Construction Site Regression Analysis For Labor Productivity

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Abstract- *With the continual decline in profit margins and enlarged competition in construction comes, construction contractors square measure finding ways in which of eliminating waste and increasing profits. Although numerous approaches are developed to boost potency and effectiveness of construction method, implementing applied math techniques provide the promise to attenuate. The construction industry is one in all the most important industries in any economy. It makes a big contribution to the financial system and provides employment to sizable amount of individuals. Time and time-motion study (also noted as motion and scrutiny, the terms square measure used interchangeably) is the scientific study of the conservation of human resources within the explore for the foremost economical method of doing a task. Time and time-motion study is administered to asses' human effectiveness by improved designing and sound incentive schemes to its workers. it's used within the assessment of the human efforts in numerous aspects to guide consistently to several factors that ultimately have an effect on potency and economy of matters below study in realizing the objectives of transfer concerning enhancements. the aim of this work is to focus on the advantages of your time and motion study used in construction sector. Time and time-motion study has been used to measure the productivity of the operations. it's expected that using lean ideas to construction can facilitate in increasing productivity and scale back risks. applied math analysis can facilitate in life cycle of a construction project right from thought to completion and at last operative and maintenance of the method. In essence, the main focus is to use time and time-motion study and applied math analysis {to numerous |to varied|to numerous} construction method to the observation knowledge sets generated for various construction method on website and verify the productivity and establish regression model mistreatment statistical analysis.*

Keywords- *time and time motion method, time laps, productive work, millennium development goal, multivariable liner regression*

I. INTRODUCTION

The prevalence and severity of domestic and foreign terrorism Marvin E. Mundel [1] asserts thattime and motion studies (sometimes known as motion and time study,

The scientific study of the preservation of human resources in the search for the most effective way to complete a task (the words are interchangeable). Efficiency became one of the most essential notions in the late 19th and early 20th centuries, and this led to a fascination with the word.

Numerous other human endeavours, including those in industries, hospitals, department stores, homes, banks, cafeteria labour, libraries, and the performing arts, have all benefited from the application of this strategy. A time and motion study's main objective is not merely effectiveness, though. These research projects aim to establish a baseline that can be.

II. LITERATURE REVIEW

Time, money, and quality are the three fundamental planning components in construction projects. These ideas are closely related. relation to one another. Another important idea in construction planning is labour productivity, which is closely related to the three constraints just discussed. (2014) Serdar Ulubeyli, Aynur Kazaz, Bayram Er. Change in work, disturbances, and rework are all highly correlated with lower labour performance. When changes are made, efficiency is lost by an average of 30%. The absence of resources and knowledge and having to do the work out of order are the two most important sorts of disruptions.

These interruptions cause a daily efficiency loss of between 25% and 50%. Carmen I. Napolitan and H. Randolf Thomas.

Additionally, one of the performance measures is labour productivity

III. AIM OF THE PRESENT WORK

To analyses labour productivity for residential building
g site

IV. OBJECTIVES: LABOUR PRODUCTIVITY AND USES:-

* To identify problems during production work for construction industry
* Improve workflow in terms of production time and define parameters to increase productivity
* Analysis of current working methods

V. PROBLEM STATEMENT

Higher productivity in the organization leads to prosperity and a better standard of living for all community. Improve productivity over time and Motion studies used in the construction and allied industries Career. Research work includes 2 aspects, research methods and measures that, when applied effectively, will yield results to higher productivity. Main construction problem Productivity depends on how the work is used. Labor productivity can be higher or lower depending on factors such as workload availability, hardware, labor tools, available power, work efficiency, level motivation, training level of working conditions (comfortable or poor) etc.

* For the above objective, 5 days of observations were recorded from stargazing site, kolte patil, pune.

VI. SITE DETAILS

* Name of site: stargaze
* Location of site: Bavdhan, West Pune zone, Pune, Maharashtra 411021
* A P+14 proposed building of 8 flats and 7 towers is taken for case study location is pune.
* Design Team: jw consultancy
* Owner and Developer: kolte patil
* Architect: manojtatuskar and vikasacharikar
* Cost of 1 flat: 64.4 Lakhs Onwards
* Cost of project:52 cr.
* Structural Engineer: jw consultant
* Builder: kolte patil o Area : 1.91 acre
* Present condition of the project: under construction
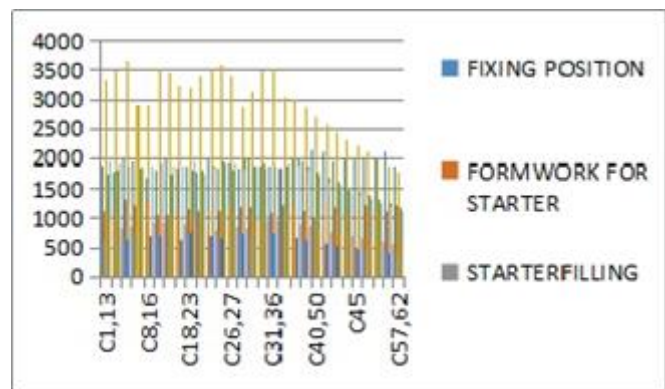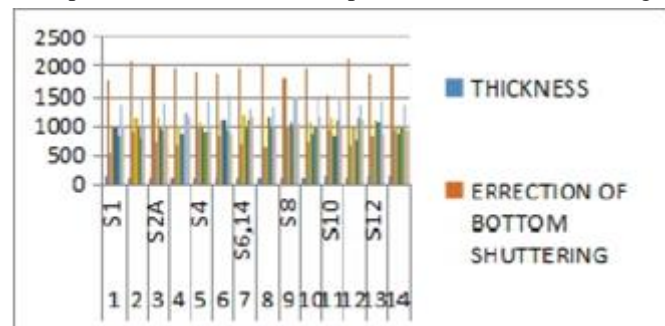* Startingdate:16/05/2018

VII. DATA ANALYSIS
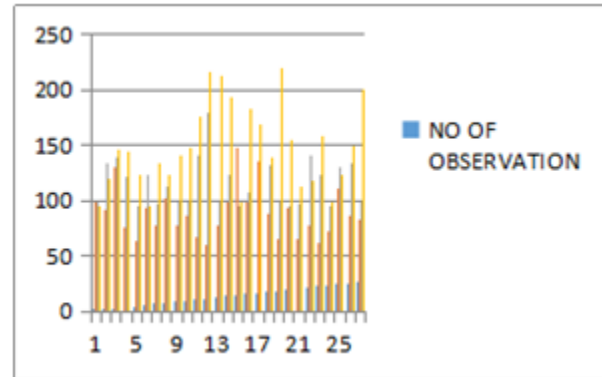
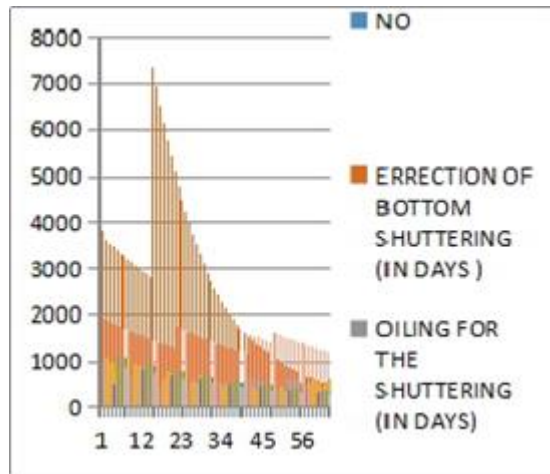Gaph: Relation between components of material handling
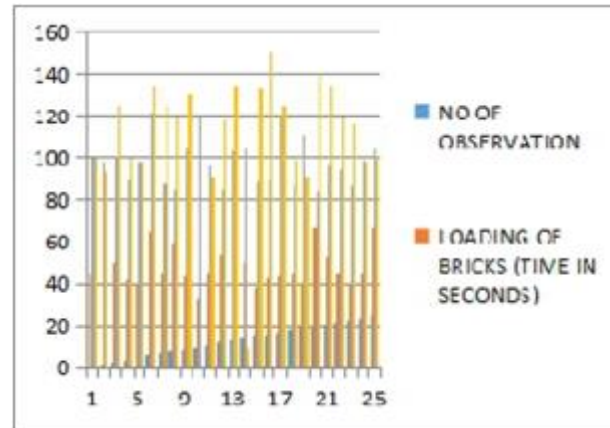
Graph: Relation between components of material of bricks handling of sand
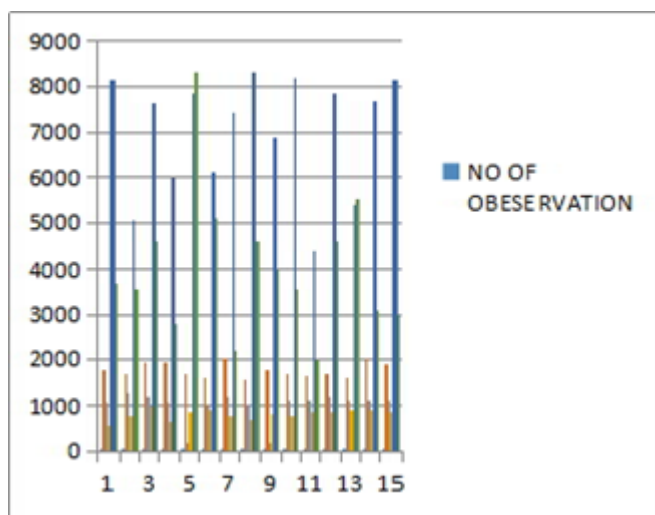

Graph: Relation between components of material handling

Graph: Relation between components of material Handling column

Graph: Relation between components of material handling

Graph: Relation between components of material
Of beam handling of plastering

VIII.SUMMARYANDDISCUSSION

In this study, the time motion study was analyzed for labor productivity in 5 days out of a total of 170 samples taken for plastering and pouring concrete (beams, columns, floors) and made the following conclusions:

1. Expected yield is 90% but observed up to 80% when sampling for 5 days for 170 samplings
2. Delays observed on the construction site are mainly due to variation in activity of the same workforce, some jobs are observed with insufficient skills in material handling and material movement.
3. From the work sample, it can be concluded that for secondary operations such as material handling, material handling machinery should have suitable operators
4. It can also be inferred that if all the sub-operations are done efficiently and the average time required will be reduced to the minimum required time by about 20%-30 % time savings can be achieved

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