



e-ISSN: 2319-8753 | p-ISSN: 2347-6710

IJIRSET

International Journal of Innovative Research in
SCIENCE | ENGINEERING | TECHNOLOGY

INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

Volume 11, Issue 3, March 2022

ISSN INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA

Impact Factor: 7.569

9940 572 462

6381 907 438

ijirset@gmail.com

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Assessment of Various Factors Affecting In Delay and Delivery

Mr. Shyam S. Prajapati¹, Prof. Ram S. Ingalkar²

Student, Department of Civil Engineering, Prof. Ram Meghe College of Engineering & Management, Amravati, India¹

Assistant Professor, of Civil Engineering, Prof. Ram Meghe College of Engineering & Management, Amravati, India²

ABSTRACT: Due to the inherent risks and increasing complexity of modern construction projects, delays and cost overruns have become common facts in the industry. Researchers and practitioners have used many techniques to assess project delays and apportion delay responsibility among the parties involved. Survey based delay analysis has been recognized as one of the most credible techniques for analyzing construction delays. Despite its benefits, survey analysis can produce different results depending on the collected data size, it can be consider owner and contractor acceleration, as well as systematically consider the impact of several baseline updates made due to changes in the duration and logical relationships of the activities, and it can consider the impact of the progress events on resource over-allocation and its consequent delays.

KEYWORDS: Delay analysis, construction delay, factors and fuzzy base weighting.

I. INTRODUCTION

Construction industry plays an important role within the economic process of a rustic through the multiple effects of the opposite sectors of economy. Construction is defined as a creation, renovation, repair and demolition of immobile structures and alteration of natural topography. It is somewhat just like the process to satisfy the desired demand of homeowners like modification of specifications and resources within the project schedule, cost and quality. Due to the unique nature of construction project, knowledge gained in coming up with, scheduling and dominant construction method is seldom unfold. This results in value of in- efficiency that is being incurred as a requiring cost. By taking the expenditure of construction industry, the Project Management profession became much valuable in order to create positive the project goes in an exceedingly right track to complete with success.

Delays are unique one in every of the largest issues construction companies are facing today. Delays will result in several negative effects like lawsuits between house owners and contractors, exaggerated prices, loss of productivity and revenue, and contract termination. Thus, comprehensive study on delays in construction projects is important. Present study works on identification and ranking of causes of delay in residential construction projects in Indian context.

II. STATE OF DEVELOPMENT

Delay is quite common in construction projects. Delay can be caused by the Employer, the Contractor, and the third party or the force majeure that the parties to a contract cannot control. Delay to completion of a project could bring significant losses on society as well as the project cost. The damage caused by a project delay is compensated by the Contractor in principle in the form of 'liquidated damage'. However, the Contractor shall claim the extension of time or the recovery of financial burden if the Employer is liable for the cause of delay. In fact, a variety of factors contribute to the delay of project completion in complex interdependencies of a number of tasks. Hence determining the contractual responsibility of delay is the most likely source of dispute in construction projects for transportation infrastructure. Methods used for forensic investigation of delay are called as 'delay analysis methods'. Delay analysis methods are applied to prepare the logical basis to persuade their claims concerning the extension of time and financial burden.

The major concern of the issues in this work is associated with identification of the reasons that are responsible for the delaying nature of the construction process. It has been found that there are some kinds of delay issues those are associated with the project. It is essential for the work to indicate the delay reasons and find out the impact of the delay on the Indian construction industry (Joshi and Khandekar, 2015). Moreover, it is not possible to determine all kind of issues by the project managers during the progression of the construction as some of the issues arise in an unexpected



manner. The work issue is associated with collect the evidence and factors via extensive work and information collection from several case studies.

Pai and Bharath, [1] proposed for the better execution of the work, it is vital for the work to collect and obtain different sorts of relevant and important secondary data or information from authentic sources. These authentic sources may be articles, online databases, work journals, books, and projects. As a result, it can be stated that the literature review section of this work is important, as it will allow the work to collect important data regarding the Indian construction industry. This particular section will also provide important information regarding the theories, information, and concepts with respect to the subject of the study.

Chaphalkar and Sandbhor [2] the Indian construction industry is considered as of the largest construction industry in the world. It can be also stated that the time of 1960 to 1970 is considered as an important phase in terms of the development of the entire industry. During this particular period, the government of India played a vital role to boost the entire industry. At this period, the majority of the construction works were executed by different state-owned enterprises, which were also supported by various government departments as well. As a result, during the first five-year plan, the construction industry of the civil works almost contributed 50 percent of the entire capital outlays. As of now, it is observed that the Indian construction industry is almost employing 33 million people. As a result, it can be stated that there is a huge number of people associated with this particular domain. Another fact, which should be highlighted, is that there are other industries, which are highly associated with the construction industries as well.

Patel and Jha, 2016, Foreign Direct Investment or FDI is considered to be another milestone strategy implemented by the Government of India. The most important aspect of FDI in terms of Indian construction industry is that it has allowed many foreign firms to invest in the industry more freely. The main aspect of the FDI is that the growth rate of the Indian construction industry has decreased over the past decade. As a result, in order to boost up the growth rate, there was a desperate need of investment. The FDI has helped the industry to acquire the needed investment in order to boost the growth rate. It can be also stated that

The FDI has also helped the industry to share the technological aspects as well. This particular phenomenon has helped the industry to change its infrastructure to the global level and at the same time shared the technological advancements with the foreign brands as well. Another important fact, which should be mentioned, is the implementation of the GST bill. The GST bill is considered as one of the most important aspects in case of the costing of the industry. It can be stated that the GST bill has drastically reduced the costing of the essential materials needed for the construction projects. It should be noted that this reduction in the costing of the materials has gradually nullified the effect of inflation as well. As a result, the profit margin of the industry will increase eventually. This will help the entire construction industry to acquire a substantial amount of boost in terms of the growth rate. Though there is a significant amount of positive development of the Indian construction industry, there are several crucial challenges, which is still being faced by the entire industry.

Kona et al. (2016), it can be stated that the physical infrastructure of the country and the development of the physical infrastructure is also an important aspect as it provides the blueprint for the construction industry to develop in a significant way. Adding to this it can be also stated that the planning commission of India is currently planning to invest nearly 320 billion US Dollars for the development purposes of the infrastructure of the Indian construction industry. The 11th planning commission for the betterment of the industry has implemented this strategy. Another fact is that it is also important to build a model or Public Private Partnership. As the construction industry of India is comprised of both the public and private sector, it is important to bridge these two separate categories into one so that the growth of the industry is not halted. Along with this, the management of risk and supply chain is also a crucial aspect as well. In many cases, it has been observed that the construction projects have been halted or delayed due to several issues into the risk management process of supply chain management. As a result, it can be stated that these two aspects of the construction industry should be developed as well.

According to **Akinwumi, 2014** proposed one of the most important strategies, which have been implemented by the government of India in recent times, is the Smart Cities projects. Other important projects which should be mentioned are the "Housing for All by 2022", "Make in India Initiative" etc. the most positive aspects of these projects are that they have increased the impetus of the growth rate of the industry and its infrastructure as well. Another positive aspect is that all these projects consist of latest technological aspects as well by author.

Shanmugapriya and Subramanian (2013), as the current growth rate of the industry is on the lower side, it is not reflecting upon the future prospect and potential of the entire industry. This aspect can be identified as one of the

important factor as many economists have stated that construction industry is one of the most important pillars of the overall development of the country. However, it can be also stated that the government helps and initiatives is making the overall situation better in terms of investments and technological advancements.

Gohar et al. (2012), it can be stated that the Indian economy is facing a huge growth in recent times for the last couple of decades. As a result, it can be stated that it can be seen that majority of the infrastructure development industry has been progressed. However, despite all these positive aspects, the growth rate of the industry has not been on the higher side of the ten percent mark.

Doloi et al. (2012), it can be stated that the amount of investments and technological advancements is one of the major catalysts, which can improve the overall growth rate of the industry. This will also help to attract global brands to acquire significant amount of business in Indian construction industry. For the last couple of years many important and well-known global brands have entered the construction industry of India. For the purpose of intruding the essential change into the current framework of the Indian construction industry, the government of India has implemented several sorts of strategy for the betterment of the entire industry. The most important part of such government initiatives is not only to increase the growth rate current infrastructure of the industry. It also highlights the context of investment in the technological aspects to develop construction process effectively.

A. Aspects of Delay In construction

Ruqaishi and Bashir, 2013 proposed a delay in a construction project is considered as a major aspect as it hampers the overall progress of the entire projects. Adding to this it can be also stated that the delay in construction projects can be caused and categorized differently. In the majority of the cases, either weather issues, lack of money, workforce delay, political disturbances etc, cause the delay in construction projects. From this aspect, the delay in a construction project can be categorized into four major categories.



Fig 1 Causes of Delay in the construction industry

These categories are Critical or Non-critical delays, Excusable delays, Compensable or Non-compensable delays and Concurrent of Non-concurrent



III. CONCLUSION

From the recent events, it can be stated that the construction projects are started at the right time, but in the case of completion, the project is delayed. Another fact is that the projects are delayed by great means such as more ten years. This can be identified as a huge lag in terms of the construction industry in India. However, many works have identified different sorts of causes which are affecting the projects in terms of delay but there is a lack of an effective action plan to overcome these causes. The particular gap between the identification and overcoming the issue should be highlighted and worked upon to prevent delay in vital construction projects

This study is to identify the major cause for delaying construction project. The causes in the projects are clearly identified; delays can be avoided or minimized. From the past literature, some of the most common factors causing delays is identified, they are lack of experience in the work, poor supervision, changes in design during construction by the owner, delay in delivery, co-ordination, project management problem etc.

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