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LABOUR PRODUCTIVITY: A SURVEY

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Abstract—Construction industry faces lots of challenges with regard to problems associated with productivity. Productivity is one of the most important factors affecting the overall performance of any organization, whether large or small and the problems are usually associated with performance of Labour. The performance of labour is affected by many factors and is usually linked to the performance of time, cost, and quality. Productivity is still a fascinating topic and a hot topic in the construction industry, promising cost savings and resource efficiency. In both developed and developing countries, productivity is one of the most critical challenges. The developed world understands the relevance of economic development and social welfare. Developing countries that are dealing with unemployment, inflation, and resource scarcity try to make the best use of their resources in order to promote economic growth and better the lives of their population. The purpose of this thesis is to identify elements that affect labour productivity as well as to investigate reasons, such as labour problems on the job site and their impact on building projects.

Keywords—Labour, Productivity, Survey

I. INTRODUCTION

Inefficient management of the construction resources can lead to low productivity. This is why it is important that construction managers are knowledgeable about the various methods that can be used to evaluate the labor productivity of their workers. It is very important that construction projects have a good control over their productivity factors, as these contribute to their overall income. While there are various input resources that can be used to improve the efficiency of the project, labour productivity is a particular area that needs to be studied. This can help managers make informed decisions and improve the performance of their workforce. The output of a company can be heterogeneous or homogenous depending on the resources it has. For instance, capital is usually used to produce goods and services, while energy and raw materials are also included. Setting standards for productivity is a challenge because it involves establishing a reliable method to measure it. Developing countries that are dealing with unemployment, inflation, and resource scarcity try to make the best use of their resources in order to achieve economic growth and improve the lives of their citizens. The

purpose of this thesis is to identify elements that affect labour productivity as well as to investigate reasons, such as labour problems on the job site and their impact on building projects. Quality of site management, labour experience, misunderstandings between labour and superintendent, and other significant criteria all affect labour productivity.

II. PROPOSED ALGORITHM

1. Analyze and calculate the Relative Important of those Factors affecting labor productivity.
2. To statistically analyze the factors affecting labor Productivity.
3. To make recommendations to improve labor productivity in Construction.

The term "survey research" refers to the process of gathering information by asking people questions. In order to collect data for this study, two fundamental methods were used: questionnaires and personal interviews. A questionnaire was chosen as the most efficient and appropriate data gathering method for the investigation. The questionnaire was judged to be a self-administered instrument with web-design questions, which was a suitable response. A questionnaire in a web-survey style, on the other hand, takes less time and costs less money for the researcher, while allowing respondents to respond at their leisure. However, as compared to face-to-face interviews, the response rate for this method is usually lower. Data was gathered through reviews of books, journals, papers, seminar conferences, and websites that focus on the importance of building construction.

Small businesses in India are unable to meet labour demands, and as a result, workers are unable to increase their productivity. In fact, actual labour productivity ratios are decreasing day by day, which has a negative impact on an organization's profitability. We will attempt to link the negative effects of diminishing labour productivity to the productivity of other resources such as material, equipment, and capital in this study. The scope of this thesis is limited to surveys and research in India. Different statistical methods were used to analyses the data collected.

III. EXPERIMENT AND RESULT

Relative Importance Index (RII) was used for analysis of data. RII method helps to determine the relative importance of the



various factors affecting on labour productivity. RII was used by following equations.

$$RII = \Sigma W / (A * N)$$

Where, W is the weight given to each factor by the respondents and ranges from 1 to 4. W ranges 1 = Not applicable 2 = Does not affect 3 = some-what affects 4 = highly affect A is the highest weight = 4. N is the total number of responses collected for the ordinal scale.

Sr. No.	Factor Affecting	Ranking	RII
1	Labour supervision	4	0.894
2	Skilled labour	4	0.981
3	Scheduling of work	3	0.875
4	Training of labour	4	0.875
5	Payment	4	0.777
6	Communication between site manager & labour	4	0.854
7	Climatic condition	4	0.710
8	Expectations out of labour performance	2	0.859
9	Unscheduled extra work	3	0.739
10	Construction method	4	0.833
11	Availability of material	4	0.721
12	Availability of tools	4	0.862
13	Incentives schemes (payment for extra work)	4	0.712
14	Numbers of labours on site	4	0.766
15	Site layout	1	0.711
16	Facility provided to labour	3	0.811
17	Temperature on site	3	0.839
18	Material storage location	3	0.713
19	Structural design complexity	3	0.911
20	Safety condition on site	3	0.874
21	Motivation to labour	2	0.768
22	Project manager's leadership	2	0.657
23	Supervision committee	3	0.833
24	Contracting some project's part	4	0.743
25	Labour age	4	0.838
26	Changes order from designer, owner	3	0.710

IV. CONCLUSION

Labor factors, construction method, communication factor, skilled labour, scheduling of work, unscheduled extra work, supervision factor, health and safety factors were all proposed as independent groups in this study's theoretical model. The goal of this study is to determine the causes of potential factors affecting labour productivity in the construction industry. Through a standardized questionnaire distributed around Coimbatore, this study explores all possible factors. The survey findings are analysed, and the relative importance of components is determined using the Relative Important Index. The top most factors affecting labour productivity are listed based on the findings and analyses.

The above graph shows labour are most productive in first 2 to 3 hours in the morning.

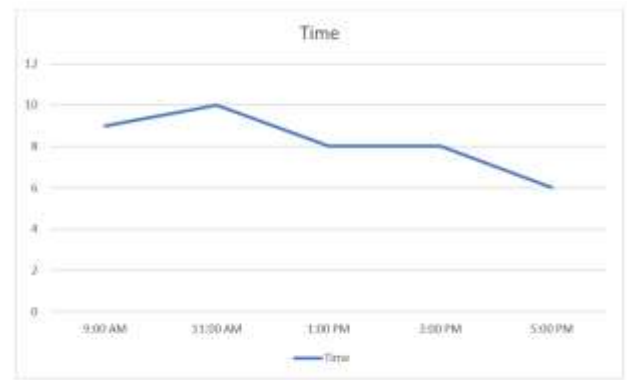


Fig: Labours Most Productivity Time

The building site and the temporary shelter must be kept clean and sanitary. On-the-job accidents; Alcoholism; extra work; a shortage of construction materials; payment delays; designer changes; Inadequate equipment; low-quality construction materials; employees' misunderstandings. As a result of this research, we must offer some recommendations for increasing labour productivity.

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