



MINI-REVIEW

Construction Projects delays in Sri Lanka

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Received: 20 June 2021; Revised: 10 September 2021; Accepted: 30 September 2021; Available online: 10 Oct 2021

Abstract: The time overrun in construction projects is a common issue around the world then there is no exception to Sri Lanka. This research aims to identify the factors & their significance in how to impact the project time overrun and improve the suggestions for those identified causes. The aim entirely focuses only on the Sri Lankan construction industry. According to the result, project time delays factors were recognized and discussed deeply. Overall results identified the contractor's improper planning, mistakes during construction by contractors, and weather conditions as three major causes of time delays in government-funded construction projects in Sri Lanka.

Index Terms: Construction projects, Project delays, Significance of causes, Sri Lankan construction Industry

1 INTRODUCTION

Sri Lanka is a developing country. Although many construction projects are taking place in Sri Lanka, they are not completed on time, easily affected by delays. The mitigation of construction delays is essential for industrial success. The success of a project belongs quality of the output, completion within time, and remained within the estimated amount. The construction industry captures a significant position in Sri Lankan revenue. So the construction industry now pushes down by other major industries due to delays in construction projects. Especially government or semi-government projects are affected at a high rate by delays in delivery. In construction, the delay could be defined as the time delays either time exceed from specified completion date in a contract or past the date that the parties agreed upon for the handover of a project. It is measured as a standard, costly and complex issue encountered in building construction projects. Because time is essential to clients, the delay leads to loss of revenue through lack of production facilities. For the Contractor, there is a long work period; higher material costs through inflation and labour costs, and higher overhead costs.

On-time project delivery is a scale of efficiency, but building construction works are affected due to many causes and unexpected actions. These causes and actions probably impact construction parties' involvement, availability of resources, environmental & social conditions, and contractual relationships. Generally, it is a rare occurrence that a project is finished within the specified contract period.

2. CONSTRUCTION INDUSTRY OF SRI LANKA

The causes of delays in medium-scale construction projects in Sri Lanka have been identified [1].). Every party has prepared a separate set of guidelines. To solve the problem of delays, the areas were identified need to improve. These guidelines were supposed to ensure that clients would focus on project

management, reducing design, changes during the construction and setting reasonable time targets. In contrast, the main aspects relevant to contractors are efficient project management, financial management, and materials handling [2].

It was based on an analysis of questionnaires answered by 122 professionals. The Important Relative Index (RII) was used to rank these responses. As per the findings of that report, the primary cause of delays in medium-scale construction projects in Sri Lanka was found to be improper project management by the Contractor. Shortage of labour, improper planning by the Contractor, and the clients' financial problems were also identified as other leading causes. The negative effect of delays on medium-scale construction projects in Sri Lanka was also analyzed in the survey above. Although other adverse effects were recognized, the most damaging impact or delays were identified as the time delays. Spearman's Rank Correlation Coefficient approach was used to validate among them for results. This research indicates that guidelines must be developed on factors such as bidding documents, an effective verification process, and recognizing the demand of the client to create the attention of consultants [3].

Primarily considered medium-scale construction projects because the role of consultants is limited for construction projects. This research was carried out to determine the most critical causes of delay in Sri Lankan constructions. It has a wide range of scope and fewer limitations. Therefore, other related researches vary from this based on the approach used [4].

Due to the significant parties actions, a project may exceed the given contract period. Causes of construction time delays arise from many factors. It could be recognized by following three categories [5].

- Causes can be controlled by clients
- Reasons can be ruled by contractors
- Causes for which neither party for which contract has any control

The delay happens because of an action by contracting parties and external forces. Sri Lanka's construction industry is facing a high rate of project completion delays. The causes of construction delays in Sri Lanka have been identified, and stakeholders have individually discussed them. However, most such projects in Sri Lanka are constantly delayed [6].

To measure movement toward group consensus, the Delphi research technique was used [7]. The binomial test was conducted to assess population acceptance for the causes during the first two Delphi rounds. Percentiles and box plots were used for the third Delphi round to classify the essential causes of delays. Based on the Delphi methodology, these established triggers were presented to a panel of construction industry professionals, senior quantity surveyors, senior project managers, senior architects, and senior engineers playing a managerial position. Experts were asked to express their views on the degree of importance of each cause and to summarize the findings statistically. It was reported that there are ten major causes of construction delays in Sri Lanka [8]. Below causes were identified to be most relevant according to the study,

- Poor Planning and Scheduling
- Delay in Obtaining Permits and Permissions
- Poor Site Management
- Design Deficiencies
- Suspension of Works by Owner
- Contractor's Financial Difficulties
- Variations
- Poor procurement methods or the Contractor
- Slow Decision Making by Owner

- Lack of familiarity with local industry

As a first step, researchers have recommended the development of a general preventative framework to minimize the impacts of the most important causes. For further studies, research on identifying the most important causes of sector delays was recommended, and the differences were studied. Essential details are available to prepare the questionnaire for the survey [9].

The Sri Lankan construction industry attempts to find significant causes of construction delays related to contractors in Sri Lanka's major construction projects and the degree of severity of these causes. The causes of delay were identified based on the experiences of engineers working for three government organizations, namely the Building Department, RDA and NWSDB. It measures and represents the magnitude of each cause of delay. As per the severity, causes were ranked as follows [9].

- Poor project planning & scheduling
- Low-profit margin
- Inadequate cash flow management
- Handling of too many projects at a given time
- The incompetence of key staff
- Poor decision making by management
- Insufficient quality control

Sri Lanka's construction industry is rising rapidly, and this can be seen that large buildings such as housing condominiums face massive market competition. To achieve the best possible financial targets and greater customer satisfaction, various parties (clients, contractors and consultants) need to work together to achieve a shared achievable target in these projects. In the final analysis, these projects can often be found to be inadequate as far as the key goals of project management are concerned; time, cost and quality [10].

3. CAUSES ON TIME DELAYS

There are many studies conducted to identify the causes of time delays all over the world. Some causes for the time delay in the construction projects are:

1. Improper planning

Most of the local contractors in Sri Lanka do not mention the work program at starting stage of planning. Some contractors initially submit their proposed work program while bidding but do not work on that flow. Typically consultants check the contractor's work program with their past experiences and proposed project conditions, but they do not take it seriously initially. For the successful execution of a project, it must be well planned earlier [11].

2. Mistakes during the construction

During the construction, mistakes could occur due to accidents on site, improper planning, and lack of engineering knowledge or misunderstanding between parties. For any reason, the mistakes have a huge impact on the time delays of the project [12].

3. Weather condition

Sri Lanka is a tropical climate country. So it's hard to predict the weather variations correctly. Rain is the main factor affecting this cause of time delays. Because of rain, many construction works had been delayed or affected, such as excavation, formwork, concrete work, roofing, plastering, and external painting works. Delays on each progress due to weather could lead to overall project time delays [13].

4. Preparation and approval drawings

Consultants normally prepare the drawings of the project according to the client's requirements. Under the design and build, procurement contractors submit their drawings for the consultant's approval. Delays due to preparation and approval of drawing cause time delays in projects [10].

5. Site management

Proper site management is an essential factor for successful project completion. The contractors should take full responsibility, but in Sri Lanka, some local contractors do not manage the site efficiently. Then lack of site planning, labour management, material management, and controls leads to time delays in construction projects [9].

6. Change order

If clients propose changes or add new features to the construction design when the construction is already going, that cause time delays on the project. And it may affect on cost increase as well. Some procedures should be done again because of changing or adding the requirements, such as preparing drawings, getting approvals, budget plans, inspections, etc. Hence change orders are a must considerable factor of causing time delays [13].

7. Owner interference

The construction process is carried out according to the owner's requirements. Owners provide their all requirements and desires to the consultant or designer. After the construction process starts, clients pay attention to it. At that time, owners, interference with consultants and contractors affects the construction process, such as not permitting to access the site area and restricting the fundamental needs. It causes time delays in projects [14].

8. Slow decision making by owner

All the construction works are carried out after the client's decision. Contractor's need the client's approval documents for their next progress. Without approvals, contractors should don't move to their next progress. When a client delays the decision-making, it affects the project progress and vice versa [15].

9. Shortage

Construction materials are the most important element for a construction project. Contractors always should maintain such needed materials as stock before starting the process. Mostly shortages in materials like sand, coarse aggregates, bricks and cement had a high impact on project time delays. Sri Lanka is a developing country. So far, many construction works have been carried out through the island, and mostly local products are used for the construction purpose. Therefore the materials demand is high; then difficulties occur in getting materials within time, and cost increases [16].

10. Lack of communication with parties

In a construction project, majorly three parties are involved such as client, consultant and contractors. From time to time, communication that includes all required information is very important for the success of a construction project. From the planning stage, communication with all professionals from every party improves the quality of the project. Due to this factor, misunderstandings could occur because of time delays in projects [17].

4. CONCLUSION

Project time delays in construction have a negative impact on Sri Lankan construction industrial development as well as Sri Lanka's economy. There are many acceptable and non-acceptable reasons behind the construction project time delays. On-time project delivery is a scale of efficiency, but building construction works are affected due to many causes and unexpected actions. The main causes of delay of the projects are Lack of communication with parties, shortage, improper planning, site management and,

mistakes during the construction.

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