

Reasons for the construction project's delays in the Klang valley

SRIKNATH MIRYALA , SATISH BANDI KUMAR

Department of CIVIL Engineering,

Nagole Institute of Technology & Science,

Mail ID: m.srikanth@gmail.com, bandi.satish@gmail.com

Kuntloor(V), Hayathnagar(M), Hyderabad, R.R. Dist.-501505.

Abstract

Malaysia, for example, is a growing nation that relies heavily on the construction sector. In addition, highway development is critical because it serves as a conduit for people to go from one location to another. The construction business is plagued with delays, and it is difficult to prevent them in a building project. The cost and quality of a project are both affected when a project is delayed. There are several elements that might cause delays in a highway building project, and this research aims to discover which of these aspects are the most important to the overall project. Based on a pilot survey and questionnaire, data is obtained. The next step was to use the Relative Importance Index technique to rank and analyze the degree of relevance. According to the RII rating, the top five reasons were bad planning, weather, poor site management, poor site inspection, and buried utilities. Figures for both the highest and lowest factors were 0.851/0.671.

1.INTRODUCTION

In Malaysia, the building sector has a significant impact on the country's economic development [1],[2]. Project delays have been described as expensive, difficult, and hazardous [3–4]. Investigating a construction project's productivity rate is made easier when delay reasons are examined in the planning stages. Many research have been done on the reasons for building delays, which cover various styles of construction, different countries and a range of delay factors [3]. Because of this, investigating the reasons of delays in the building process is required in order to increase productivity in the construction industry. Because of this, this study aims to determine the factors that lead to delays in the Klang Valley area of Malaysia.

1.1 “DelayFactorsinRoadConstructionProject”

Timing is the most important factor in the success of a highway construction job. There have been several investigations on what causes building to be delayed. According to [4], a lack of good planning is to blame for the project's delays, notably in highway building, which involves a wide range of parties and departments. Among the 20 elements that influence highway building projects, design modifications were identified as the third most important [5]. In addition, the presence of subterranean utilities is a key contributor to project delays. Lines for power distributes, telecommunications, water and sewerage pipes, and natural gas pipelines are some of Malaysia's most important subterranean utilities.. Highway construction may run afoul of buried utilities. Typically, the permission and relocation procedure might take a lengthy period and result in a significant amount of time off work. Rework or additional work is one of the least attractive aspects of building projects [6].

A lack of materials was cited as the second most prevalent reason for building delays [7]. In highway building, the quality of the material is quite important. For example, if the asphalt does not reach the standard, it takes time for fresh asphalt from the quarry to arrive [8],[9],[10]. Because of the increased length of time required to fix problems caused by equipment and machinery breakdowns, proper management of these aspects is critical. Poor communication in the construction business is a major hurdle to attaining excellent cost and time performance, according to previous research done in India [11],[12]. Furthermore, it was discovered that a lack of skilled workers in Norway was a major contributor to the project's late start. Surabaya's weather was shown to be the most critical element in determining the success of a building project. Electrical machinery and equipment failed as a result of inclement weather conditions. According to reports, equipment damage caused a slew of delays and costs for the highway building effort.

In Palestine, it has been noted that poor building methods have become a significant problem in the construction project, which may cause it to take longer than originally anticipated to complete. Another important aspect is the lack of experience of the contractors, who may not be able to keep up with the project's development if they lack the necessary expertise. Poor site research is also regarded one of the most common causes of project failure in Indian highway construction. In the past, studies found that financial concerns were a major contributor to building delays. Infrastructure development

projects in India have been plagued by long delays, particularly in highway projects, owing to budgetary difficulties.

The inability to reach a site is seen as an evident issue that causes the project to be delayed. In road construction projects, delivery of heavy equipment requires a big area for the delivery of a long trailer to access the site in and out, but limited space means that the delivery process will be delayed and the project completion time will be negatively affected. In addition, Malaysian construction delays are exacerbated by poor decision-making. In many cases, delays in construction may be traced back to ineffective site administration and oversight. Proper construction site management and competent on-site monitoring are essential for a project's success to be realized. Accidents on the jobsite pose a serious threat to the lives of everyone on the site. In the construction sector, particularly in highway building, safety and site accidents play a significant role. Land is the most important asset in every building project, big or little, in this sector. Land acquisition is the most common and significant source of delays in Mecca projects, according to the city.

2.METHODOLOGY

There are several ways to collect data, but surveys are one of the most productive. In the Klang Valley, a questionnaire survey was given to all of the technical and expertise participants in the project such as consultants, contractors, development companies, clients, owners, and suppliers or manufacturers. There are three components to this questionnaire: Section A, Section B, and Section C. There are demographic questions in Section A that ask about the respondent's background. Section B of the questionnaire focuses on the variables that contribute to the project's delays, thus the responder should be able to score the elements from 1 to 5 using the Likert scales approach. Respondents' views on any further reasons contributing to delays in highway development are collected in section C.

Relative importance index, or RII, is an index used to define and assess the significance of an individual or a collection of components in a given system. Since the ranking is based on analyzing and reducing the number of criteria, this analysis is critical in this research. The factors will be sorted based on the following equation (a):

$$\text{“RelativeImportanceIndex, RII} = \frac{\sum W}{A \times N} \quad (1)$$

Where:-

W-Weight givento eachattributebyrespondent.

A-Highestweight.

N -Total number ofrespondents.

3.FINDINGSANDDISCUSSION

Table1showstherankingofdelayfactorbasedontherelativeimportanceindex,RII.

TABLE1.Relativeimportanceindex,RII

Factorsthatcauseddelayinhighwayconstruction	RelativeImportanceIndex(RII)	Ranking
Improperplanning	0.851	1
Weather	0.844	2
Poorsitemanagement	0.837	3
Poor siteinvestigation	0.837	4
Undergroundutilities	0.812	5
Landacquisition	0.778	6
Accessibilityproblematsite	0.763	7
Improperconstructionmethod	0.749	8
Late paymentforcompletedworkprogress	0.720	9
Lackofexperiencedcontractor	0.720	10
Siteaccident(safety issues)	0.720	11
Machineryfailure	0.710	12
Late deliveryofmaterial tosite	0.705	13
Latesalaryto labor	0.680	14
Lackofequipment	0.671	15”

The relative relevance index determined that poor planning ranked first, with a score of 0.851. Third on the list of factors is poor site management and also poor site investigation with a score of 0.840. To put it another way, the RII value for both factors was the same. Fifth place went to subterranean utilities, which had an RRII of 0.8112. Improper planning was shown to be the most significant contributor to the highway building project's timetable delay, as evidenced by the results of the more thorough study. Improper planning was shown to be one of the most common causes of failure in a Malaysian study [20]. As a result, poor planning is the most significant influencer in this study. It may be concluded that poor planning has a significant influence on building projects, particularly highway projects.

According to our index, the second-highest relative relevance index score for this research was assigned to the weather, making it a crucial consideration. Researchers believe that weather conditions can have a significant impact on construction projects, and this is especially true for highway construction, which is exposed to its immediate surroundings [5],[11]. Highway development in distant or mountainous areas is particularly difficult because of the higher likelihood of heavy rain in such areas.

In the construction sector, site management is a critical activity that must be carried out efficiently and effectively. A RII score of 0.837 places this lack of site management on the third list of most important factors. In addition, poor site management has been identified as one of the top five causes of building project delays in India [9]. It is also a non-excusable delay, since there will be no more time or funds allocated to address the problem. A project's success is directly related to the quality of its site management. This includes the ability to communicate, input, monitor, and make decisions effectively, as well as the efficacy of coordination and decision making.

Highway building projects' durations are also affected by the length of underground utility lines. The revised poll shows that subterranean utilities are the fifth most important element in determining the value of a property. ' Another typical cause of construction hold-up is the presence of subterranean utilities, which may be particularly problematic for highway projects owing to their lengthy length and the presence of a large number of such services along the project's length. There will be a lot of subsurface utilities to deal with while building a highway in rural or hilly areas, and the relocation of these utilities might take a long time.

4. CONCLUSION

According on the findings, delay factors were assigned a numerical value. According to research, the most significant cause of delays in Klang Valley highway development is ineffective planning. An RII of 0.851 indicates poor planning, whereas a RII of 0.671 indicates a lack of equipment. Poor planning, bad weather, bad site management, bad site inspection, and subsurface utilities were all shown to be key contributors. As a result, poor planning will have a negative impact on the overall productivity of the project. Nevertheless, the weather is a significant element in the development of highways. Construction on highways is notoriously difficult because of the constant exposure to rain and sun throughout the various phases of the project. It is also tough to manage a highway building site due to its lengthy path, which requires a high degree of project management competence. At the beginning of the construction process, site research is critical. Site study on highway construction is critical since it might generate problems such as flash floods and landslides during and after the project's completion. However, the length of time it takes to build a roadway is significantly influenced by the presence of subterranean services. The building process will be hampered if there is incorrect information concerning subterranean services. The first step to minimizing project delays is to identify the primary elements that impact the development of a roadway. Delaying a project might result in increased costs and a decrease in productivity. The identification of variables that contribute to project delays may thus aid in increasing the speed at which highway building projects are completed.

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