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Project Evaluation with Primavera for Improving the Productivity in Construction Project

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ABSTRACT: In order to ensure the efficiency of a project, it should be characterized as far as in terms of some quantifiable key factors. Previous researchers have distinguished project efficiency factors such as cost, safety, construction productivity, and quality. Amongst all of them, construction productivity is one of the most dependable factor of project efficiency. Efficiency can be estimated at different levels including area, association, action and project level in project based association. The profitability level of construction industry will rely on different elements. The various inside & outside issues, skill of labour, different management software are influencing on productivity of construction projects. Primavera is a management software which supportive for improving project efficiency.

KEYWORDS: Project Efficiency, Labor Productivity, Construction Management Software (Primavera), Primavera Approach.

I. INTRODUCTION

Construction sector is most largest and challenging industry in India. Human resource has an essential part in expanding efficiency in construction industry. With the ideal utilization of human resources can help in efficiency development. The project execution in the construction sector is essentially influenced due to projects are vulnerable to few uncertainties and are very complicated in nature, the construction sector is ready for disruption because the huge asset class projects are up to 80% more than the decided cost & needed 20% extra duration than decided. Also, just an expected around 2.5% of organization effectively complete 100% of their projects. Further, regardless the negative project execution in terms of cost and time overruns, just 28% of organization use project execution methods. Consequently, equipping organizations with viable device to predict their projects expense & time overruns prior in the project life cycle is significant for the successful execution of construction projects.

1.1 Construction Productivity

In simple words, productivity can be expressed as the yield over information that shows the effectiveness of a productive framework. It guarantees ideal utilization of the assets engaged with framework, as well as the smooth and continuous flow of the cycle.

1.2 Indian Construction Industry

The Construction Industry having the normal yearly turnover 3.85 lakh crore. Be that as it may, each year it faces an enormous loss of income because of various issues accounted by the industry and losses due to poor efficiency is one of the serious issues. Indeed, the amount of loss in efficiency is even more than 30% in India which makes a serious area of concern for construction professionals.

II. LITERATURE REVIEW

Olanrewaju Abdul Balogun et al. The contribution of Small and Medium-sized Enterprise (SME) sector in economic development, work creation & income generation has been perceived around the world. These contributions are adequately expressed in South Africa construction sector. In any case, the fundamental issue restricting the SMEs area to contribute completely in the standard economy is the shortage of finance. This examination analyses the effect of firm qualities inaccessible to credit by the South African SMEs in the construction sector. A deductive methodological approach was utilized to look at this issue. This report uses a blend of essential information emanating from organized



survey questionnaires enhanced by secondary source of information from an extensive literature review, in order to present insightful commentary about credit accessibility within SMEs in South Africa. The organized overview questionnaire was managed to 179 construction development of small and medium companies to inspire important information about their credit openness. The outcomes shows that firm attributes impact admittance to finance. The examination suggests that South Africa SME contractors should keep up attractive firm attributes to invigorate lenders to extend finance to their investments.

Rodney A. Stewart et al. Research has demonstrated that the economic movement of small firms has expanded considerably in the last 20 years (Hughes 1997). The employment development rate has likewise been more prominent in small firms than large enterprises offering additional proof of the significance of the small firm area (Enterprise in Europe 1994). Small firms have offered exercises to large enterprises as far as making due inside an unpredictable environment, & gave a concentration to financial & the executive's enquiry (Hughes 1997). Verifiably, large construction firms have made a therapeutic move to refute the impacts of declining profits and economic recession. One vital alternative accessible to the huge firms is to conserve once more into center business areas and organizations. Conservation and disinvestment procedure empower bigger enhanced firm to ignore peripheral business activity & rather focus on areas in which they appreciate particular skills or predominant upper hand.

Amanuel Girma Yismalet et al. Construction cost management is the essential important function for project achievement, and the construction project execution is for the most part communicated as far as cost & its change from spending plan. Nonetheless, it has not been adequately utilized because of the presence of an enormous amount of information with numerous complex interrelationships. Construction firms, being project depend associations, need to build up their task the executives limit to achieve firm and project objectives effectively. Henceforth contractors need to look on project cost management cycle. The examination presents the restrictions, downsides and weaknesses of every project cost management functions related to current acts of domestic contractors, which should be improved for getting the predefined project targets and the productivity of contractors along with the proposed improvement suggestions, through critical literature review.

Lutfi Abdul Razak et al. Applying the General-to-Specific demonstrating on World Bank Enterprise Survey information for 266 economies, this report models five execution factors dependent on 80 potential variables got from firm attributes, finance, informality, infrastructure, innovation, technology, regulation, taxes, trade and workforce concerning small and medium organizations (SMEs). We find that the variables shift with respect to measurable significance and magnitude between small and medium organizations. For example, the percent of firms utilizing e-mail to collaborate with customer positively affects the yearly work development of organization, but it is not useful for small organizations. The extent of investments financed by value or stock deals has an adverse effect on small organizations, while there is no such impact on medium organizations. We locate that more drivers clarified the yearly business development and the percent of firms purchasing fixed assets contrasted with limit use, yearly labor productivity development, and genuine yearly sales growth.

III. METHODOLOGY

1.1 Performance Evaluation Model

As is accordingly point by point in approaching subsections, a multistep reliant strategy was utilized to accomplish the examination objective & goal.

Step 1: Data Collection

Step 2: Fitting of Parametric Distribution Functions

Step 3: Fitting of Nonparametric Distribution Functions

Step 4: Calculation of Cost and Schedule Overruns

Step 5: Model Verification

Step 6: Guidelines for Using the Developed Model in Industry Practice

Step 7: Model Application

1.2 Profitability Improving Model

In this paper utilized proposed approach for project management & to diminish cost and increment business productivity in Indian Construction sector for Small and medium organizations. The important factor in successful

execution of a construction project not just relies upon the quality and amount of work, yet additionally generally relies on availability of resources. All exercises associated in the project need certain measure of assets. Each movement is assigned with a particular resource & should be finished within the stipulated time, else it might adversely affect the entire duration of the project. The time required might be determined by dividing the profitability related with the assets utilized on the activity into the significant quantity of work for the activity. The best combination of assets to utilize for performing a construction work is depend on contractor’s capacity to recognize the interdependencies of the different assets. Here we compare same site (Sanjay Construction) using traditional approach and resource constrained approach then we analyses different parameters and how our proposed approach is better for small and medium construction firms in India.

1.3 Primavera P6 Software for Project Management

1.3.1 Study timely completion of projects Primavera P6 Software: As per Pritam A. Mali et all, in construction projects seeing postponed in the execution. The primary purpose for project delays is utilization of less advanced machines. Consequently, works in construction field can get smoother and quicker with the assistance of equipment fitted with cutting- edge technologies, which can guarantee project completion in given period of time.



Figure No 1: Primavera software Life Cycle in project management

❖ The 5 Phases of the Project Management Lifecycle

The stages related with project management fall into five classification including:

1. initiation
2. planning
3. execution
4. controlling
5. closing

Phase 1: Initiation

The commencement stage of the project execution lifecycle includes the initial beginning up processes of a project. This stage is the place where the project’s scope and reasons are redefined, justified, and executed.

- A. Team individuals and directors are appointed
- B. The attainability of the project is examined
- C. Documentation is gathered
- D. The project office is setup

Primavera software helps commencement stage by offering the capacity to store documents, design the project team individual’s access, & give a general stage survey before the arranging phase begins.

Phase 2: Planning

The planning phase is the most vital phase of the project executive’s lifecycle. This stage is the place where

the project records are settled in Primavera P6 software and given to the engineer team members to be utilized to finish the project. The arranging of a project falls includes the production of five smaller plans including:

1. the project plan
2. resource plan
3. financial plan
4. quality plan
5. acceptance and communications plan

In Primavera P6, the arranging stage is begun by making a work break down structure, shaping a cost stacked time table, to establish base line with assigning resources to the particular activities.

Phase 3: Execution

The project execution stage is the place where the work is begun and finished. When the project plans are set, development starts on the project and the cycle is analyzed against the baseline throughout the building of the project. The project team members utilized Primavera P6 software for

- Report Work in Progress
- Status the Schedule
- Compare Projected Start/ Finish Date Against Actual Start/Finish
- Compare Projected Cost Against Actual Cost
- Compare Projected Resource Usage Against Actual Resource Usage

Phase 4: Control

The control period of the project management life cycle is the place where the project team individual focus on the outcomes & choose whether the project is on time or delay. The project team members at that point utilize a project management tool, such as Primavera P6 software, to investigate the schedule and assess the project. The team members will analyse the baseline schedule against the real schedule & make a suggestions to improve the health of the project. If the project is delayed, the project team members will go into the Primavera software application, modify the project data, & then re-figure the schedule. At that point, the team members can go into Primavera P6 software and use the Claim digger functionality to plot the changes made between the two schedule updates.

Phase 5: Closing

The closing cycle is the last stage of the project management life cycle. In this stage:

1. project team members document lessons learned
2. determine if the project can be utilized as a baseline for other projects
3. deliver the final product to the stakeholders

1.4 Delay analysis

The following reasons were seen during this paper work, which can be considered liable for delays;

Absence of information about advanced tracking methods and software's.

- 1.4.1 Insufficiently skilled staff.
- 1.4.2 Lack of proper asset flow throughout the project progress
- 1.4.3 A significant portion of labor force was from West Bengal and Orissa. Regional festivals in these areas cause unexpected delays in work progress
- 1.4.4 Even however delay due to monsoon rain was already accounted in the baseline schedule, unexpected extension of monsoon caused further delay in project progress.
- 1.4.5 Sand unavailability due to legal limitation.
- 1.4.6 Late conveyance of assets.

IV. CONCLUSION

This paper presents a comprehensive model to foresee venture execution. The model figures two winning pointers: cost and timetable overwhelms. The model presents express conditions that could be utilized to gauge the undertaking execution regarding cost and plan and a bunch of diagrams that could be embraced as an elective technique for assessing venture execution to limit the computational endeavors. Also, utilizing mathematical instances of a theoretical contextual analysis, the proposed model mirrored its reasonableness and dependability in foreseeing venture

execution. From the above writing it is reasoned that there are numerous strategies for expanding efficiency and productivity in development industry. Primavera is a Management software is helpful for improving project performance in construction field, by proper planning and execution of various activities. There is huge examination on the techniques which improve the productivity which comprises of material following, solid and safe working condition and compelling administration frameworks. It is seen that a few techniques are more proficient with regards to expanding efficiency. There is a requirement for investigating more effective techniques for improving the efficiency just as productivity of the little and medium development firms. It has been noticed that expanding the productivity by such above strategies have diminished expense and time yet haven't make a viable standard in the field of development industry. It will likewise helpful for little and medium development firms in India.

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