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FACTORS AFFECTING THE PRODUCTIVITY AND IMPROVEMENT OF THE CONSTRUCTION INDUSTRY

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ABSTRACT:

The productivity level of construction industry is mostly depending upon three factors they are improve characteristics, management systems and external issues. Different researchers have determined different factors that influence construction productivity. Understanding the level of productivity, it is important to develop innovative practices to improve construction productivity. This paper includes systematic literature reviews on productivity in construction industry the paper gives an review on different method which are used for measurement of construction productivity, factors affecting and theories on improvement of construction productivity such as labour and material factor, management factors and external factors, the paper further reviews on the different innovations which are made for improvement in construction productivity. On reviews it is noted that there are lot of different methods and strategies for improvement of construction productivity but they differs from site conditions and the factors which influence construction productivity.

Keywords: *affecting productivity and improvement of construction industry.*

INTRODUCTION:

Constructions and techniques to increase the economic output of this the world's largest and most challenging industry. Construction industry forms a sustainable portion of any nations economic output. Improving and development of method and techniques to increase the economic output of the construction industry are significant and important for any nation. Therefore construction productivity improvement is one of the key focus areas of many countries and government across the world. There is no doubt the construction is the key activity in any economy. It influences are influenced by the nation's gross domestic product (GDP).

Human resources today have a strategic role for productivity increase of any organization and these make it superior in the industrial competition. With the effective and optimum uses of it all the advantages supplied by the productivity growth can be obtained. Construction is a key sector of the national economy for countries all around the world, as traditionally it took up a big portion in nation's total employment of its significant contribution to a nation's revenue a whole. However until today, construction industry is still facing number of problems regarding the low productivity, poor safety and in sufficient quality. So productivity improvement is essential for every organization.

Understanding about productivity is always been a very important issue in the construction industry. Productivity is one of the important factors that affect overall performance of any small or medium or large

construction industry. There are number of factors that directly affected the productivity of the construction industry.

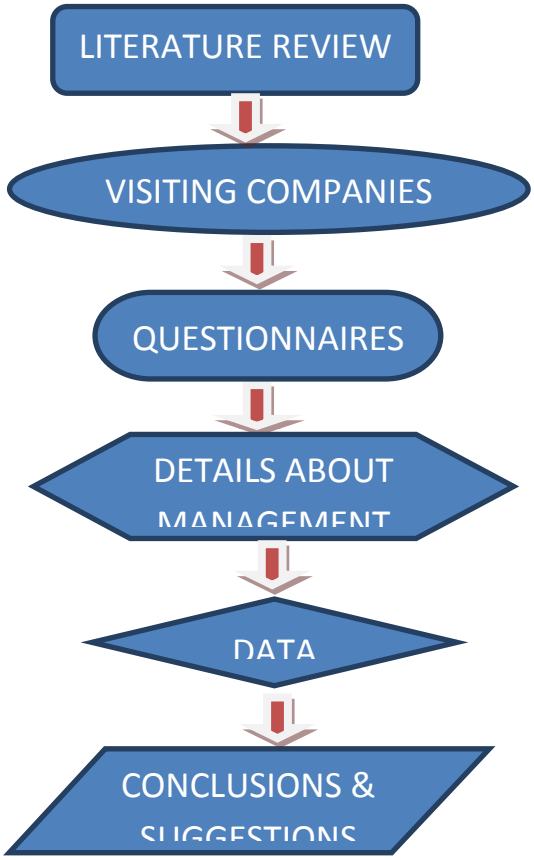
Productivity has now becomes an everyday watchword. It is crucial to the welfare of the construction industry in India. At the micron level if we improved productivity, ultimately it reduces or decreases the unit cost of project and gives overall best performance of project. Originally it was used only to the rate of workers according to their skills. The who produced more either faster or harder were said to have higher productivity. In this modernized world modern equipment are there for improving productivity.

OBJECTIVES:

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

- Study and discuss various factors affecting productivity in construction industry.
- Analysis and calculate the Important Index of those factors.
- To make recommendations to improve productivity in construction.

METHODOLOGY



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LITERATURE REVIEW:

This chapter confers the review of literatures regarding the issue of construction productivity in the past researches and studies. The most noteworthy of them which are relevant to the current study are being reviewed.

- Lack of materials
- Incomplete drawing
- Inspection delay
- Careless supervisors
- Delay for construction
- Lack of tools
- Poor communication
- Poor site condition

Factor Affecting on Labor Productivity:

Thirty eight factors identify by literature survey, which affected labor productivity are classified under the four primary groups

- Human/Labor Group
- External Group
- Technological Group
- Management Group

ANALYSIS METHODOLOGY:

For measuring the factor which affecting the construction productivity an ordinal measurement scale or rating scale 1 to 5 was used and as given below:

Table 3.1 Ranking Scale

Strongly Dis-agree	Dis-agree	Average	Agree	Strongly Agree
1	2	3	4	5

Then the important index was derived for each factor using the following formula:

Important Index = $5n_1 + 4n_2 + 3n_3 + 2n_4 + n_5 / 5\ (n1+n2+n3+n4+n5)$

n_1 – The number of respondents who "strongly disagree"

n_2 – The number of respondents who "disagree"

n_3 – The number of respondents who "average"

n_4 – The number of respondents who "agree"

n_5 – The number of respondents who "strongly agree".

After that rank factor according to the importance index. The higher value of importance index is ranked as first and same as on.

SURVEY QUESTIONNAIRES:

The data for this study were that results of 38 questionnaires administered to different companies in Erode, Tiruppur and Salem and Namakkal District. From this 10 companies are responding. For this survey 7 factors are considered and these factors are taken from different literature reviews.

The factors are

- Safety
- Quality
- Man power factor
- Management factor
- Site material and tool related factor
- Design factor
- External related factor

Table 4.3.1 Ranking Factors for Erode District

SL.NO	FACTORS	IMP INDEX	RANK
1	Site materials and tools related	1.429	1
2	External related	1.250	1
3	Manpower related	2.214	1
4	Management related	2.455	2
5	Safety related	3.330	3
6	Quality related	2.400	2
7	Design related	4.000	5

Table 4.3.2 Ranking Factors for Namakkal District

SL.NO	FACTORS	IMP INDEX	RANK
1	Site materials and tools related	3.524	4
2	External related	3.000	4
3	Manpower related	3.024	3
4	Management related	3.152	4
5	Safety related	3.074	5
6	Quality related	3.091	4
7	Design related	2.933	3

Table 4.3.3 Ranking Factors for Tiruppur District

SL.NO	FACTORS	IMP INDEX	RANK
1	Site materials and tools related	3.571	5
2	External related	2.250	2
3	Manpower related	3.357	5
4	Management related	2.363	3
5	Safety related	2.875	2
6	Quality related	2.200	1
7	Design related	2.600	1

CONCLUSION AND IMPROVEMENT:

- In today's world the construction industry is rated as one of the key industry. It helps in developing and achieving goal of society.
- Study and knowledge of construction productivity are very important because they cause losses the governing agencies and also influences the economics of the construction industry.
- This study is helpful to identify the causes of probable factors affecting construction productivity in Erode, Trichy, Tiruppur, Namakkal, salemDistricts. This study has found that has been construction productivity problems and disclosed the significant factors.
- These findings should enable construction stake holders to easily identify their strength and weakness and apply new techniques to reduce the negative impact of factors, which leads to increase productivity.
- The result indicates that the main factors negatively influencing constructions productivity in Erode,Trichy, Tiruppur, Namakkal, salemDistrict are :
- Rework
- Lack of employees
- Pressurization
- Labors turn over
- Difficulty in the requirement of workers
- Alcoholism
- Improper safety measures

In addition 51 factors considered in the study were divided in 7 groups which were ranked according to the importance index as

- Site material and tool related factors
- External related
- Man power related
- Management related
- Safety related

- Quality related
- Design related

BARRIERS TO IMPROVING CONSTRUCTION PRODUCTIVITY:

There are some barriers to improve the productivity and the barriers are given below:

- Lack of alignment of goal
- Difficulties of measuring productivity
- Lack of labor focus
- Week commitments to continuous improvement
- Reducing the material demand and time management

IMPROVING THE CONSTRUCTION PRODUCTIVITY:

- Systematic flow of work
- Systematic planning of funds in advance
- Pre monsoon plan to avoid work stop
- Maximum use of machinery and automation system
- On time payment to the worker
- Properly in time supervision.

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