

# Review Report on “Factors Affecting Labour Productivity in RCC Work”

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**Abstract – Construction is one of the major and most challenging industries in the World. In Construction Industry labour productivity is at the serious concern faced by the professionals while implementing/executing the work. Labour Productivity is a crucial role in defining the financial effect of any construction project. Every Project Costs labour about 35% to 50% of entire Construction Phases. The utmost challenging subject in Construction business is to increase the Construction labour Productivity. In past many researches have been done, however a detail study is still needed to improve the labour productivity. The productivity of labour is primarily important in developing countries like India, where total construction work is still on Labour basis. The objective of the study is to get the up-to-date data and to find the key factors that affect the labour productivity. It highlights Construction Labour Productivity Definitions, Aspects, and Factors affecting it.**

**Keywords: - Productivity, Work Study, Skilled Labour.**

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## 1. INTRODUCTION

The term ‘Labour Productivity’ is commonly defined as “the Ratio of Actual total of Output achieved in a given period to the corresponding amount of labour expended” [BROWN DAVID S. 1983]

Construction Performance and Productivity improvement are the chief measures in construction business for any nation. Indian construction industry is an essential part of economy after the Agriculture. Indian capital budget on Construction of project highway, road, railway, energy, airport, irrigation, etc. is 40% to 50%.

Accurate management of existing asset will support in improving the productivity. Labour is the chief asset in a construction Industry. Every Construction Project spent Total Costs 30% to 50% amount on labours. Quality of the structure chiefly depends on the quality of work completed by labour. Labour efficiency directly affects construction Projects Productivity. Productivity is a one of the utmost factors that affect the over-all performance of any organization. According to Make in India Project it was estimated that the construction business funds more than 10% Gross Domestic Product (GDP) of India. In most countries, labour cost comprises 30% -50% of total Project Cost (Shashank et al 2015, McTague and Jergeas 2002) and the reduction of these costs can be carried out by

actual application of manpower in construction industry. Construction Productivity and Labour Productivity are chief Parameters which determines the Profit or Loss of any construction industry. There are amount of a factor which disturbs the productivity of labour so, it is necessary to Study & Identify those factors at micro level to improve the labour productivity of any Organisation. The foremost objective of this study is to review the factor affecting labours Productivity, Equations, and Parameters needed to improve the Productivity and Productivity Tracking Processes.

## 2. LITERATURE REVIEW

**2.1 Importance of Measurement of Labour Productivity in Construction [Prachi R. Ghate 2016]** Author concludes the top twenty factors that affects labour productivity are as follows-

- 1) Labour Supervision
- 2) Skilled Labour
- 3) Work Scheduling
- 4) Labour Training
- 5) Payment

- 6) Communication within Management Team and Site Labours
- 7) Climatic Condition
- 8) Labour Performance
- 9) Extra Work
- 10) Construction Method
- 11) Materials Available
- 12) Tools or Machinery Available
- 13) On site Labours strength
- 14) Temperature at Site
- 15) Safety Condition on site
- 16) Labour contractor Meetings
- 17) Labour Motivation
- 18) Project Managers Leadership
- 20) Mis-communication between site management.

Author also suggests that Work Study & Work Measurement is the best techniques for labour data collection and upgrading in labour productivity.

**2.2 A Critical Review on Factors Influencing Labour Productivity in Construction [Mr. S. G. Vekaria].** The Author Reviews on the Factor Affecting Labour Productivity and techniques used to evaluate the Labour Productivity. Authors suggest that ineffective supervision of construction possessions results in decreasing resource productivity. Appropriate management of resources in construction tasks results cost & time effective.

**2.3 LABOUR PRODUCTIVITY IN CONSTRUCTION [Mahesh K.S, Reshma Kassim 2017].** Author represents Productivity equation as-

$$\text{Productivity} = \text{Output} / \text{Labour cost.}$$

Productivity means Unit of Work Done per Man-Hour or The Counter of Labour Productivity; Man-hours per unit also can be used. So, Productivity is a ratio of efficiency to total or Sum of the resources used in Production.

**2.4 Factors Affecting Labour Productivity in Construction Industries [Dharani K]** Author says that, Improving the Construction Productivity is the utmost issues in Construction business. India is a

Developing economy it is estimated that it can be Third Economy till 2050. Author carried a questionnaire survey of Construction Fields staff including Project Manager, Site Engineer & Supervisor & Craftsmen to find the Factor Affecting Construction Labour Productivity.

**2.5 Study on Labours Productivity Management in Construction Industry [Varma Santosh 2014].** Author’s analysis survey reveals that technical, social, physical, psychological, and economic and security problems lowers labour productivity on the construction sites. Author suggest following parameters to increase labour productivity

- 1. Adopt Modern Management technique
- 2. Proper Planning
- 3. Provide skills training
- 4. Enough tools at work
- 5. Motivation through incentives and other programs
- 6. Proper amenities to be provided
- 7. Good supervision
- 8. Safety program:
- 9. Departmental work force
- 10. Governments involvement

**2.6 Productivity in Building Construction [Ajba Shabbir Ahmed Pawle]** as per study done by author it represents some recommendations those are as follows-

- 1. Increasing shuttering material quantity.
- 2. Storage of reinforcement- for cutting and bending of steel in advance.
- 3. All Resources & Material should be available at site in time also, Funds Should be available.
- 4. Increasing resources/labour and sub-contractors.
- 5. Increasing working hours to minimize the delays.
- 6. Offer incentives to labour & subcontractors for achieving the Targets.

7. Short out difficulties occurring during executing the work in weekly meeting along with client & consultant.
8. Allocate more supervisory staff to regulate the Production.

**2.7 An Overview Study Of Working Condition And Productivity Of Construction Labours: Case Study Of Suburban Mumbai Region Of India [Junbok Lee]** Author Overviews on labour's output, welfare and safety and Concludes that there's a huge gap between the guidelines given in the NBC for the safety, welfare and output of labours and the actual practices followed on the site. It is detected that the guidelines given in the NBC becomes non-realistic on construction sites. A national/state level certified training programs must be run and made compulsory for the labours at the cost of the labour contractor/clients so as to improve their skill and talent.

### **2.8 Automation in Construction [Abdoulaye I. Djido]**

This Paper completes a study to establish an advanced measurement system for Productivity Using BIM (Building Information Modelling) & Information Integrated Technology to analyse and Control the Progress. Study focuses on Productivity Tracking Process on actual Data.

Applications of BIM that are mentioned are as follows.

- Clash detection
- Quantity - Cost estimation
- Construction Analysis & Construction Planning
- Integrated Cost Control, Schedule Control and Other Management Functions
- Offsite Production
- Activity Verification, Guidance & Tracking of Construction Activities

### **2.9 A Study on Labor Productivity in Construction Industry [Sudam Chavan 2016]**

This Paper highlights following points-

- 1) Types of Labour Productivity
- 2) Productivity measurement techniques
- 3) Factor Affecting on Labour productivity

- 4) Different techniques for Labour productivity Analysis and
- 5) Guidelines for improving labour productivity:
  1. Arrange labour training program.
  2. Provide on time payment to the workers.
  3. Avoid rework.
  4. Improve relation between supervisors to labours.
  5. Give time to time guidelines to the labour.
  6. Provides proper incentive wage schemes as per Standard
  7. Proper planning of raw material.
  8. Motivate to labours towards the completion of project.
  9. Advanced machineries and equipment's at site.
  10. Clear all things regarding work.

### **3. SIGNIFICANCE**

At Present in India Construction industry growing rapidly and effectively. There is need of adaptation of new techniques, Resources and Machineries as well for effective growth of Industry. Productivity compacts with the Progress of Industry so, we have to recognize the effect of Productivity as well as the factor affecting the Productivity for easiness in Construction working.

### **4. CONCLUSION**

The Literature study done concludes that, Labour Productivity stands as a sensitive area in every Construction Project as Project success depend on the Effectiveness of Resources; Literature Study highlights Factor Affecting Labour Productivity, Productivity Equations, and Parameters to improve the Productivity and Productivity Tracking Processes.

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