The Asian Review of Civil Engineering
ISSN: 2249-6203 (P) Vol.7 No.1, 2018, pp.37-39

DOI: https://doi.org/10.51983/tarce-2018.7.1.2250

A Study on Labour Productivity in Coimbatore Zone Construction Industry

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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. While there are several input resources in a transformation process, labour productivity plays a particular role. A deeper comprehension of the factors influencing labour productivity can enable managers to more effectively allocate limited resources, provide workers with better support, or increase workers' motivation.**
Keywords: **Labour Productivity, Coimbatore Zone, Performance, Construction Industry**

I. INTRODUCTION

Inefficient management of construction resources can result in low productivity. Therefore, it is important for construction managers to be familiar with the methods leading to evaluate the productivity of the equipments and the labourers in different crafts. To achieve the income expected from any construction project in general, it is important to have a good controlling hand on the productivity factors that contribute in the integrated production composition, like labour, equipment, cash flow, etc.

II. OBJECTIVE

The objective of this study focuses on views from the construction industry about various factors affecting labour productivity, Analyzes factors affecting the labour productivity, impact and suggests appropriate measures that can be taken to improve labour productivity. The aim is supported by the objective stated below.

1. Study and discuss various factors affecting labour productivity in construction industry.
2. Analyze and calculate the Relative Important of those factors affecting labour productivity.
3. To statistically analyze the factors affecting labour productivity.
4. To make recommendations to improve labour productivity in construction.

III. METHODOLOGY

Survey research is defined as collection of different data by asking people questions. The data collection process used in this research had the option of two basic methods: questionnaires and personal interviews. A questionnaire was preferred as the best effective and suitable data-collection technique for the study. It was concluded that the questionnaire was described as a self-administered tool with web-design questions, an appropriate response.

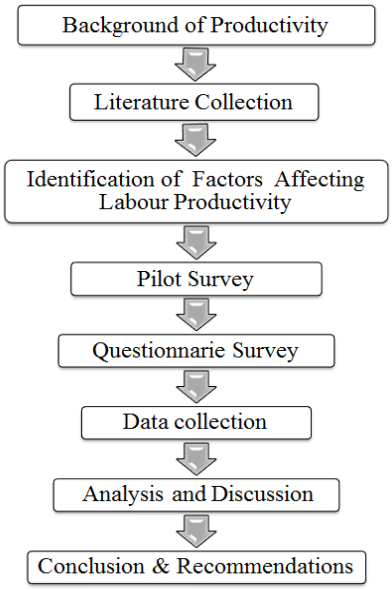

Fig. 1 Methodology

IV. STATISTICAL PACKAGE FOR THE SOCIAL SCIENCES (SPSS)

Statistical Package for the Social Sciences is a software package used for statistical analysis. Long produced by SPSS Inc., it was acquired by IBM in 2009. SPSS is a widely used program for statistical analysis in social science. It is also used by market researchers, health researchers, survey companies, government, education researchers, marketing organizations, data miners, and others. In addition to statistical analysis, data management (case selection, file reshaping, creating derived data) and data documentation (a metadata dictionary was stored in

the data file) are features of the base software. In Civil Engineering field Statistical package for the social science (SPSS) software is mainly used for analyzing the questionnaires.

V. BACK GROUND OF LABOUR PRODUCTIVITY

Productivity can be defined in many ways. In construction, productivity is usually taken to mean labour productivity, that is, units of work placed or produced per man-hour. The inverse of labour productivity, man- hours per unit (unit rate), is also commonly used.

Productivity is the ratio of output to all or some of the resources used to produce that output. Output can be homogenous or heterogeneous. Resources comprise: labour, capital, energy, raw materials, etc.

Productivity may then be defined as the ratio of earned to actual hours. The problem with this concept is in establishing reliable, for setting standards. It also depends on the method used to measure productivity, and on the extent to which account is taken of all the factors which affect it. At a project site, contractors are often interested in labour productivity. It can be defined in one of the following ways.

Labour Productivity = (Output / Labour Cost)

A. Various Factors Affecting Labour Productivity

Identification and evaluation of factors affecting labour construction productivity have become a critical issue facing project managers for a long time in order to increase productivity in construction. Understanding critical factors affecting productivity of both positive and negative can be used to prepare a strategy to reduce inefficiencies and to improve the effectiveness of project performance.

Knowledge and understanding of the various factors affecting construction labour productivity is needed to determine the focus of the necessary steps in an effort to reduce project cost overrun and project completion delay, thereby increasing productivity and overall project performance.

Based on the study, Factors affecting construction labour productivity have been identified and are grouped into 15 categories according to their characteristics, namely

1. Design factors
2. Execution plan factors
3. Material factors
4. Equipment factors
5. Labour factors
6. Health and safety factors
7. Supervision factors
8. Working time factors
9. Project factors
10. Quality factors
11. Financial factors
12. Leadership and coordination factors
13. Organization factors
14. Owner/consultant factors
15. External factors

B. Analysis of Results

The objective of conducting the analysis for this section is to establish the factors under the groups of causes identified from the literature review and the ranking according to their significant influence towards construction project labour. This analysis is used for identifying the major factors that contributing the construction delay and improved efficiency of project management. The research methodology for present study has adopted questionnaire survey to identify significant factors influencing Delay factor in Tamil Nadu construction projects.

C. SPSS Results

TABLE I TOP TEN FACTORS

S. No.	Factors	Mean	Std. Deviation	N	Rank
1	Sanitation and hygiene of the construction site and the temporary shed	4.34	.754	77	1
2	Labour injuries on site	4.26	.768	77	2
3	Alcoholism	4.17	.979	77	3
4	Working overtime	4.16	1.027	77	4
5	Shortage of construction materials	4.08	.757	77	5
6	Payment delays	3.99	1.164	77	6
7	Change orders from the designers	3.83	.965	77	7
8	Improper equipment	3.82	1.010	77	8
9	Poor quality of construction materials	3.82	1.085	77	8
10	Misunderstanding among labourers	3.82	.956	77	8

Note: *N- No of Response

VI. CONCLUSION

The theoretical model of this study proposed fifteen independent groups affecting the variation of Labour Productivity in the construction projects namely Labour factors, Supervision factors, External factors, Owner/consultant factors, Execution plan factors, Designer, Working time factors, Equipment factors, Financial factors, Quality factors, Project factors, Organization factors, Leadership and coordination factors, Health and safety factors.

From the result and analysis the top most factors affected the labour productivity are given below

1. Labour
2. Material
3. Equipment related factors.

So we have to recommend some ideas to develop the labour productivity from this research.

VII. RECOMMANDATION

Firstly, the Motivation factor has the highest impact on Labour Productivity variation. The low labour satisfaction could have negative impact on labour productivity. So, the construction company should increase labour satisfaction by paying a reasonable salary, developing financial reward or recognition program and improving the living condition on site.

Material delay and material arrangement, tool and equipment management should be improved by adopting proper material management system.

1. Properly training to the labourers
2. Motivation to workers towards project completion
3. Properly and in advance material procurement and management
4. On time payment to the workers
5. Systematic flow of work
6. Properly , clearly & in time supervision
7. Advance site layout
8. Maintain work discipline
9. Facilities to the labourers
10. Clearance of legal documents before starting of work
11. Systematic planning of funds in advance
12. Preplan to avoid work stop
13. Maximum use of machinery and automation system
14. Advance equipment and material planning.

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