INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY: APPLIED BUSINESS AND EDUCATION RESEARCH
2023, Vol. 4, No. 6, 1758 – 1766
http://dx.doi.org/10.11594/ijmaber.04.06.01

Research Article

Causes and Mitigation Schemes of Project Delays among Selected Construction Companies in Cebu City

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Article history:
Submission May 2023
Revised June 2023
Accepted June 2023

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ABSTRACT

A project's completion is crucial because it shows that goals and objectives have been met, guarantees client happiness, upholds a project's good reputation, and creates new prospects for those working in the construction business. However, in the field, construction projects need help with their timely execution and successful execution due to project delays, which can also affect costs, schedules, and stakeholder satisfaction. Hence, this phenomenological study explores the lived experiences of the project engineers who have existing projects on what are the perceived factors that cause project delays. On top of that, the study forms a series of recommendations to mitigate the identified causes of project delays. Eight (8) key informants were chosen using purposive sampling to be interviewed individually. In using Colaizzi's approach, eight themes materialized in the study: (1) Poor Management, (2) Limited Manpower, (3) Unskilled Workers, (4) Unforeseen Circumstances, (5) Poor Communication, (6) Financial Capabilities, (7) Insufficient Resources, and (8) External Factors. Ultimately, the authors concluded the need for solid project management practices, proactive risk reduction, and efficient communication to reduce delays and guarantee good project outcomes. Also, the authors concluded that if the entities appropriately and situationally consider these mechanisms recommended in the study, they will result in more precise and targeted responses to project delay issues, leading to service excellence and customer satisfaction.

Keywords: *Cebu City, Construction Company, Mitigation, Project Delays, Qualitative Study*

How to cite:
Dela Cruz, R. D. & Polinar, M. A. N. (2023). Causes and Mitigation Schemes of Project Delays among Selected Construction Companies in Cebu City. *International Journal of Multidisciplinary: Applied Business and Education Research*. *4*(6), 1758 – 1766. doi: 10.11594/ijmaber.04.06.01

Introduction

The construction industry significantly contributes to the growth of the Philippine gross domestic product (GDP). As per the Philippine Statistics Authority (PSA), the Philippines' gross domestic product (GDP) increased by 11.8% in the second quarter of 2021.

Construction had the highest quarterly growth rate of 25.7%, followed by manufacturing at 22.3%. Other industry sectors that experienced growth included electricity, stream, water, waste management (9.8%), mining, and quarrying (0.8%). Similarly, the construction industry contributed 69.6 percent of the country's total capital investments or gross capital formation (GCF). Construction accounts for 16.6% of GDP in terms of expenditure. Despite the pandemic, the construction industry came in second with 1.7% points as one of the top contributors to GDP growth in Q2 2021, trailing only manufacturing (3.9%) and wholesale and retail trade (1.0%).

Construction delays could be defined as time overruns either beyond the completion date specified in a contract or beyond the date agreed upon by the parties for project delivery. It is a project running behind schedule and is a common issue in construction projects. In some cases, delays result in higher overhead costs for the contractor due to more extended work periods, higher material costs due to inflation, and labor costs increase. On-time project completion is a sign of efficiency, but the construction process is rife with variables and unpredictable factors rooted in many different areas. These sources include but are not limited to the parties' performance, the availability of resources, the environment, the involvement of other parties, and contractual arrangements. Nevertheless, it is unusual for a project to be finished in the allotted quantity of time.

Since time is an essential component of every construction plan and can affect each party's contractual obligations, delays must be kept to a minimum to prevent time and cost overruns (Gardezi et al., 2014; Nahidi et al., 2017). A construction delay has numerous social and economic effects as well. Various negative consequences of delays have been identified by researchers currently at work Tafazzoli and Shrestha (2017), for instance, claimed that the financial, social, and environmental triple bottom lines of sustainability are all negatively impacted by construction delays. According to Hassan et al. (2017), delays can result in time overruns, cost overruns, decreased profits for contractors, losses for owners due to prolonged construction phases, mistrust between owners and contractors, legal disputes between various parties, and complete project abandonment. Gebrehiwet and Luo (2017) indicated in their study that additional critical effects of a delay include cost overruns, contract termination, arbitration, and litigation. Delays, as per Ametepey et al. (2017), lead to time and cost overruns, contractor delays in loan repayment, disputes, and subpar work. Moreover, Khattri et al. (2016) expressed that delays can result in disagreements, cost overruns, time overruns, abandonment, negotiation, legal action, litigation, and complete desertion.

Despite economic growth, construction is experiencing project delays and unexpected costs. A project is delayed when it fails to meet its deadlines or milestones. Several factors, including poor planning, communication, and a lack of resources, can cause delays. Project delays impact both the timeline and the quality of your project. Unforeseen roadblocks can lead to costly changes in scope or resources, affecting the final product or deliverable. As a result, being proactive in dealing with project delays and managing stakeholder expectations is critical.

A few projects in Cebu City are experiencing delays; one is the Cebu City Medical Center Phase 2 project in the public sector. In its report from 2021, the Commission on Audit outlines several inferences regarding the finances and financial transactions of the Cebu City Government, including the delays in the P299 million project. According to COA's audit report, delays in decision-making, the use of unreasonable time extensions, and problems with calculating contract time have denied the constituents of the much-needed facility, particularly during this period of the health crisis.

In 2019, the contract to build Phase 2 of CCMC was awarded to C.E. Padilla Construction Inc., which was given 180 calendar days to

finish the project. Thus, the project should have been finished on September 30, 2019. However, COA's report said that as of December 31, 2021, or two years and eight months since the start date, the project was still only 75 percent accomplished. The project would have been very timely because a year after the project was started (in 2019), an unprecedented health crisis erupted, and a reliable health facility immediately became one of the significant public concerns," read a portion of the report, as per Sunstar (n.d)

Project delays are common in the construction industry and significantly impact their success. Construction delays are the result of numerous factors. This study aims to identify and analyze construction project delay factors using the relative importance method. The pandemic is causing previously unheard-of construction project delays, disruptions, and uncertainty. Travel restrictions, social exclusion, and quarantines delay project completion and drive-up costs by disrupting supply chains, contractor workforces, and government personnel's availability for project inspections. This article highlights steps developers and owners dealing with projects impacted by COVID-19 should take to mitigate the project impacts and offers advice to them. Furthermore, the impact of COVID-19 on construction projects varies across all regions and countries. Almost all construction must stop, per the directive of the Office of the President and the Department of Health.

When a project's activities proceed more slowly than expected due to factors involving the client, consultant, and contractor, there is a delay in the construction process. Poor communication between contractors, subcontractors, and property owners frequently causes construction delays in both heavy and light projects. These misunderstandings and unreasonable expectations are typically avoided using detailed critical path schedules, which outline the work, the timetable to be used, and, most importantly, the logical sequence of events for a project to be completed. Because there is typically a construction loan involved with interest, management staff assigned to the project whose costs are time-dependent, and ongoing inflation in wage and material prices, delays in construction projects are frequently expensive. Additional legal construction forms like change orders, lien waivers, and addenda may be necessary for more complicated projects, as problems not foreseen in the original contract may arise.

The authors found substantial literature on the causes of project delays, but it is centralized in foreign countries. Only some pieces of literature found by the authors cover the Philippines, particularly Cebu City. Thus, it boosted the desire of the authors to contribute new knowledge in the construction industry field. With that in mind, the authors of this study intended to investigate the causes of project delays as experienced by construction professionals who have current projects in the year 2022-2023. Consequently, the authors will form recommendations that can mitigate these causes and lead construction entities to be more effective and efficient in handling projects.

Domains of Inquiry

The study was expected to unearth the lived experiences of the project engineers among the selected construction companies, the results of which will be the bases for advancing mitigation schemes.

Specifically, it endeavors to address the following inquiries:

1. What causes project delays as experienced by construction professionals?
2. How do the causes of the areas above affect the firm's overall performance?
3. What proposals for mitigation can be advanced based on the results?

Methods

From the standpoint of its mode of inquiry, this study was classified as purely qualitative research, specifically using the Husserlian phenomenological, which aims to understand the intensely lived experiences of the key informants on the causes of project delays in selected construction companies in Cebu City.

The research was conducted in Cebu City, where the construction companies are headquartered. These companies offer various services depending on each specialist's expertise; some focus on residential and water structures.

Although they vary, they typically all have some common or standardized parts. Cebu is the oldest city in the Philippines. It serves as the Visayas' commercial, trading, and tourism hub. Cebu has much to offer for business and pleasure, with ancient Spanish forts, spectacular marine parks, delectable food, and booming commercial parks.

The key informants of the study were construction professionals who have worked on projects in the last three (3) years, specifically, project engineers who had recurring roles in the firm and working on current projects. They were asked, informed, and signed the consent form to show their willingness to engage in data collection. Moreover, using purposive sampling, the study drew eight (8) key informants to participate.

The study used a semi-structured interview as a means of data collection using an interview guide prepared by the authors and verified by experts in the construction industry through content validity to obtain vital information from the participants. Gabiana et al. (2023) supported the claim of the authors of the study to ensure that competent people in the field must check the interview guide. Also, Torrero et al. (2023) state that interviews are a qualitative study method that depends on asking questions to gather information. Interviews frequently involve two or more people, one of whom is the questionnaire.

In collecting data, the principal author recorded the one-on-one interview with the project engineers of the two construction companies who voluntarily participated in the study. The collected information served as the heart of the study as it contains essential information.

A variety of techniques may be used to obtain qualitative data. Making sense of the information gathered from the key informants' firsthand descriptions of the causes of project delays is the most significant most excellent way to prevent content discrepancies. The interview transcripts, which will be meticulously reviewed precisely, will include each participant's exact.

The Colaizzi (1978) approach was used in the study to analyze qualitative information. Colaizzi's phenomenological method can be used to interpret people's experiences confidently and fully. Praveena and Sasikumar (2021) expressed the steps in Colaizzi's way as follows: (1) each transcript was read and reread to gain a broad understanding of the entire content; (2) significant statements about the phenomenon under study were extracted from transcripts; (3) formulated meanings were gleaned from significant statements; (4) organization of formulated meanings into clusters of themes; (5) incorporation of findings into a detailed description; and (6) description of the underlying framework.

In this qualitative study, the following ethical protocols were seriously observed:

Safeguarding Human Rights: All stages of the investigation in this study were conducted with the protection of human rights in mind. To achieve this, the authors protected confidentiality by not including identifying details or statements about the key informants in the interview guide. Furthermore, as a gesture of kindness and generosity, the key informants were treated justly and honestly without being in danger or suffering unwarranted harm.

Benefits. The key informants in this study were able to reap possible rewards from taking part. They would have access to a potentially helpful intervention they might not have otherwise. Additionally, individuals would feel safe and at ease due to being able to speak openly and honestly about their condition or issue. Additionally, students learned about the reasons behind project delays from project engineers working on projects that will be completed in 2023-2025 in Cebu City, Philippines.

Risk. Regarding risk, participating in the study could endanger the key informants. During the interview question-answering procedure, they would experience bodily discomfort, including exhaustion and boredom. Self-disclosure, introspection, or mental pain when responding to interview questions could cause psychological or emotional anguish. Additionally, social concerns, including status loss, privacy invasion, and loss of time, could occur during the data collection procedure.

Results and Discussion

Table 1. Causes of Project Delay

No.	Themes	Entity Alpha	Entity Bravo
1	Poor Management	Inexperienced project in charge	Ineffective communication
2	Limited Manpower	Salaries are being delayed, and salaries are being offered very low.	Subcontractor invoices should have been paid on time.
3	Unskilled Workers	Inexperienced workers	There is no trade test for subcontractor workers.
4	Unforeseen Circumstances	Inadequate Planning	Inadequate Planning
5	Poor Communication	The process and goal should have been communicated.	Inefficient Communication
6	Financial capacities	There needs to be an insufficient budget based solely on invoices received; if the main contractor delays payment, the subcontractor will be impacted.	There is a sufficient budget based on the contract agreement, but payment is delayed due to the process and requirements for invoice release.
7	Insufficient Resources (Supplies, Equipment & Suppliers	Looking for affordable suppliers and poor logistic/procurement strategy	Procurement/Logistic Delay
8	External Factors (climate, regulations, and geographical issues)	Inadequate planning and, communication & connection	Inadequate planning and communication

Construction project delays can have multiple hazardous consequences and hurt overall project performance. Such consequences result in the disappearance of a project's economic benefits, according to Memon et al. (2011). A time overrun eventually leads to a cost overrun, which is one of the key performance indicators for a project. In the construction industry, delays are defined as a loss of efficiency and productivity (Sanni-Anibire et al., 2020). Delays can cause multiple issues in the construction industry legal battles, cost increases, project delays, productivity, financial losses, and contract failures (Sambasivan & Soon, 2007). According to Trauner, Delays hurt the interests of project stakeholders by increasing the project's cost. Delays are regarded as significant factors threatening the success of most projects. (AlSehaimi et al., 2013; Azhar & Choudhry, 2016).

Poor Management: It means hurting manpower and the company. Instead of leading them to a successful path, a poor manager or leader holds them back. Today, poor management can take many different forms. However, they all result in low-functioning teams. Moreover, they all involve failing to put people first (Bernard, 2022). Al-Wadei (2020), in his article posted on the Project Management website, found that change in an organization's priorities is the leading cause of a project's failure. It can be concluded that management who lacks commitment to any project will prevent their projects from being delayed and thus result in loss of income. As noted by Khalid (n.d.), poor planning and management of construction projects can have detrimental implications on how quickly they are completed. Construction holdups and scheduling problems frequently turn profitable endeavors into unsuccessful enterprises.

Limited Manpower: It is well-known that the construction industry is experiencing a labor shortage, as many businesses report a labor shortage despite rising demand. With the industry booming in sectors such as residential

housing, commercial properties, and public works projects, the workforce required to complete these projects is in short supply. During the mid-2000s recession, the construction industry lost approximately 2 million workers. Following the recession, many employees have yet to return to their jobs. Furthermore, attracting new workers to the industry has proven to be complicated. Despite the abundance of high-paying jobs in this field, young workers prefer to work in social services and healthcare rather than skilled trades. Furthermore, the existing workforce is nearing retirement age, with approximately 32% of construction industry workers over 45. (RenoQuotes.com, 2023).

Unskilled Workers: Another major issue confronting the industry is a decline in quality and productivity. There are less effective management strategies in the early stages of a project due to a need for more skilled laborers, including project managers and supervisors. This lack of management and leadership can result in costly delays and problems during the project's initial and final stages. The construction industry is a fiercely competitive one. As a result, contracting firms cannot afford to hire inexperienced or underqualified workers because it will cost them more time, energy, and money in the long run. (RenoQuotes.com, 2023). Ramabhadran (2018) came to the conclusion that careful estimate, brainstorming, cost control considerations, procurement planning, resource mobilization at the precise time of demand, and worker training are the best mitigation strategies.

Unforeseen Circumstances beyond human control are one of the primary causes of project delays. Natural disasters can happen at any time, causing delays in your project. The same applies to other critical factors, such as the political or economic climate. Consider the case of construction project management, where 39% of projects were halted due to the global pandemic, i.e., Covid-19. These delays are unavoidable and must be accepted by all project stakeholders. Poor Planning and Monitoring. (Kashyap, 2023).

Poor communication has many effects and consequences in the construction industry, such as cost overruns, time overruns, disputes, and project failure. It was proven that unsuccessful communication leads to unproductive outcomes (Teo. W.M.). Project Management Institute (PMI) investigated communication in organizations, specifically in construction projects, and found that adopting effective communication during project construction can help meet the project's stipulated goals and objectives. It also found that highly effective communication can achieve better time and cost management in producing successful projects. Quality consciousness may lead to better communication, which may lead to incorrect material specifications and rework, as stated in the study by Polinar et al. (2020).

Financial Capacities: A mistaken estimate for a construction job can be extremely costly. Some jobs are shut down for weeks, months, or even years. Accurate estimates ensure that there is always enough money for materials, wages, and other expenses. (Viewpoint, Inc., 2023). The above findings corroborate the findings of Polinar et al. (2020) that a lack of financial liquidity causes a project delay, particularly when the entity cannot meet its present financial obligations. The authors recommended that to mitigate the identified cause, the entity should include provisions for a stand-by loan arrangement payable upon the projected time contract payment by the client.

Insufficient Resource (Supplies, Equipment & Suppliers: A lack of resources in project management does not have to be disastrous. One of the most vital attributes of a project manager's job is to figure out how to make things work while staying within budget constraints. Materials, equipment, and workforce are all examples of resources.

External Factors (climate, regulations, and geographical issues): We cannot control the weather (though it would be great if we could!). Understanding that extreme weather cannot be controlled allows you to plan, which can make a difference. Allow for a slower pace in the timeline if the weather is hot and humid or cold and snowy, and follow safe crew practices. Providing a crew with waterproof clothing and appropriate jobs can help keep things moving when evil weather strikes. Another weather-related factor you can influence is how your business will be affected in a natural

disaster. If a tornado, hurricane, flood, fire, or earthquake occurs (Viewpoint, Inc., 2023).

Conclusion

Examined in this study, the following factors contribute to delays at the Cebu City construction companies poor planning and scheduling; slow/poor decision-making processes; a lack of resources (suppliers and human resources); poor communication and coordination between parties; a slow quality inspection process of the completed work; design changes during construction/change orders; and a lack of commitment from the sponsor, owner, and client Change orders and design modifications made during construction; late payments to the contractor(s); inadequate planning and scheduling; poor site management and supervision; incomplete or improper designs; bad contractor experience; inadequate building methods and approaches; contractor's financial difficulties; sponsor's, owner's, and client's financial difficulties; a lack of resources (people, machinery, and equipment); and poor labor productivity and a skills gap.

The study on project delays in construction firms concludes by emphasizing delays' adverse effects on project timeframes, costs, and stakeholder satisfaction. It underlines the need for solid project management practices, proactive risk reduction, and efficient communication to reduce delays and guarantee good project outcomes. Aside from that, implementing the crafted recommendations will aid project engineers, and the company in mitigating the impact of the project delays. Following the abovementioned discussion, construction companies can improve their reputation, productivity, and financial success.

Recommendations

The authors recommended carrying out the listed mitigation below:

1. **Establish the project's scope.**

   If the scope needs clarification, there might be a discrepancy between what you delivered and what the customer wanted. If there are errors, the rework activities will ensure that the project's schedule is completed on time. We must first make sure to carefully compile the customer's requirements so that the scope is clear.

2. **Increase communication frequency**

   Make sure your team is aware of anything that could cause project delays, whether it is a change in plans or a shift in client expectations. Every project team member must be fully aware of the project plan. Each member must have access to all tasks and deadlines.

   Effective communication ensures that everyone is current on the project and comprehends what is expected of them. Avoiding misunderstandings is the best way to avoid potential delays.

3. **Right Resources**

   The right resources will provide accurate estimates and complete tasks immediately. Talented resources will focus on project goals and ensure that they are met. They will be more efficient and less prone to stress. They will be creative and problem solvers. Furthermore, they could work through the plans with basic project management knowledge.

4. **Pro-Active In charge**

   As a proactive in charge, you must keep track of all goals and milestones and work to improve productivity and efficiency by changing and improving the tasks at hand.

   Also, ensure that your communication channels are open and effective. Make sure your team has enough opportunities and feedback reports to bring issues to light as they occur. This will allow you to find solutions promptly. This will help with task completion while also ensuring work quality.

5. **Monitoring and Evaluation of the Project Schedule**

   Once you have created project schedule starting points, you can compare actual progress to the planned schedule. Examine the schedule baseline to determine whether you are ahead or behind schedule. Examine the actual progress data as well.

   When comparing the schedule baseline to the project progress, you should act if you find a delay. Furthermore, you must act immediately if the project has depleted its buffers. Please take action to avoid further

project delays and finish the project on the deadline. As a result, the project in charge must be knowledgeable about various project management techniques to resolve the project delay.

6. **New Technology Adaptation and Exploration**

Construction automation software deployment has accelerated, with a greater emphasis on project execution and management. Engineers and contractors have grown accustomed to modeling buildings and infrastructure using design software. However, technological advancement in other areas has frequently needed to catch up. Industry-wide adoption of process automation technology and its capabilities for streamlining the project lifecycle is underway.

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