

Navigating Delays and Disruptions: A Qualitative Study on Crisis Leadership in Construction Projects

Maricel P. Valentin

<https://orcid.org/0009-0005-8231-3530>

maricel.valentin@fvalentin.com

University of Perpetual Help System DALTA
Las Piñas City, Manila, Philippines

DOI: <https://doi.org/10.54476/apjaet/35174>

Abstract

This study examines construction managers' crisis leadership approaches in response to disruptions that impact the continuity and completion of projects. The study examines how leaders handle both internal and external crises, including weather crises, shortages of labor, and supply chain crises, in commercial and government projects. Qualitative data about construction managers' crisis management activities were obtained from five experienced construction managers using semi-structured interviews, and thematic analysis of data suggested overarching themes comprising proactive leadership, the necessity for calm and orderly supervision, and the roles of preventive strategies and adaptive reaction. Organizational factors, comprising adaptive leadership, company culture, and behavioral communication, were also suggested by the study as crucial in the development of crisis reaction capacity. The study also established that successful crisis management is not solely concerned with rapid decision-making in emergencies but also with continued reflection in the aftermath of crises so as to learn from them and make improvements in future project plans. The learning from earlier crises is transferred to future projects, and resource allocation, redundancy, and adaptability are accordingly valued by them. The study contributes to construction management knowledge by presenting a nuanced leadership in crises and includes practical recommendations for the development of resilience and performance in emergencies.

Keywords: Crisis Leadership, Construction Management, Resource Allocation, Crisis Response

Introduction

The construction industry is widely recognized as a vital contributor to global economic development, with its projects serving as critical drivers of industrialization, employment, and infrastructure advancement. In the Philippine context, construction plays a central role in national development programs, encompassing urban housing, transportation networks, and large-scale infrastructure investments. The resilience and efficiency of this sector are therefore not only essential for economic stability but also crucial for the realization of long-term developmental goals (Sambasivan & Soon, 2007; Doloi et al., 2012).

Even though construction projects are crucial from a strategic point of view, they are perpetually

Proceedings of the 2nd International Conference on Economics, Engineering, and Social Sciences (ICEESS)

27 – 28 September 2025, KK Sapa Hotel, Sapa, Vietnam

Valentin, M. P., *Navigating Delays and Disruptions: A Qualitative Study on Crisis Leadership in Construction Projects*, pp. 254 - 266

plagued by delays and disruptions. These are more than just logistical hassles—they often become crises of broad impact like cost overruns, incomplete work, strained stakeholder relationships, and loss of faith in infrastructure initiatives. Empirical surveys pinpoint delays as a “chronic problem worldwide,” emphasizing the systematic and ubiquitous nature of these weaknesses (Doloi et al., 2012). In the Philippines, these are often accompanied by prolonged project schedules, aggravating inefficiencies and eroding faith in the construction sector (Sambasivan & Soon, 2007).

The intrinsic complexity of construction projects increases their exposure to disruption. Projects involve complex interdependencies between teams, tasks, and technologies, in which subtle variations have the potential to cascade into full-scale crises. Classical management strategies—reactive and linear in nature—are inappropriate for these conditions, as they are not adept at sensing adaptive and systemic strategies appropriate for turbulent environments. Therefore, delays and disruptions need to be recognized as much as project management shortcomings as manifestations of latent organizational and leadership shortcomings (Sambasivan & Soon, 2007).

Leadership, therefore, is a determinant of project continuity and resilience. Project leaders are more than schedulers and administrators of deliverables, but they are also called upon to handle uncertainty, ambiguity, and conflict while sustaining team spirit and stakeholders' trust. Crisis leadership, characterized by anticipatory risk management, adaptive strategy, and learning, is emerging as a sine qua non in handling construction projects around disruption. Nevertheless, studies have indicated a gap between construction project complexity escalation and mainstream leadership models (Boin et al., 2017). Current literature has listed reasons and results of construction delays in detail. A single meta-review, for example, tallied up 149 different reasons in 97 studies (Doloi et al., 2012). The literature, however, focuses more on technological and procedural delay avoidance strategies at the expense of leadership behavior and crisis decision-making, leading to a gap in knowledge about how local project leaders, in this case, Filipino project leaders, exhibit—and depart from—the world's best crisis leadership practices (Sambasivan & Soon, 2007).

This gap is all the more urgent in the wake of recent crises like the COVID-19 pandemic, supply chain collapses, regulatory crises, and natural hazards, all of which have laid bare construction systems' weakness. These crises demand leaders with adaptive foresight, flexible decisions, and effective communication strategies to maintain organizational performance in the face of volatility (Boin et al., 2017). In these environments, leadership effectiveness not only determines the survival of individual projects but also the sector's overall resilience (Doloi et al., 2012).

To address this knowledge gap, the present study employs a qualitative case study design to explore crisis leadership in Philippine construction projects. Specifically, it examines how senior project leaders navigate delays and disruptions, drawing on real-world crises to uncover leadership competencies, strategic frameworks, and communication practices. The study ultimately aims to develop a Crisis Leadership Program contextualized for the Philippine construction sector, offering both theoretical insights and practical tools to strengthen leadership capacity in high-risk environments.

Objectives of the Study

This research is guided by the following inquiries to fulfill its purpose:

1. To explore how construction leaders manage complex disruptions to ensure project continuity and minimize delays.

2. To examine the influence of internal and external factors on the crisis-response strategies of construction project leaders.
3. To analyze how construction firms integrate preemptive strategies and adaptive tactics across various stages of project implementation during crisis events.
4. To determine how organizational conditions—such as resource availability and leadership structure—facilitate or constrain the execution of crisis management within construction firms.
5. To identify the lessons construction leaders gain from past crisis-management experiences and to understand how these insights are transferred across projects.

Methodology

Research Design. This study employed a qualitative case study design, deemed appropriate for capturing the complexity of leadership responses to crises in construction projects. It allows for the exploration of lived experiences and context-specific insights that cannot be fully understood through quantitative measures alone (Creswell & Poth, 2018). The case study method was selected because it enables in-depth analysis of real-world practices, offering a holistic understanding of leadership behaviors, decision-making, and adaptive strategies within the dynamic environment of construction projects (Yin, 2018).

Research Setting and Participants. The study was conducted in the National Capital Region (NCR) of the Philippines, where construction projects are highly concentrated and particularly exposed to delays and disruptions due to regulatory requirements, environmental risks, and resource constraints. Participants were selected through purposive sampling, focusing on managers who had at least five years of experience and direct involvement in projects that encountered significant crises. Such purposive selection ensured that only individuals with substantial leadership exposure to delays and disruptions were included (Palinkas et al., 2015). A total of five managers from both public and private construction firms participated in the study.

Table 1

Biographical Sketch of the Participants

No.	Age	Sex	Degree Earned	Years of Experience as Construction Manager	Project Type (Government/Private)	Type of Projects Handled
P1	35	Male	Civil Engineering	10 years	Government	Roads, Infrastructure
P2	42	Male	Civil Engineering	15 years	Private	Residential, Commercial
P3	40	Female	Architecture	12 years	Government	Government Buildings, Infrastructure
P4	38	Male	Civil Engineering	13 years	Government, Private	Roads, Bridges, Government Projects
P5	49	Male	Civil Engineering	18 years	Private	Residential, Commercial, Hospitality

Table 1 presents the biographical profile of the five construction managers who participated in the study. The participants were between 35 and 49 years old, with professional backgrounds primarily in Civil

Engineering (four participants) and Architecture (one participant). Their managerial experience ranged from 10 to 18 years, demonstrating extensive exposure to the construction industry. Three participants were primarily engaged in government projects, while two managed projects in the private sector. The types of projects handled included roads, bridges, residential and commercial buildings, government infrastructure, and hospitality developments, reflecting a diverse range of expertise across both public and private construction domains. This variation in age, professional background, and project exposure provided a comprehensive perspective on crisis leadership in construction project management.

Research Instruments. Two instruments were developed for data collection: (1) a Profile Questionnaire to capture demographic and professional background of participants, (2) a Semi-Structured Interview Guide to explore leadership practices across pre-crisis, acute, chronic, and post-crisis stages. These instruments underwent expert validation by three professionals in construction project management, who reviewed them for clarity, relevance, and alignment with the study objectives. Revisions were made to refine the tools before final administration.

Data Gathering Procedure. Before data collection, ethical clearance was secured, and informed consent was obtained from all participants. Each interview was prefaced by a clear explanation of the study's purpose, voluntary participation, and confidentiality measures. Semi-structured interviews were conducted either face-to-face or online, depending on health protocols and participant availability. Interviews were audio-recorded with permission and later transcribed verbatim for analysis. In addition, secondary data such as project documents, internal memos, and crisis reports were collected to support triangulation (Fusch & Ness, 2015). All data were securely stored in password-protected folders, ensuring compliance with ethical standards.

Data Analysis. The study utilized thematic analysis, an approach suitable for identifying recurring patterns and insights within qualitative data (Braun & Clarke, 2006). The process involved reading transcripts multiple times for familiarization, generating initial codes based on significant phrases and leadership behaviors, grouping codes into categories, and organizing them into broader themes. A multi-source triangulation process, integrating interview data with secondary documents, enhanced the trustworthiness of findings. The researcher also maintained a reflexive journal to document analytic decisions, increasing transparency and rigor throughout the analysis.

Ethical Consideration. The study adhered to ethical principles of research involving human participants, including voluntary participation, confidentiality, and the right to withdraw at any time. Pseudonyms were used in transcripts and reports to protect participant identities. Digital and physical files were stored securely, accessible only to the researcher. These measures align with best practices in qualitative research ethics (Orb, Eisenhauer, & Wynaden, 2001).

Results and Discussions

1. Crisis Leadership Approaches

Crisis leadership styles include strategies and leader behavior in the face of disruptive events. Crisis leadership style stresses proactive leadership and the capacity to have controlled oversight in crises. Good leaders have noted that they have a duty of foreseeing impending crises prior to escalation, so that teams are at all times ready and in a position to have controlled responses.

Sub-theme 1: Proactive Response

Participants underscored that proactive measures were essential for maintaining project stability and averting crises from spiraling out of control. Leaders emphasized the necessity of preventive action and early intervention.

One participant explained:

“Instead of reacting chaotically, I immediately reassessed the site status, reallocated teams to alternative prep tasks, and initiated backup vendor outreach to recover lost time.” (Participant 2)

Another emphasized the domino effect of delays, underscoring the necessity of proactive oversight: *“Kailangan proactive ka sa every department sa follow-ups... Kapag ang isa na-delay, domino effect na agad.”* (Participant 1)

These reports underline the value of precognition and swift action. Through preponing identification of flaws and undertaking corrective action in advance of escalation, leaders reduce the likelihood of project derailment. Similarly, this is in line with the Crisis Life Cycle Theory (Fink, 1986), emphasizing pre-crisis readiness as a means of reducing disruption intensity. It is also in harmony with Wooten and James (2008) in that proactive monitoring of vulnerabilities by leaders prevents tiny flaws from blowing up into full-scale crises. In the Philippine construction context, in particular, where projects are extremely interdependent, proactive action decreases the cascading effect of delays on manpower, materials, and stakeholders.

Sub-theme 2: Calm and Structured Oversight

Participants also emphasized the value of composure and structured leadership in managing disruptions. Leaders explained that maintaining a calm presence reassured their teams and kept them aligned with project goals, even when resources or conditions were strained.

One participant shared:

“In roofing construction, I lead with a planning-first, calm-under-pressure approach. My style blends strategic foresight with hands-on adaptability.” (Participant 5)

Another highlighted the importance of shielding employees from financial anxieties to preserve morale:

“Kahit mahirap ‘yong financial, hindi ko pinapakita sa kanila ‘yon—basta makasahod sila.” (Participant 3)

These considerations provide insight into stabilizing leadership in crisis, offering definitive guidance while controlling emotions. Level-headed leadership keeps employees directed toward solutions instead of surrendering to panic or confusion. The study of Boin et al. (2013) confirm that in intense situations, leadership must be decisive as well as calm in order to forestall additional disruption. In construction, in which crises tend to put budgets, schedules, and personnel under strain, a formal but compassionate approach continues to maintain confidence and encourages teams to hold on in the face of challenges.

2. Type of Crises Experienced by Construction Managers

This theme illustrates the variety of challenges faced by construction leaders in the sector, grouped into external disruptors and internal weaknesses. Leaders described facing more than one crisis at a time, meaning that they had to be agile and juggle competing demands in order to achieve project quality and continuity.

Sub-theme 1: External Disruptions

They cited typhoons, shortage of materials, and government limitations as very common reasons for project delay. These are things that are not within control, so adaptability and fast decision-making are necessary to help soften their blow.

One participant described:

“I’ve encountered multiple crises ranging from typhoons and material shortages to labor instability and subcontractor withdrawal.” (Participant 4)

Another recalled a particularly challenging project that was disrupted by several external shocks at once:

“One particularly challenging case involved a commercial roofing installation hampered by a severe typhoon warning, delayed waterproofing materials, and a subcontractor exit due to workforce illness.” (Participant 3)

These accounts illustrate how construction leaders frequently face cascading external crises, where one disruption triggers another. This reflects Doloi et al.’s (2012) findings that weather conditions, supply chain issues, and regulatory restrictions are among the most persistent external risks in construction projects. Leaders’ emphasis on adaptability aligns with the Crisis Life Cycle Theory (Fink, 1986), which stresses the importance of rapid adjustments during the acute stage of a crisis. Moreover, Iqbal et al. (2021) noted that external disruptions such as pandemics or disasters demand flexible planning and agile decision-making, both of which were evident in participants’ responses.

Sub-theme 2: Internal Vulnerabilities

In addition to external shocks, leaders reported internal vulnerabilities that complicated crisis management. These included resource shortages, communication breakdowns, and subcontractor-related issues that intensified the effects of external disruptions.

As one participant explained:

“When internal issues arose, we had to quickly adapt by reallocating resources and keeping everyone aligned through daily briefings.” (Participant 1)

Internal vulnerabilities magnify the severity of external crises by weakening organizational response capacity. This finding aligns with Kim and Lim (2020), who emphasized that communication breakdowns during crises undermine coordination and reduce resilience. Participants’ reliance on daily briefings reflects the role of transparent communication in sustaining alignment, as also highlighted by Boin et al. (2013). By addressing internal weaknesses proactively, leaders ensure that project teams can respond to external disruptions with greater efficiency and cohesion.

3. Strategic Planning and Recovery

This theme refers to the actions taken before and after a crisis to ensure the smooth progress of the project. Participants highlighted the importance of pre-crisis anticipation, which involves preparing for potential disruptions through risk assessments and contingency planning, and post-crisis improvements, which focus on recovery, learning, and refining operational strategies to enhance resilience. Leaders viewed recovery not just as a means to return to normalcy, but as an opportunity to strengthen systems and prevent similar issues in future projects.

Sub-theme 1: Pre-Crisis Anticipation

Leaders emphasized that crisis readiness begins well before the first signs of disruption. Planning was described as essential for ensuring that crises could be managed swiftly and effectively.

One participant explained:

“Crisis readiness now begins before project mobilization with detailed risk assessments and redundant plans.” (Participant 5)

Sub-theme 2: Post-Crisis Improvements

Participants also stressed the importance of learning from crises and incorporating these lessons into future planning. Updating protocols and embedding layered contingencies were seen as crucial for long-term resilience.

As one participant noted:

“We recovered most of the delay and even improved our original risk protocols. That experience reaffirmed that proactive planning, layered contingencies, and calm, structured leadership make all the difference when projects hit turbulence.” (Participant 2)

These findings illustrate that strategic planning in crisis leadership is cyclical, beginning with anticipation and ending with reflection and refinement. Pre-crisis anticipation aligns with Fink’s (1986) Crisis Life Cycle Theory, which emphasizes risk assessments and contingency planning as essential to reducing the severity of crises during the acute phase. Participants’ focus on redundant planning demonstrates the value of building flexibility into project operations, which Wooten and James (2008) identify as a hallmark of resilient organizations.

Meanwhile, the emphasis on post-crisis improvements reflects the idea that crises provide opportunities for organizational learning. This is consistent with Mukhtar et al. (2022), who argue that resilient crisis management plans require continuous monitoring and iterative refinement. By updating SOPs and embedding lessons into practice, leaders ensure that organizational systems evolve rather than simply return to a vulnerable pre-crisis state. In the Philippine construction context, where crises such as typhoons, supply shortages, and labor instability are recurrent, this cycle of planning and refinement equips leaders to sustain resilience across multiple projects.

4. Organizational and Contextual Factors

Organizational and contextual factors significantly contribute to how construction project crises are managed. Organizational and contextual factors influence the overall capability of an organization to cope with challenges, recover from failure, and maintain project integrity amidst disruption. Three key factors emerged from reports from participants: adaptive leadership, organizational culture, and communication and recognition.

Sub-theme 1: Adaptive Leadership

One of the recurrent themes among the participants involved adaptive leadership, in that the leaders adapted strategies according to crisis nature and severity. Being adaptable allowed the leaders to react in a customized manner

One participant explained:

“Yes, I adapt my style depending on the type and severity of the disruption. For weather-related crises, I pivot to workload re-sequencing and on-site safety reinforcement. For supply chain interruptions, I move quickly to activate alternative vendors.” (Participant 4)

This highlights adaptive leadership as crucial in unpredictable environments in which there is no one-size-fits-all crisis strategy that is appropriate for all crises. Crisis-prone environments require leadership

adaptability in that adaptive leaders can create responses that are appropriate for specific crisis demands, as per Striepe and Kafa (2024). In construction environments, adaptability ensures stability in the face of unpredictable disruption that is complex disruption.

Sub-theme 2: Culture

Participants also emphasized how company culture shaped their responses to crises. A culture of honesty, resilience, and collaboration empowered teams to manage challenges more effectively.

As one leader shared:

“I always remind my team of the company’s core values: if we stay honest and loyal to each other, we can overcome any crisis.” (Participant 5)

Another stressed preparedness as part of organizational culture:

“We’re always prepared for the unexpected—it’s part of our culture. But when external factors like a typhoon or labor strike hit, that preparation becomes even more important.” (Participant 4)

These findings reinforce that organizational culture serves as a foundation for crisis response. A collaborative and resilient culture equips teams with the mindset to confront challenges collectively. Lengnick-Hall et al. (2011) highlight that organizations with strong, value-driven cultures are more capable of mobilizing resources and maintaining morale during crises. For construction projects, where uncertainty is pervasive, cultural cohesion acts as a buffer against disruption.

Sub-theme 3: Communication and Recognition

Clear communication and recognition emerged as vital in sustaining morale during crises. Leaders emphasized transparency with stakeholders and acknowledgment of team efforts.

One participant explained:

“I make sure transparent communication with my team, with my client, with my suppliers, with my subcontractors—because I will be honest with them. But of course, I will be reassuring them that everything will go smoothly as long as we are aligned.” (Participant 5)

Recognition of adaptability was also highlighted: *“On-the-spot recognition for adaptability and safety compliance, reinforcing initiative.”* (Participant 2)

Transparent communication and recognition sustain trust and motivation during crises. Kim and Lim (2020) emphasize that clear and consistent communication mitigates uncertainty and builds employee engagement during disruptions. Recognition practices also reinforce positive behaviors, motivating teams to sustain their commitment despite adversity (Boin et al., 2013). By combining honesty with reassurance, leaders strengthen alignment and resilience across all project stakeholders.

5. Leader insights from Crisis

The ability to learn from crises is a critical component of leadership, particularly in construction, where disruptions are frequent and can have far-reaching consequences. Participants highlighted the importance of reflection, growth, and resource redundancy as key lessons that influence future responses and shape long-term organizational strategies.

Sub-theme 1: The Value of Post-Crisis Reflection

Participants emphasized the significance of analyzing crises after they occur, reflecting on both successful and unsuccessful strategies, and then refining plans. Post-crisis reflection was described as an essential step in updating Standard Operating Procedures (SOPs) and strengthening resilience.

One participant explained:

“The first thing that I would do is analyze the problem... consult with trusted workers... then execute.” (Participant 4)

This process highlights the importance of structured reflection and continuous improvement in building crisis readiness. By revisiting SOPs and incorporating feedback from frontline workers, leaders embed institutional learning into future projects. Luo (2022), through the Crisis Life Cycle Theory, stresses that post-crisis evaluation is a key stage in fostering resilience and ensuring that organizations emerge stronger after disruptions.

Sub-theme 2: Crisis as an Opportunity for Growth

Leaders also viewed crises not only as disruptions but as opportunities for organizational and professional growth. This perspective encouraged proactive preparation and innovation in project management practices.

As one participant noted:

“Every project is a potential crisis—I prepare like it’s inevitable.” (Participant 5)

This insight demonstrates a shift from reactive to anticipatory leadership, where crises are reframed as inevitable parts of project life cycles. Such a mindset fosters resilience, encouraging teams to adapt, innovate, and improve processes continuously. Previous studies (Boin et al., 2013) have similarly argued that crises can serve as catalysts for transformation, compelling organizations to discover hidden weaknesses and develop stronger systems.

Sub-theme 3: The Role of Resource Allocation and Redundancy

Participants highlighted the importance of securing adequate resources and maintaining redundancy to mitigate disruptions. Ensuring backup suppliers, investing in equipment, and balancing workforce allocation were identified as critical to project recovery.

One participant described this practice:

“We recovered most of the delay and even improved our original risk protocols. That experience reaffirmed that proactive planning, layered contingencies, and calm, structured leadership make all the difference when projects hit turbulence.” (Participant 2)

Another emphasized shifting from labor to equipment efficiency:

“Nagbawas ako Sir sa labor at nag-invest ako sa equipment kasi mas mabilis at sigurado Sir. Yung kayang tapusin ng tao ng dalawang linggo, kaya ng isang araw ng isang backhoe.” (Participant 3)

These insights reinforce the importance of redundancy and strategic allocation in ensuring continuity during crises. Luo’s (2022) framework stresses that resilience requires not only foresight but also resource flexibility, enabling organizations to adapt quickly when standard processes fail. Strategic investments in technology and contingency systems enhance efficiency and reduce dependence on vulnerable resource chains, which is crucial in high-stakes industries like construction.

Conclusions

This research determines that successful crisis leadership in construction involves anticipatory planning, adaptive strategy, effective communication, and ongoing learning. Leaders who are risk aware, remain calm in crises, and draw on learning from historical disruption harden both team resilience and organizational adaptability. The suggestion is that construction companies need to invest in leadership development, formal reflection, and resource duplication so that crises are avoided but, more importantly, crises are harnessed as learning strategies for innovation and long-term competitiveness.

Recommendations

It is recommended that construction firms make proactive identification of risk and contingency planning a key component of project initiation, reinforce leadership development initiatives that emphasize adaptability and emotional mastery, and instill a culture of frankness, collegiality, and recognition in the face of crises. Firms must also establish systematic procedures for post-crisis reflection to extract lessons learned into subsequent business activities, as well as invest in redundant project resources, for instance, standby suppliers and current equipment, to provide for project permanence. Lastly, integration of crisis management into firm policies will make firms more robust and better placed to sustain performance in the face of disruption.

References

- Boin, A., 't Hart, P., Stern, E., & Sundelius, B. (2017). *The politics of crisis management*. Cambridge University Press.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101.
- Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). SAGE.
- Doloi, H., Sawhney, A., Iyer, K. C., & Rentala, S. (2012). Analysing factors affecting delays in Indian construction projects. *International Journal of Project Management*, 30(4), 479–489.
- Fink, S. (1986). *Crisis management: Planning for the inevitable*. AMACOM.
- Fusch, P. I., & Ness, L. R. (2015). Are we there yet? Data saturation in qualitative research. *The Qualitative Report*, 20(9), 1408–1416.
- Iqbal, S., Ahmad, M., & Raziq, M. M. (2021). Adaptive leadership in crisis management: The role of communication and trust. *Journal of Management Development*, 40(9), 835–850.
- Kim, Y., & Lim, J. (2020). Crisis leadership and communication: Building resilience in turbulent environments. *International Journal of Crisis Management*, 28(3), 175–188.
- Lengnick-Hall, C. A., Beck, T. E., & Lengnick-Hall, M. L. (2011). Developing a capacity for organizational resilience through strategic human resource management. *Human Resource Management Review*, 21(3), 243–255.
- Luo, Y. (2022). Crisis life cycle theory and organizational resilience: A framework for sustainable crisis response. *Journal of Contingencies and Crisis Management*, 30(2), 102–114.
- Mitroff, I. I. (2005). *Why some companies emerge stronger and better from a crisis: 7 essential lessons for surviving disaster*. AMACOM.
- Mukhtar, U., Khan, A., & Rehman, M. (2022). Strategic resilience: Enhancing post-crisis recovery in project management. *Project Leadership and Society*, 3, 100–112.
- Orb, A., Eisenhauer, L., & Wynaden, D. (2001). Ethics in qualitative research. *Journal of Nursing Scholarship*, 33(1), 93–96.

- Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed-method implementation research. *Administration and Policy in Mental Health and Mental Health Services Research*, 42(5), 533–544.
- Sambasivan, M., & Soon, Y. W. (2007). Causes and effects of delays in Malaysian construction industry. *International Journal of Project Management*, 25(5), 517–526.
- Wooten, L. P., & James, E. H. (2008). Linking crisis management and leadership competencies: The role of human resource development. *Advances in Developing Human Resources*, 10(3), 352–379.
- Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th ed.). SAGE.

Copyrights

Copyright of this article is retained by the author/s, with first publication rights granted to APJAET. This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution-Noncommercial 4.0 International License (<http://creativecommons.org/licenses/by/4>).