

# A REVIEW ON QUANTIFIED IMPACTS OF CONSTRUCTION LABOUR PRODUCTIVITY TOWARDS PROJECT PERFORMANCE

S.S.Kavithra <sup>1</sup>, D.Ambika <sup>2</sup>, R.Shreena Shankari <sup>3</sup>

<sup>1</sup> PostGraduate Student, Department of Civil Engineering, Kongu Engineering College, Perundurai, India.

<sup>2</sup> Assistant Professor, Department of Civil Engineering, Kongu Engineering College, Perundurai, India.

<sup>3</sup> PostGraduate Student, Department of Civil Engineering, Kongu Engineering College, Perundurai, India.

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**Abstract** - Construction projects suffer various problems and critical factors such as cost, duration, quality and safety. Construction sector is multifarious as it contains engineers, quantified surveyors, contractors, consultants, design planners, site supervisors and owners. The purpose of this study is to identify factors affecting labour productivity at a building construction project. It was concluded that ultimate cost of the projects were higher than estimated cost. It is recommended to develop human resources through appropriate and progressive training programs that frame a well built assignment, field of vision and an organized approach to overcome the disruptions on the performance of the construction projects. Eventually, the chosen key factors are anticipated to assist in completing construction projects successfully.

**Key Words:** Construction sector, critical factors, labour productivity, human resource, training programs.

## 1. INTRODUCTION

Construction has the massive potential for creating employment. Construction labour Productivity is one of the key components of each and every company's success and competitiveness in the market. Labour Productivity interprets directly into cost savings and profitability. Incremental growth in labour productivity does not connote for any compromise in quality of construction. A contractor stands to attain or lose, depending on how well the productivity responds to competition. Companies may gain advantage over their competitors by improving upon productivity to build projects at inexpensive costs. The concept of labour productivity is significantly linked to the quality of both input and output. Labour Productivity is also fundamental to long-term growth. Betterment in construction productivity cannot be done without identifying factors that possess greater impact on labour productivity.

## 2. DEFINITION

The phrase "productivity" evinces the relationship between outputs and inputs. Input and output vary from one industry to another. The productivity definition varies when applied to distinct areas of the identical industry. Labour is one of the fundamental requirements in the construction industry.

Labour productivity generally correlates manpower in terms of labour cost to the quantity of labour outputs produced. In other words, labour productivity is the amount of goods and services produced by a productive factor in the unit of time or cost.

$$\text{Labour Productivity} = \frac{\text{Labour Output}}{\text{Labour Cost}}$$

## 3. NEED FOR THE STUDY

The research study explores vital factors affecting labour productivity in building construction. Interpretation of these factors is helpful for the construction professionals who work on the inception phases of construction planning in order to successfully deliver the project plan. The principle goal of the research study is to provide crucial information about factors influencing labour productivity to the project management teams who qualify the project's success. The research study seeks to impart knowledge of corresponding building construction affiliated factors that are prone to affect the project's success.

## 4. RESEARCH OBJECTIVE

The objectives of this research are stated below

- To identify the critical factors affecting labour productivity in the construction projects
- To statistically examine the impact of factors influencing labour productivity
- To suggest recommendations in order to improve construction labour productivity towards project performance

## 5. SCOPE OF WORK

The project undertaken by various construction firms differ widely, but the planning system adopted for all the firms are mostly one at the same. Rather than adopting the same system a detailed study on specific firms and its computing system could help firm in a more comprehensive manner.

- To improve the overall efficiency of the Project.
- To enhance the knowledge of labours and workers.
- To minimize the overall cost of the project.
- To accomplish the project within stipulated time.

### 6. SIGNIFICANCE OF THE PROJECT

Labour Productivity has a substantial importance in construction. Labour productivity comprises an essential part of production input for construction projects. In the construction industry, many external and internal factors will never be persistent and are troublesome to anticipate. This factor leads to a constant variation in labour productivity. It is necessary to make sure that a reduction in productivity affects the plan and schedule of the work and cause delays. The consequences of these delays could result in serious money losses. Considerable cost can be rescued if productivity is improved because the same work can be done with less manpower, thus reducing overall labour cost.

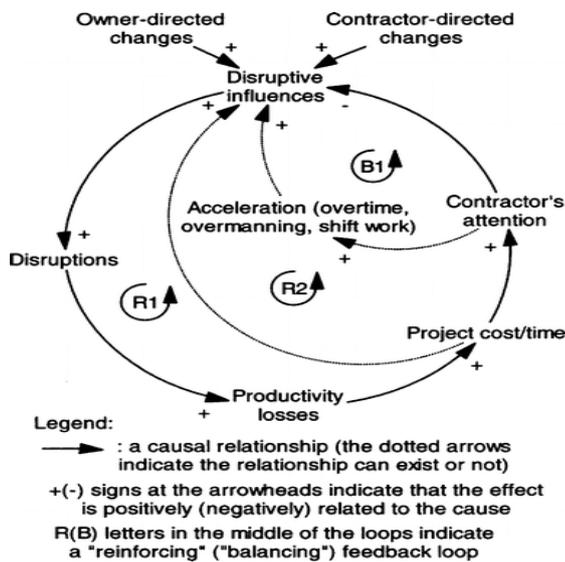


Fig. 1. Causal loops of inefficiency

### 7. LITERATURE REVIEW

Dheenadhayalan et al (2016) signifies that this study is to get the latest information and to identify the critical factors that affect the labour productivity in Coimbatore.

Benviolent et al (2014) identified and ranked according to relative importance, factors affecting labour productivity on building projects.

Mahamid Ibrahim (2013) aims at identifying the factors affecting labour productivity in building construction projects in the West Bank. Contractors working in building construction completed a structured questionnaire survey and the factors were categorized according to their levels of influence.

Nurulzatushima et al (2013) identified the factor that affects the labour productivity in construction industry and to discover the impacts of labour productivity in construction.

Mostafa et al (2012) describes proper management of resources in construction projects can yield substantial savings in time and cost.

Abdul Kadir et al (2005) states Construction labour productivity is of great interest to practitioners and researchers because it governs project cost and time overrun. This study analyzes and ranks the importance, frequency and severity of project delay.

### 8. METHODOLOGY

The methodology of this research study is described and explained based on the objectives of the project. This research study is commenced by reviewing the admissible literatures. From the literature study the factors affecting labours in construction projects are identified. Based on the factors the questionnaire in prepared and the questionnaire survey is conducted among various labours in different construction companies.

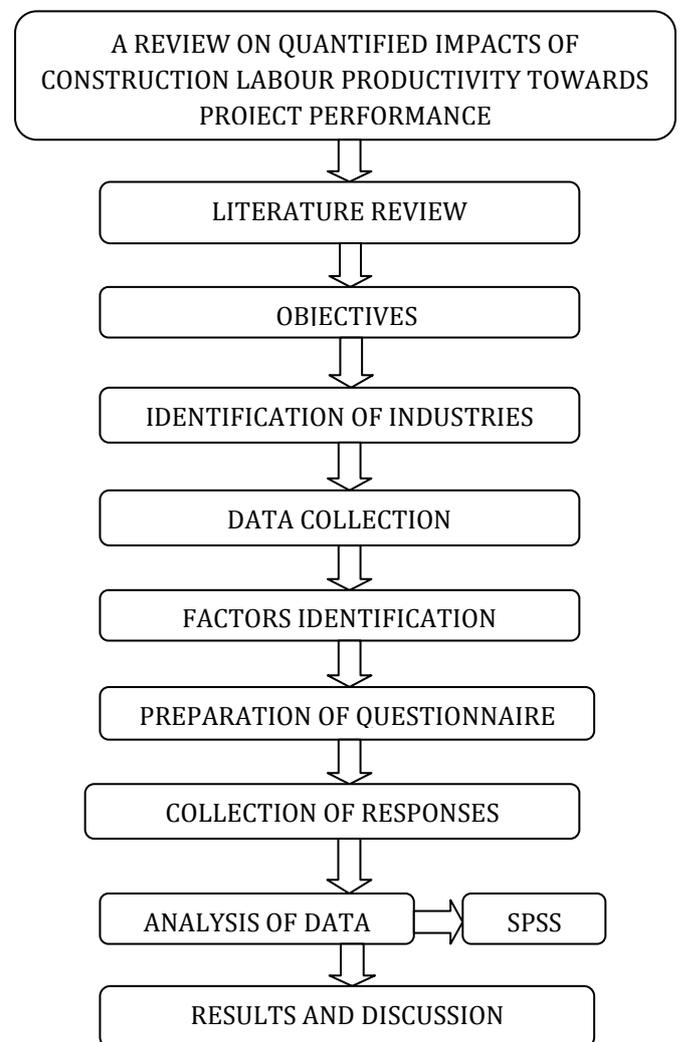


Fig 2. Research Methodology Flow Chart

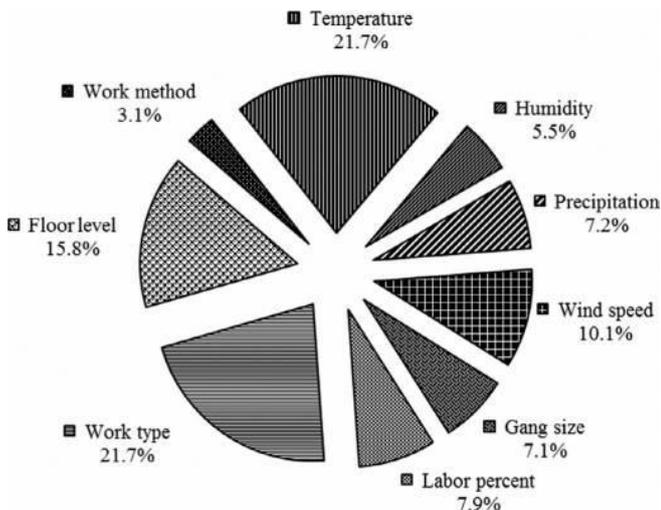


Fig 2. Relative contribution of parameters in daily labour productivity

*Factors Affecting Labours*

From various reviews of literature, the factors affecting labours in construction are identified.

8.1 Personal Factors

- Gender
- Disloyalty
- Age
- Educational Qualification
- Alcoholism

8.2 Construction Factors

- Lack of experience
- Rework
- Supervision delays
- Accidents at site
- Place of material storage
- Working time
- Absenteeism

8.3 Management Factors

- Implementation of government laws
- Payment delays

8.4 Resource Oriented Factors

- Lack of required construction materials
- Lack of tools and equipment's
- Violations of safety laws
- Improper transportation facilities
- Training sessions

8.5 Technical Factors

- Variations in the drawings
- Incomplete drawings
- Work Quality
- Design Changes
- Improper construction method
- Hike in price of materials

8.6 Communication Factors

- Communication of change orders from the owners
- Disputes among owner and contractor
- Flow of information
- Miscommunication

8.7 General Factors

- Water and/or power supply
- Poor site conditions
- Weathering conditions
- Basic Amenities

9. CONCLUSIONS

From the present study, factors affecting labour productivity are identified. Project manager should focus on these factors to improve the labour productivity and performance. The result indicates that the most significant factors affecting labour productivity are Personal Factors, Construction Factors, Management Factors, Resource Oriented Factors and General Factors. Contractors should perform on these factors to enhance labour productivity which ultimately can help to get higher profits from the projects. Consequently, it can also improve the productivity of the project besides minimizing the time and cost overrun.

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