

EXTENDED ABSTRACT

THE INFLUENCE OF COVID-19 ON PROJECT IMPLEMENTATION: A PERSPECTIVE FROM SRI LANKAN CONSTRUCTION INDUSTRIES

S. Mathivathany* and S. Priyadharshini

University of Vavuniya, Sri Lanka

* stpmathy@gmail.com; priyad2027@gmail.com

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Abstract

The major function of the construction industry is to build infrastructure. The new Coronavirus 2019 is a highly infectious respiratory illness that has subsequently spread to a global pandemic. The study's goal was to figure out how the COVID-19 epidemic will affect construction project delivery in the Sri Lanka. The research drew 16 project managers from the construction sector as participants. The outcomes of the study indicated that the COVID-19 epidemic has a substantial impact on the projects implementation in the construction industry. According to the study's results, the pandemic resulted in a shortage of access to raw materials and manpower, causing project completion to be delayed. The construction sector has been a victim of COVID-19 to the point that it has halted projects and severely reduced the market of its beneficiaries, according to the research. Construction projects cannot allow distance working that make barrier on-time delivery and putting the construction industry at danger.

Keywords: Covid-19 pandemic, construction industry, project delivery

1. Introduction

The Covid 19 outbreak has put the construction industry, which is the country's most significant sector, in jeopardy. When all official and informal sectors are considered, the construction industry contributes around 7% to Sri Lanka's Gross National Income (Construction Industry Development Authority, 2020). It has a direct employment potential of 6-10% of the entire labor force. The severity of the Covid 19 issue has caused a delay in building projects. The construction business is responsible for building infrastructure to meet the needs of nearly all industries.

COVID - 19 outbreaks in Sri Lanka have had an impact on many elements of everyday life. The construction sector is plagued by two major issues. One is the requirement to modify building methods in order to comply with government-imposed health standards in order to avoid a COVID - 19 epidemics. The other is the requirement to deploy significant resources in order to resume activities that were halted owing to the government's lockdown. If the project team fails to provide the project deliverables within the agreed period, certain private firms may withdraw the contract proposal. The government may also take steps to safeguard its population from the disaster's harmful consequences (Wilhite et al., 2014). In most situations, the restrictions entail restricting people's movement and ensuring that economic activities in the impacted region are changed.

Furthermore, funders are likely to stop supporting projects if they do not achieve the precise goals that should be achieved at each step of the implementation process. Because certain raw materials and funds are not immediately used; they are dispersed, some disagreements over delayed project development and completion may arise in cases of corruption. As a result, the project crew may use the resources to pursue personal goals while leaving the endeavors unfinished (Kerzner, 2017).

The building sector aids in a country's growth. It employs a large number of people. In addition, the suppliers' quality of life depends on sell their products to contractors. The COVID-19 epidemic had a negative influence on this industry (PWC, 2020). The construction sector is experiencing a shortage of trained workers and is also suffering from the Covid-19 virus (Rodela et al. (2020). As a result, the goal of this research is to determine the impact of the COVID-19 epidemic on project delivery in Sri Lanka, with a particular focus on the construction industry. The impacts of the epidemic were the main emphasis.

2. Literature Review

COVID-19 has had a considerable impact on the construction sector and real states (Bailey et al., 2020), to the point where it has halted projects and considerably depleted the market of its beneficiaries. Construction projects, unlike other industries, cannot support remote work and face constraints that make on-time delivery impossible. Chopra (2020) identified them as issues relating to human resources, production industry shutdowns, inflation, reduced working hours and work duration, lower sale and project demands, economic downturn, and increased material and equipment costs. Many expats from Gulf countries have become jobless and have returned to their home countries during Covid-19, resulting in a shortage of human resources or labor. As a result, the construction industry is experiencing a skills shortage. Rodela et al. (2020) published another study in which they claimed that, like other industries, the construction industry is becoming a victim of this COVID. They discovered that the global economic downturn is creating higher inflation, with long-term consequences. The literature on these impacts has been evaluated as a result of this.

The COVID-19 epidemic has had a substantial impact on the construction industry's operations. A large number of project managers have moved to remote working while still guaranteeing that the project's critical systems are operational. During the month of March 2020, 90 percent of project managers were working from home, according to Baldwin and Mauro (2020). In most construction sectors in Sri Lanka, only a tiny fraction of the personnel was allowed to continue working on the project site. The majority of these employees were assigned to high-priority areas, which meant that most project operations were postponed throughout the epidemic. Contractors working on private projects such as residential and commercial construction have also resorted to homeworking, with the majority of them devoting one or two days at project sites. The shift from work to home supervision has had some negative consequences, particularly in terms of inadequate resource management at the site.

In addition, due to decreasing activity at the site, the project managers have been compelled to terminate some of the project team members. The epidemic of COVID-19 has limited the number of activities that can be carried out at the project site. Individuals must maintain a social distance under current covid prevention legislation. This means that workplace gatherings have been abolished, causing management to minimize the number of employee representatives on the job. According to Ruiz-Torres et al.,(2015), a reduction in the number of personnel impacts not only the period of completion but also the quality of output. The project will take longer to complete when the personnel is reduced. In addition, the workforce decrease forces the remaining employees to overwork in order to fulfill the deadlines. Because they may be compromising their health, the overburdening may have a negative impact on their productivity. As a result, they will not participate in subsequent project activities, which is a factor that will most likely cause delays in completing project deliverables (Ammendolia, et al., 2020). These rules have a detrimental impact on the project

because the deliverables will not be completed within the specified periods. Furthermore, the lack of workforce oversight has had a severe impact on the quality of the job produced. Supervisors usually supervise project activities from the comfort of their own homes. This supervisory approach makes it difficult for project managers to develop any flow in the implementation process, which is likely to impair the quality of the final deliverables.

3. Methodology

The construction sector in SL served as the study's population. Given its size and importance as a source of employment, the industry is one of the largest in the country. The domestic construction sector in Sri Lanka encompasses a wide range of specialties that are either publicly or privately operated. Public and private housing, urban development, roads, bridges, and highways, airports, ports, and fishing harbors, water supply and sewerage, tourism industry, irrigation and agriculture, and manufacturing industry are the areas covered for the examination. They were diverse in terms of length of service in the sector, educational attainment, age, and gender. The sample was chosen using a purposive sampling approach in private and public sector project organizations. The respondents in this case were supposed to be project managers working for a construction business. A total of 16 construction project managers were randomly selected for this study. In order to collect data, the study used an interview format with self-administered questions. To obtain meaningful data, the questions were created based on the study goals. The obtained material was analyzed using thematic analysis. For easier analysis, the obtained data was initially organized into topics. The study also discovered the effects of the COVID-19 epidemic on the construction industry.

4. Result and Analysis

4.1 Effects on Raw Materials for the project implementation

The first step was to change the hours of operation of businesses. As a result of the new restrictions, several of the small businesses that sell building supplies were unable to function for the full 24 hours (Baldwin Mauro, 2020). The lockdown and curfews have aided in restricting the spread of the disease to a large extent. Businesses, on the other hand, can fulfill their sales objectives over extended periods of time, with construction enterprises compelled to postpone activities owing to a shortage of raw materials. In Sri Lanka, there have also been mobility restrictions (lockdown and curfew) across regions. The restriction of movement has had an impact on company operations. Some businesses that relied on the importation of raw materials were unable to obtain the necessary manufacturing inputs. A large number of contractors were unable to import building supplies. Additionally, owing to the restricted hours of work, the constructors were unable to obtain some of the required building supplies from within the company.

4.2 Effects on Sourcing of Workforce

The COVID-19 epidemic has also reduced people's ability to associate, which has become a factor that is likely to influence labor sourcing. The Sri Lankan government has taken stringent efforts to disrupt the virus's transmission cycle. According to the social distance guideline, everyone should shun social events. The building industry has suffered as a result of this policy. As a result, project managers have kept just a limited number of people on the job. The reduction in the project management team has also hampered building progress, because the fewer the employees, the longer it takes to complete each of the specified deliverables.

Accessing and recruiting labor has also become a difficulty, affecting the construction industry's operations. Curfew regulations make it difficult for construction workers to go to remote locations. Outsourcing, according to 90% of respondents, might be costly to the project team since the personnel would compel the firms to incur transportation and maintenance expenditures, perhaps

jeopardizing their financial stability. The construction industry's recruiting procedures for managers and workers have also been hampered by social distance rules.

The degree to which workforce members acquire new skills and information, as well as their level of application, determines project management competency. Because construction workers do not interact with their coworkers, the lack in mobility has hampered their capacity to learn new skills. The difficulty is that the technical abilities required in the building sector cannot be theoretically taught through internet communication channels. As a result, the workforce's skills may not be enhanced, which is a problem that might affect human productivity in this industry. Project managers observed lower productivity in workers who were exposed to pandemics like the COVID-19. Some junior contractors may have family members who are experiencing difficulties as a result of the risks, which is a factor that reduces their productivity. As a result, it is correct to assert that an individual's mental and general health status is a factor of the quality of output they achieve in their tasks.

4.3 Effects on Project Beneficiaries

Citizens and private entities are the beneficiaries of building sector projects. 89% of those polled agreed that the epidemic had caused delays in project completion, affecting economic activity. As a result, they continue to rent premises, which raise their operational costs, according to them. The government has started plans to enhance these roads as part of its infrastructure development projects in order to boost commercial activity in the area. However, because of the limited movement of the labor, the COVID-19 has changed the implementation of infrastructure development projects.

The interviews show that the COVID-19 epidemic has serious negative consequences for the building industry. COVID-19's varied effects on raw material availability, manpower, and raw materials have all caused delays in the project's completion, affecting the beneficiaries. The goal of this research is to determine the impact of the COVID-19 epidemic on project delivery in the construction sector in Sri Lanka.

4.4 COVID-19 and the Construction Industry

The construction industry has been hit the worst by the COVID-19 epidemic. During the pandemic, a large percentage of project managers (90%) worked from home. In most of the construction businesses in SL, just 5% of the crew was allowed to remain working on the project site. The majority of these employees were assigned to high-priority sectors, which meant that most project operations were postponed throughout the epidemic. Contractors working on private projects such as residential and commercial construction have also resorted to homeworking, with the majority of them devoting one or two days at project sites. According to 85% of respondents, the transition from work to home monitoring has had some negative consequences, notably in terms of inadequate resource management at the site.

The epidemic of COVID-19 has limited the number of activities that may be carried out at the project site. The reduction in staff numbers has an impact on not only the time it takes to complete tasks, but also the quality of the results. The project will take longer to complete when the staff is decreased. As a result, they will not engage in following project activities, which is a factor that will most likely cause delays in completing project deliverables. 94% of respondents believe the restrictions will have a negative impact on the project because the deliverables will not be completed within the specified deadlines. Furthermore, the absence of worker monitoring has had a severe impact on the quality of the job produced. This supervisory approach makes it difficult for project managers to develop any flow in the implementation process, which is likely to influence the quality of the final deliverables.

The COVID-19 epidemic has an influence on the number of months it takes to complete a project in the construction industry, according to 95% of respondents, which is approximately six months. Furthermore, the findings suggest that, compared to before the pandemic, contractors are taking longer to finish work during the COVID-19 period.

5. Discussion

The goal of the study was to see how COVID-19 affected project implementation in the construction sector in Sri Lanka. The findings of the survey indicated that the epidemic has had an impact on the time it takes for contractors to finish projects. Essentially, the findings suggest that the COVID-19 pandemic slows project completion rates, putting the construction industry's stability at risk.

According to Baldwin and Mauro (2020), the epidemic has compelled many project supervisors to work from home and monitor their juniors using online platforms. Some project deliverables were also collected and transmitted to management using a digital communication platform, according to the authors. The COVID-19's requirement for this type of monitoring may have caused delays in project completion. Another cause for the delays in the execution of projects in the construction sector is a lack of access to the procurement of raw materials. The majority of respondents said that the lockdown and curfews imposed to fight the virus' spread made it difficult to get raw materials for construction.

The majority of the study's respondents said that they freed 55-75% of their staff to work on building projects, leaving just a handful to work on projects with a high level of urgency. The necessity to safeguard employees from contracting the virus, according to the respondents, hampered project development because most of them stalled after the employers were permitted to stay at home.

6. Conclusion

COVID-19 has had an impact on a number of industries, including the building industry. The goal of the study was to see how the epidemic affected the time it took to finish projects in the construction sector in Sri Lanka. The study's findings indicated that there is a difference in project completion time before and during the pandemic, which is conditioned by COVID-19's impacts on the number of months it takes contractors to finish projects. The building industry was badly impacted by the methods because contractors were unable to get raw materials, which created a barrier to their operations. Furthermore, the study discovered that restrictions on movement had an impact on the construction industry's labor mobility. As a result, the contractor turnover rate was quite high. The researcher also discovered that some project managers worked from home and only visited building sites on rare occasions. Their failure to oversee the projects adversely harmed the productivity of the younger contractors, who therefore failed to meet the deadlines. There is a strong probability that the epidemic will last longer than predicted, necessitating the adoption of measures capable of fighting its spread while also guaranteeing that other vital sectors are protected.

The researcher suggests that numerous further investigations be done based on the current study. To begin, comparable research should be conducted in other fields of endeavor to determine the impact of the pandemic on other industries. Furthermore, another research should be conducted to determine the most effective ways for dealing with the detrimental impacts of the COVID-19 epidemic on the building sector in Sri Lanka.

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