construction projects everywhere. In today's era, one of the biggest concerns for any organization is to increase their productivity, representing the powerful and efficient conversion of resources into marketable products and determining business profitability. With the business environment becoming highly competitive, it is essential that organizations improve construction productivity performance for survival because construction is a man

power oriented industry and human resource is the flexible resource available for the management, focus of the majority of the researchers and practitioners has been on improving construction human resource productivity. Improving productivity of the construction workforce is crucial to the success of any construction firm as human resource costs comprise a considerable share of the overall project cost. Losses in construction human resource productivity have often been attributed to poor management of construction projects and construction professionals. Construction man power productivity is influenced by a multitude of factors. Though considerable research exists on productivity factors little effort has been carried out to find the relation between man power productivity and motivation of the employees. The Construction industry all across the world is an important indicator of the development as it creates investment opportunities across various related sectors.

The sector is labor-intensive and, including indirect jobs, provides employment to more than 35 million people. India is on the verge of witnessing a sustained growth in infrastructure build up. The construction industry has been witness to a strong growth wave powered by large spends on housing, road, ports, water supply, rail transport and airport development. 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. Construction constitutes 30% to 50% of India's capital expenditure on projects in various sectors such as highways, roads, energy, airports, railway, irrigation, etc and is the second largest industry in India after the agriculture. Since in India 80% of the project has cost and time overrun which in turns affects the quality of the project not because of poor material but because of poor management which leads to human labor. As Construction industry in labor intensive but no research has been done the in the past on the human elements which effects the quality of the project.

1.3 Need of resersch

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.

A few objectives for implementing incentives and human elements can be listed as below;

- 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.

- To make arise cooperative spirit in the work sand to minimize industrial disputes.
- 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 labour 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.
- Project performance is a major issue in project progress. India depicts the worst schedule overrun (55% of actual schedule).
- 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

1.4 PROBLEM STATEMENT

The incentives provided for motivating the man power is not given due attention and importance in the Indian construction sector. The motivation of construction employees through incentives in Indian construction industry is one of the least studied subjects. The incentive that motivates most work is financial payment. Research in economics and psychology increasingly shows that non-financial factors play a key role in job performance.

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. It is widely believed that when a worker is highly motivated, this goes a long way in improving organizational productivity, effectiveness and efficiency.

There are essentially two types of motivation.

a. Extrinsic Motivation - Extrinsic motivation is the motivation provided through performance incentives, such as a bonus or a fine, to stimulate voluntary performance.

b. Intrinsic Motivation - Intrinsic motivation arises from the agent's own desires and values such as respect, honour ,value for work, loyalty and not because of external motivators such as an offer of more money.

Extrinsic motivation or performance incentives most of the times give the employees a selfish reason to voluntarily act. Intrinsic motivation, on the other hand, often provides employees with non-economic reasons to perform a job beyond minimum requirements. As most of the projects involve both extrinsic and intrinsic motivators the project

incharge personnel should keep a watch on how the two motivators interact because there are higher chances of extrinsic motivators gaining importance than intrinsic motivators. Intrinsic motivation is not a minor issue. Losing the benefit of intrinsic motivation will result in diminished job performance and demoralized workers.

2 THEORETICAL BACKGROUNDS

In researching into productivity have made several endeavor, and various belief put forward as to what productivity entails for instance Kaming, 997,Talbot,1976, consider it as a relationship between output of input of human and non-human resources. Salso,Fagbenle et al,2004 stated that productivity is the ratio of output to input, that is the ratio of the am Kelly,2007, define productivity as the measure of according to what strong resources are brought together in organizations and utilized for accomplishing a set of results; It could also be exposed as a ratio of output to input. Thus, from Robert's, definition, it as a measure of output relative to input. This can be expressed as:

$$\text{Productivity} = \frac{\text{output}}{\text{Input}}$$

amount produced (the output), to amount

They further stated that, an increase in production or output does not necessarily indicate an increase in productivity. If input rises in direct proportion to output, the productivity will stay the same, and assuming that input increases by a greater percentage than output, then a high output will be achieved at the expense of a reduction in productivity.

This could be adorned in the concrete blocks laying operation carried in , for example, a team of two workers produces 20 concrete blocks per work - hour. Owing to demand, it is found necessary to increase input; the team is increased to three workers who now produce 27 blocks an hour. Thus the output has risen, but productivity has fallen to $27 \div 3 = 9$ blocks per an 1 hour. The operation is studied, and using improved method three workers can now produce 38 blocks per 1 hour. So not only has production increased, but also productivity is up to $39 \div 3 = 13$ blocks per work 1 hour .Building houses is entirely a construction activity, needed in agriculture, industry, education, health and other service industry, and this accounts for half the annual expenditure capital goods.

AVAILABILITY OF FINANCIAL INCENTIVES SCHEMES IN INDIEN CONTRACTING FIRMS.

AVAILABILITY OF FINANCIAL INCENTIVES IN FOREIGN CONTRACTING FIRMS.

	FINANCIAL INCENTIVES	OFFERED	%	NOT OFFERED	%
I	Cash award	8	72.73	3	27.27
II	Leave allowance	8	72.73	3	27.27
III	Luncheon	11	100	0	0
IV	End of years bonus	8	72.74	3	27.28
V	Transport allowance	11	100	0	0
VI	Housing allowance	4	36.36	7	63.64
VII	Holiday with pay	10	90.91	1	9.09
VIII	Over time with pay	4	36.37	7	63.65
IX	Vehicle loan	11	100	0	0
X	Gratuity/Retirement award	5	45.46	6	54.44
XI	Accident insurance	6	54.45	5	45.45
XII	Piece rates	6	54.45	5	45.45
XIII	Hospital allowance	0	0	1	9.09
XIV	Tools allowance	0	0	11	100
XV	Long service award	11	100	0	0
XII	Transfer allowance	5	45.45	6	54.45

	FINANCIAL INCENTIVES	RX	RY	RX-RY=[di]	Di ²
I	Cash award	1	1	0	0
II	Leave allowance	2	10	-8	64
III	Luncheon voucher	3	2	-1	1
IV	End of year bonus	4	5	1	1
V	Transport allowance	4	3	1	1
VI	Housing allowance	6	11	-6	25
VII	Holiday with pay	6	3	-4	9
VIII	Overtime with pay	5	3	-2	4
IX	Vehicle loan	7	4	3	9
X	Gratuity/Retirement award	7	5	2	4
XI	Accident insurance	9	9	0	0
XII	Piece rates	9	9	0	0
XIII	Hospital allowance	8	11	3	9
XIV	Tools allowance	11	5	6	36
XV	Long service award	12	12	0	0
XVI	Transfer allowance	10	5	5	25
	TOTAL				188

Table gives the breakdown of financial incentives as they were made available in the firms. Most of the incentives in the foreign firms are not in the indigenous firm. In Indians firms, leave luncheon voucher, leave allowance gratuity/retirement award and long service award and not

RANKING ORDER OF IMPORTANCE

TABLE IMPORTANCES RANKING OF INCENTIVES IN BOTH FOREIGN AND INDIGEN CONTRACTING FIRMS

	FINANCIAL INCENTIVES	OFFER ED	%	NOT OFFERED	%
I	Cash award	2	20	8	80
II	Leave allowance	-	0	10	100
III	Luncheon voucher	-	00	9	90
IV	End of years bonus	-	30	7	70
V	Transport allowance	10	100	0	0
VI	Housing allowance	4	40	6	60
VII	Holiday with pay	2	20	8	80
VIII	Over time with pay	10	100	0	0
IX	Vehicle loan	2	20	8	80
X	Gratuity/Retirement award	-	0	10	100
XI	Accident insurance	2	20	8	80
XII	Piece rates	10	100	0	0
XIII	Hospital allowance	9	90	1	10
XIV	Long service award	0	0	10	100
XV	Tools allowance	7	70	5	50
XVI	Transfer allowance	8	80	3	30

RX = FOREIGN FIRMS
RY = INDIGENOUS FIRMS

DETERMINATION OF CORRELATION COEFFICIENT

The rank correlation coefficient is used. The test statistics is computed thus:

$$rs = \frac{1 - 6 \sum d^2}{n[n^2 - 1]}$$

$$= \frac{1 - 6[188]}{1 - 6 \times 188}$$

$$= \frac{3360}{1 - 1128}$$

$$= \frac{3360}{-792}$$

$$= -0.4242$$

This shows almost positive perfect correlation between the rankings of the workers of both Indigenous companies and those of foreign contracting firms as regards the school of thought that Incentive is important in promoting their work performance.

STRENGTH OF POSITIVE CORRELATION

$$Tscore = rs \sqrt{\frac{n-2}{1-rs^2}}$$

$$ts = \frac{0.66}{\sqrt{1-0.66^2}}$$

$$ts = \frac{0.66}{\sqrt{0.5616}}$$

$$ts = \frac{0.66}{0.75}$$

$$10.95 = 2.30$$

Degree of freedom [df]:

$$df = n - 2$$

$$= 16 - 2$$

$$= 14$$

to.95 at 14df = 2.106

10.95 > 2.106

3. DECISION:

Reject Ho: Null hypothesis as $\alpha = 0.050$ and Accept Hi, that is. There is direct positive relationship in the type of financial profit provide in both foreign and Indian firms Table presented the analysis of the ranking of the financial

Incentives of both foreign and Indian firms to find out if there is correlation between the two rankings as regards their order of importance. Analysis shows not positive its positive correlation, this shows that opinion cut across the two cadres of the firms their ranking of the incentives in their order of importance. Analysis of Table of non-financial incentives also gives perfect correlation between the rankings.

4. CONCLUSION

The focus of this research work has been the determination of importance of incentives, the non-financial and financial incentives to the workers in the construction industry, comparing foreign and indigenous contracting firms. These forms of incentives among others were noted for having greater pressure on level of site workers productivity. It is therefore believed that if these could be well catered for, then the required labor productivity improvement will be establish

It was discovered through the analysis of the results that the level of incentive provision in Indian contracting firm is low compared to their foreign. This is visible in the availability of incentives like piece rates, overtime with pay, sport facilities, non-involvement in decision making, educational training in foreign contracting firms which were absent in the Indian contracting firms.

This characterizes the fact that Indian contracting firm's growth is nothing to write home about~ so also, where incentives are provided in Indian firms; they are usually not appropriately provided, thus beat the real essence of its provision. It has also been discovered that indigenous contracting firms does not put arrangement of adequate social security into consideration and that it is only provided on request by the client or as part of work preliminaries. Interview conducted revealed that majority of workers on construction work site are those whose major activity is not construction work, but found themselves there as a result of despondent economy, it could be inferred from this fact that such category of people could lack acceptable technical competence.

To achieve effective results the responses from construction industry professionals were very useful and according to the results we were able to conclude that the HUMAN FACTORS were the ones that are very important which in turn affects the quality and leads to customer satisfaction

5. REFERENCES

1. Gana E. and Coren A. J. (2015) Human elements and factors contribution and consideration in construction projects. IRJET, vol. 4(1) pp. 12-18.
2. Ashokkumar D. (2014) Study of Quality Management in Construction Industry. IJIRSET, ICETS, Vol. 3, Special issue 1, 36-43.
3. 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.
4. 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. Tehnički vjesnik 21, 3:583-589.
5. 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.
6. 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
7. G0ilson 2004 Exploring the influence of workplace Trust Over Health Workers Performance. Journal of Health Economics .10,101
9. 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 Journal of Management. Vol. 15, No t page 21-30.
11. Majd J, R , Plummer.W, "Incentives and Disincentive Guideline for contracts"
12. Construction industry Unpublished M.Sc Thesis University of Lagos, page 80-85.
13. Owolana O.O 1997 "The influence of welfare factors on site workers performance"
14. Unpublished B.Sc project report submitted to the Department of Building University of Lagos.
15. Robert.H.E 1972 "Turnover in the labour force" Brooking paper on Economic activities,
16. Journal of human resources. Vol. 3, page. 709-756.
17. Talbot, R.J 1976 "Financial incentives, do they work? Journal of institutes of Building, Vol.

6. Reference Websites:

1. www.equitymaster.com/research-it/sector-info/construction/Construction-Sector-Analysis-Report.asp (accessed on the 7 Jan, 2016)
2. <https://en.wikipedia.org/wiki>
3. <https://scholar.google.co.in/>