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ASSESSMENT OF TIME DELAY AND COST OVERRUNS IN INDIAN CONSTRUCTION INDUSTRY

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Abstract - *Construction industry is consider one of the major and valuable industries for economic development and the growth. Now a day's delay and cost overruns are the major problems of any construction projects in India. These issues are causing the negative impact aftermath on the development of country prosperity and economic Growth. These failures can lead to various types of negative affections like disputes between contractor and client, decrease quality of work and health and safety accidents. Therefore, there is a high necessity for further investigation on delay and cost overrun factors as well as quality and health & safety and suggesting right actions to minimize these kinds of defects. To manage these two things then the project would be successful. The factors that influencing time and cost overruns are identified from the literature and using these factors a questionnaire is prepared and it contains 35 factors which causing delay and cost overruns and these factors are distributed to engineers, contractors, project manager, builder, supervisor. The respondents were asked to rate the listed factors on the basis of occurrence and severity of the impact. Data received from the questionnaire was analyzed by using the various methods. Data analysis is done with SPSS Software and inference. The results from the survey showed that the most five (5) factors causing time delay in construction projects from perspective of importance were (1) low* productivity of labours (2) lake of planning and scheduling (3) poor communication and coordination (4) incurred estimates (5) change in material type and specification during construction.

Key Words: TIME OVERRUN, COST OVERRUN, CONSTRUCTION AND PROJECT MANAGEMENT, DELAY

1. INTRODUCTION

The construction industry plays an important role in contributing to the national economy and the general development of the country. The construction industry also affects the rate of GDP and employment in the country and for this reason it is considered a resource for a country's economic growth. Because of this, the construction industry needs more materials than any other industry in the country. Cost overrun is one of the critical issues today that requires a lot of research and exploitation to overcome or reduce delays, as well as less budget variation in future projects. A cost overrun is defined as a cost risk or budget overrun, involving unforeseen costs exceeding the budget amount due to underestimation of the actual costs budgeting of construction projects. Most construction projects in India are affecting by cost overrun delays.

1.1 objectives:

- Be Examine the existence of cost overruns and delays in major construction projects.
- Examine reasons for cost overruns and delays in construction projects.
- Conduct a questionnaire to investigate the existence and reasons for overtime and costs in Surat. Recognize the most important factors that affect construction time and cost, quality of work, and health and safety issues in Surat.

1.2 Research Problem:

- Construction projects have problems with construction and administration methods, as well as resources, budget and time. Critical issues are failure to complete projects on time and on budget.
- It is too important to deal with all the general and local failures and the weak points from all points of view in the face of the problem. Therefore, it is essential to provide detailed procedures to avoid the time and cost overruns associated with civil engineering projects.
- Projects were often not completed on time and / or within the estimated budget. These results demonstrated time and cost issues in construction projects, resulting in delays and cost overruns.

1.3 Need of studies:

- Due to delays in project implementation, people have to wait longer than necessary to obtain public goods and services.
- Most infrastructure projects are funded by taxpayers' money in India.
- Plans and specifications - errors, omissions, vague drawings and scope in plans and specifications. Inexperienced estimators in the area of the client's unique expertise, program estimates and bid solicitations.
- Appropriate selection of equipment allows the project to be effective and increase its benefits. Proper selection of construction equipment helps to give a realis-tic budget.

2. Literature review:

1. Time Delay and Cost Overrun in Construction Industry of India

Author name: Sunil A. Kage, Meghendra R. Mane, Arjun M. Chougule, Abhishek V. Kadam, Rushikesh S. Majale U.G. Student, Department of Civil Engineering, Sanjay Ghoda-wat Institute, Atigre, Maharashtra

Summary: Now a day's delay and cost overruns are the major problems of any construction projects in India.These issues are causing the negative impact aftermath on the development of country prosperity and economic growth. To reduce these prob-lems, the paper is aimed to discover the most influence factors causing the project delay and cost overruns and recommend the possible measures by investigating final report of project in three different regionsin the country such as east region (West Bengal and Orissa State), south region (Karnataka and Tamilna-du State) and westregion (Maharashtra and Gujarat State). Each region's quantitative data from the past studies was selected to analyses and recommend the effective measures. The reason of selecting three regionsis to outline the compare analy-sis of delay reasons and to classify why different delay factors have different priority level of influence in project delay from one region to another region.

2. Causes of Delay in Building Construction Projects in Egypt

Author name: M. E. Abd El-Razak; H. A. Bassioni; and A. M. Mobarak

Summary : Delay in construction projects is considered one of the most common problems causing a multitude of negative effects on the project and its participating parties. This paper aims to identify the main causes of delay in construction projects in Egypt from the point of view of contractors, consultants, and owners. A literature review was conducted to compile a list of delay causes that was purged based on appropriateness to Egypt in seven semi structured interviews. The resulting list of delay causes was subjected to a questionnaire survey for quantitative confirmation and identification of the most important causes of delay. The overall results indicated that the most important causes are: financing by contractor during construction, delays in contractor's payment by owner, design changes by owner or his agent during construction, partial payments during construction, and no utilization of professional construction/contractual management. The contractor and owner were found to have op-posing views, mostly blaming one another for delays, while the consultant was seen as having a more intermediate view. Results' analyses suggest that in order to significantly reduce delay a joint effort based on teamwork is required. Furthermore, causes of project delay were discussed based on the type and size of the project.

3. Time Delay and Cost Overrun in Qatari Public Construction Projects

Author name: Ahmed Senouci, Alaa Ismail, Neil Eldin

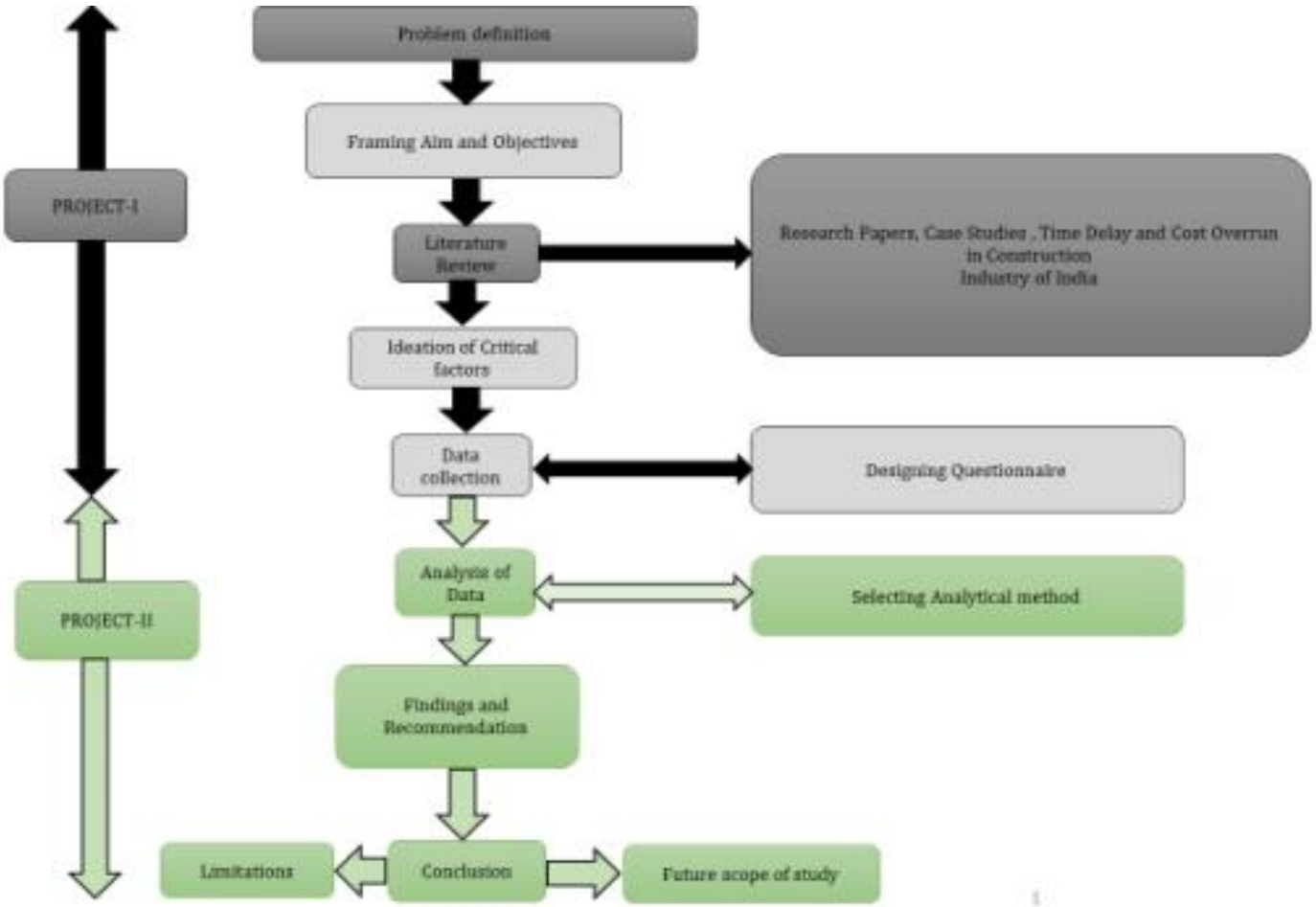
Summary: This paper investigated cost overruns and delays in Qatari public construction projects. An extensive review of re-gional and international publications was conducted to get a bet-ter understanding of the problemand the various methodologies that were used to analyze it. The data that was collected from Qatar public work authority ASHGHAL included 122 public road, building, and drainage projects. ANOVA method was used for data analysis and inference. A regression analysis was also conducted to establish the relationships between project contract prices and cost overruns and to develop prediction models for estimating cost overruns. Two linear regression models were developed for predicting cost overruns for building and drainage public projects, respectively. Cost overruns for building projects increased with contract prices. On the other hand, cost overruns for drainage projects decreased with increasing contract prices. A significant effort was spent in collecting data on cost overruns and delays in public construction projects. However, data confi-dentiality did allow the collection of enough data to ensure the robustness of the developed regression prediction models.

4. An Investigation on Time and Cost Overrun in Construction Projects

Author name : Changiz Ahbab

Summary : The success of construction projects is highly de-pendent on meeting the aim of project and objectives within the specified time and budget. Management plays a big role in con-struction projects. Most important problems that management faces in the projects are methods of execution, management of workers, equipment, scheduling and money. Delay and cost overrun are two of the important defects in con-struction industry. These failures can lead to various types of negative affections like disputes between contractor and client, decrease quality of work and health and safety accidents. There-fore, there is a high necessity for further investigation on delay and cost overrun factors as well as quality and health & safety and suggesting right actions to minimize these kinds of defects

3. Methodology:



4. Factor affecting time overrun and cost overrun

4.1 Stakeholder related factors:

- Delay in revising and approving design documentation
- Work suspension
- Delay in delivering the site to the contractor
- Lack of planning and scheduling
- Poor methods of construction
- Poor communication and coordination
- Delay in material samples and drawings preparations
- Delay in site mobilization
- Ineffective project planning and scheduling
- Delay in design and material samples approval
- Conflict between consultant and designer

4.2 Design related factor:

- Change of design by owner and his agent during work
- Mistake and delay in producing design documents
- Unclear and insufficient details and drawing
- Quality quadits done after completion of the work
- Delay in performing final inspection
- Incurred estimates
- Better and appraisal of project.

4.3 Labour equipment and material related factor: -

- Low productivity of labours
- Slow mobilization of the equipment
- Lake level of equipment operation skill
- Low productivity and efficiency of the equipment
- Frequent equipment breakdown
- Inflation of material price
- Poor quality of material
- Change in material type and specification during the construction
- Late procurement of material

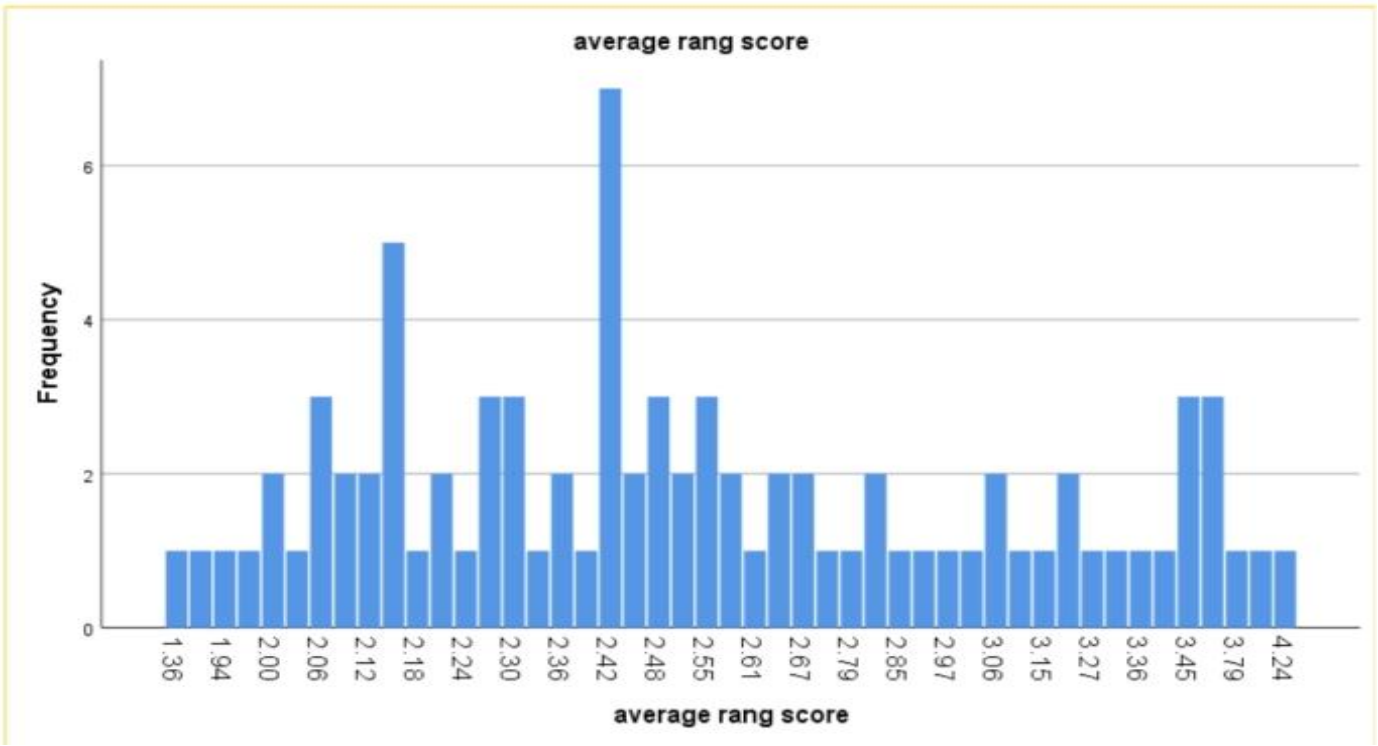
4.4 project related factor:-

- Slow of flow information among members of the project team
- Legal dispute between project participants
- Ineffective delay penalty
- Low managerial skill for all parties
- Slowness decision making among project team
- Delay in giving instruction
- Change in law and government

5. Data analysis

Statistical tests were used to determine the descriptive statistics of the dependent variables. The first test was to investigate whether the sample means of various groups were statistically different or of equal variances. For this goal, SPSS [STANDS FOR STATICAL PACKAGE FOR THE SOCIAL SCIENCES] was used.

The questionnaires were distributed to project managers, engineers, owners and contractors of various construction projects. The characteristics of the respondents participated in the questionnaire survey are summarized and showed in chart



6. CONCLUSION

The objective of this study was to identify factors influencing time and cost overruns in a construction project. we have find 33 Out of 54 causes of time and cost overruns, the most common factors influencing the time and cost overrun were identified by using SPSS software. The most common causes of time overrun are Low productivity of labours. Lake of planning and scheduling, poor communication and co-ordination, Incurred estimates, change in material type and specification during construction . This project identifies key causes of time and cost overrun based on their occurrence and their impact on construction projects. In this paper, there were limitations which were encountered throughout the preparation of this research. Unavailability of adequate documented information and unwillingness in the construction firms (Owners and Project Managers) are some of the limitations

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