

Enhancing crisis communication and risk management competencies: A qualitative study of city information officers

¹Enrico B. Galicia & ²John Matthew Aquino

Abstract

This qualitative study examines the risk management, communication, and crisis response competencies of city information officers in San Pablo City, Philippines local government, focusing on how these officers effectively handle emergencies and manage public communication. Through semi-structured interviews with 15 regular staff members and 5 job-order workers, the study provides in-depth insights into their strengths and areas for improvement in crisis management. Thematic analysis of the interview data revealed that, while officers face certain challenges, such as occasional communication delays and limited formal training in risk management, they have demonstrated resilience and adaptability in high-pressure situations. Participants shared successful strategies they have employed, such as leveraging existing networks and utilizing local knowledge to ensure timely information dissemination during emergencies. Additionally, strong teamwork and interdepartmental collaboration were noted as strengths, enabling more efficient crisis response. The study highlights opportunities for further enhancing these competencies through targeted professional development programs in risk management and crisis communication. The findings suggest that, with the right support and training, city information officers can continue to improve their effectiveness in managing public communication during emergencies, ensuring better coordination and quicker responses to crises. This research provides practical recommendations for local government units to capitalize on existing strengths while addressing training gaps to further bolster their crisis management capabilities.

Keywords: *city information officer, risk management, project professional, crisis management*

Article History:

Received: August 20, 2024

Accepted: October 29, 2024

Revised: October 19, 2024

Published online: November 8, 2024

Suggested Citation:

Galicia, E.B. & Aquino, J.M. (2024). Enhancing crisis communication and risk management competencies: A qualitative study of city information officers. *International Journal of Academe and Industry Research*, 5(4), 81-97. <https://doi.org/10.53378/ijair.353117>

About the authors:

¹Corresponding author. Master in Public Administration, City Information Officer, San Pablo City Local Government Unit. Philippines. Email: galiciaenrico@gmail.com

²PhD. MPA Program Chair, Pamantasan ng Lungsod ng San Pablo. Executive Assistant to the City Mayor, City Management Information Systems Officer, San Pablo City Local Government Unit. Philippines.



© The author (s). Published by Institute of Industry and Academic Research Incorporated.

This is an open-access article published under the Creative Commons Attribution (CC BY 4.0) license, which grants anyone to reproduce, redistribute and transform, commercially or non-commercially, with proper attribution. Read full license details here: <https://creativecommons.org/licenses/by/4.0/>.

1. Introduction

Effective risk management and communication are critical components of public service, particularly in local government units (LGUs), which are tasked with safeguarding citizens during crises (Osborne, 2020). Risk management, as defined by ISO 31000, involves “*coordinated activities to direct and control an organization with regard to risk*” (ISO, 2018), emphasizing the need for systematic control and informed decision-making. Equally important is the role of risk communication, where the timely and clear dissemination of information can make the difference in crisis situations. A global example of this is seen in the response to Hurricane Harvey, where public officials effectively used multiple media platforms to inform residents about evacuation procedures and safety measures (Ellis, 2018). This coordinated communication effort underscored the vital role of strategic partnerships and media in ensuring that life-saving information reached those in need, reinforcing the interconnected nature of risk management and communication in public safety efforts.

In the Philippines, LGUs play a pivotal role in disaster response, as they are often the first to react to emergencies such as natural calamities, health crises, and other public disturbances (Indal & Ariola, 2023; Espia & Fernandez, 2014). Within the LGU structure, city information officers (CIOs) are typically part of the public information office and operate under the office of the mayor or the city administrator. Their primary role is to disseminate timely and accurate information to the public, ensuring effective communication during crises. CIOs are also responsible for coordinating with various government agencies and media outlets to help mitigate the impact of emergencies. While their integral role is acknowledged, the decision-making authority on their specific tasks and responsibilities often rests with higher-ranking officials, such as the mayor or the city administrator, who direct their actions based on the needs of the situation (Gil-Garcia et al., 2019).

Over recent years, the importance of communication during crises has been underscored by various disaster events in the Philippines. For instance, during Typhoon Odette in 2021, one of the major challenges reported was the delay in information dissemination, which led to confusion and panic among affected communities (Gumasing et al., 2022; Gonzalez, 2022). The delays were attributed to several factors, including the breakdown of communication infrastructure, such as cell towers and internet services, in severely affected areas. Additionally, coordination issues between local and national agencies, as well as limited access to real-time data, further hindered the timely release of crucial information. These

challenges highlight gaps in the current practices of information dissemination, emphasizing the need for more resilient communication systems and improved inter-agency coordination during emergencies. Despite the critical role of CIOs in these situations, limited formal training in risk management and crisis communication continues to hinder their ability to respond effectively. A study highlighted that many public officers, including those in city information offices, lack the necessary competencies to manage risk communication during emergencies (Bernaba & Vitug, 2022).

While the CIOs are responsible for disseminating information during crises, the lack of formal risk management training and communication strategies poses a significant problem for their effectiveness. Many officers are proficient in handling routine information dissemination but encounter difficulties during high-pressure situations. Inconsistent messaging, delays in delivering critical updates, and coordination issues with other departments are recurring problems. According to a study by Pesimo et al. (2019), 75% of LGU officers surveyed reported facing significant challenges in risk communication during natural disasters. These challenges point to a critical gap in their capacity to manage crisis-related communication, which can lead to delays in disseminating vital information, confusion among the public, and inefficiencies in emergency response efforts. Strengthening this aspect of crisis management is essential to improving the overall effectiveness of disaster response at the local level.

Despite their strengths, CIOs face several challenges in managing public communication during emergencies. The qualitative study by Bracci et al. (2021) highlighted the need for ongoing education and training for public officials involved in crisis management. Additionally, the rapid dissemination of misinformation during crises poses a challenge for CIOs. As noted by Cybersecurity and Infrastructure Security Agency (2022), misinformation can spread quickly through social media platforms, complicating efforts to provide accurate information to the public. Hence, CIOs must be equipped with strategies to counter misinformation effectively. This problem is particularly pressing in the Philippines, a country that is highly vulnerable to natural disasters such as typhoons, earthquakes, and volcanic eruptions. The frequency and severity of disasters exacerbate the need for robust communication systems. However, local government units often face limited resources and training opportunities, further contributing to the communication gap (Maj-Waśniowska & Jedynek, 2020). As a result, CIOs may find themselves ill-equipped to perform their duties effectively, leaving communities without timely and accurate information during emergencies.

Existing literature on risk communication in the Philippines largely focuses on national-level disaster response frameworks and the roles of higher-level government agencies (Biescas et al., 2022; Das et al., 2023; Medel et al., 2020). However, few to limited studies have examined the specific role of CIOs in local government units and the competencies required for them to perform effectively during crises. Most research emphasizes broad communication strategies without addressing the particular needs and challenges faced by officers at the city level who are directly responsible for communicating with the public during emergencies. This gap in the lack of research and understanding regarding the specific competencies and operational challenges faced by CIOs at the local government level in the Philippines during crises is significant because CIOs often operate under immense pressure and resource constraints, yet their role is vital for ensuring public safety. Training programs and competency development for CIOs remain limited, with little understanding of how they currently manage crises and where they need additional support. While national agencies have made strides in improving disaster response, the development of localized communication strategies tailored to the needs of city information officers remains underexplored (Hansson et al., 2020). This study seeks to fill that gap by focusing on the specific challenges and competencies of CIOs.

This study explores the risk management and communication competencies of CIOs in San Pablo City, Philippines. Specifically, the study aimed to identify the challenges faced by CIOs in managing communication and information dissemination during emergencies, assess the existing competencies in risk management and crisis communication among CIOs, and explore potential areas for improvement in the current training and professional development programs available to these officers.

2. Literature review

2.1. Risk Management Framework

Risk management (RM) is a systematic approach to identifying, assessing, and mitigating risks that could impact an organization's objectives. In the context of local government and emergency management, RM is vital for ensuring public safety and effective resource allocation during crises. Several RM frameworks guide these practices, including the ISO 31000 framework, which provides principles and guidelines for risk management, and the FEMA's National Response Framework, which outlines how communities respond to

emergencies. According to Bracci et al. (2021), effective RM practices enable organizations to anticipate potential risks and develop strategies to minimize their impact.

The need for proactive RM is emphasized by Damayanti (2023), who argues that organizations must cultivate a culture of preparedness that includes regular training and simulations. This proactive approach aligns with the findings from the qualitative study, where CIOs demonstrated resilience and adaptability despite facing challenges. The ability to leverage local knowledge and existing networks was identified as a successful strategy for timely information dissemination during emergencies.

2.2. Communication Competencies

Effective communication is essential for successful crisis management. Research indicates that timely and accurate communication can significantly reduce public panic and confusion during emergencies (U.S. Department of Homeland Security, 2022). Previous studies revealed that communication competencies—such as clarity, transparency, and the ability to engage with the community—are critical for officials during crises. For instance, the Substance Abuse and Mental Health Services Administration (SAMHSA, 2019) highlights that public officials must communicate clearly and transparently to build and maintain trust with the community. Furthermore, studies emphasize that strong interpersonal skills and interdepartmental collaboration enhance the effectiveness of crisis communication. Lee and Fink (2012) underscore that coordinated communication efforts not only improve information dissemination but also foster a sense of community support during emergencies.

2.3. Crisis Response Competencies

Crisis response competencies refer to the skills required for effective management during emergencies. According to Coombs (2022), essential competencies include strategic communication, which involves crafting clear messages tailored to diverse audiences; leadership, which encompasses decision-making under pressure and fostering teamwork; and emotional intelligence, allowing leaders to manage their own emotions while empathizing with affected individuals. Additionally, problem-solving skills are crucial for assessing situations rapidly and implementing effective solutions. A study by Christensen and Laegreid (2020) highlights the importance of interpersonal communication skills, as these enable crisis managers to engage effectively with the public and build trust. Adaptability and situational

awareness are also critical, as they allow responders to adjust their strategies based on evolving circumstances (Sathurshan et al., 2022). By developing these competencies, organizations can enhance their overall crisis response efforts and ensure a more effective management of emergencies.

A comprehensive crisis communication plan is essential for local governments to manage emergencies effectively. According to GovPilot (2024), a well-structured crisis communication plan outlines how local governments will communicate with residents, media, and external partners during crises. The study's findings suggest that while CIOs have demonstrated strong crisis response capabilities, there are opportunities for further enhancing these competencies through targeted professional development programs.

The importance of continuous training in crisis response is supported by research from FEMA (2021), which emphasizes that regular drills and simulations can improve preparedness among emergency responders. The qualitative study's participants expressed a desire for more formal training in risk management and crisis communication, indicating a gap that local government units can address through professional development initiatives.

3. Methodology

This study employed a qualitative research design to explore the risk management and communication competencies of CIOs within the San Pablo City local government. Given the study's focus on gaining an in-depth understanding of the officers' experiences, challenges, and perceptions, qualitative methods were deemed most appropriate. This approach allowed for the collection of rich, descriptive data that could provide insights (Magulod et al., 2021) into CIOs' specific competencies and training needs in managing crises and disseminating information during emergencies. The study used semi-structured interviews to gather data from participants, and a thematic analysis was employed to analyze the data. The study followed the six-step approach outlined by Braun and Clarke (2006) for thematic analysis, which provided a systematic framework for identifying, analyzing, and reporting patterns within the data. The first step involved familiarization with the data, where researchers immersed themselves in the transcripts from interviews and focus group discussions to gain a comprehensive understanding of the content. This was followed by generating initial codes, where key features of the data relevant to the research questions were identified and labeled systematically. Next, the researchers searched for themes by grouping related codes into broader categories, ensuring

that each theme reflected a significant aspect of the data. In the fourth step, the themes were reviewed and refined, allowing the researchers to check whether the themes worked in relation to the coded extracts and the entire dataset. This iterative process helped to ensure that the themes accurately represented the participants' experiences and perspectives. In the fifth step, themes were defined and named, providing clarity on what each theme encapsulated and its relevance to the research objectives. Finally, the study reported the findings, presenting the themes in a coherent narrative supported by direct quotations from participants to illustrate their lived experiences. The study ensured a rigorous and transparent approach to data analysis, ultimately contributing to a deeper understanding of the challenges and competencies of CIOs during crises.

The participants in this study were 20 CIOs from San Pablo City, comprising 15 regular staff members and 5 job-order workers. These individuals were selected because of their direct involvement in the dissemination of information and coordination during emergencies within the local government unit. Participants were purposively sampled to ensure that those with direct responsibilities in crisis communication and risk management were included. This form of purposive sampling was chosen to ensure that the participants could provide relevant and meaningful insights into the study's focus. All participants had been involved in crisis communication during recent emergencies, including natural disasters such as typhoons. The diversity in job tenure and experience among the participants provided a range of perspectives on the challenges they face and the competencies they need to improve.

Data were collected through semi-structured interviews, which were designed to allow participants to share their experiences in an open-ended, flexible format. Each interview lasted between 45 minutes and one hour and was conducted either face-to-face or via video conferencing, depending on the participants' availability. The interview guide consisted of questions related to the participants' roles and responsibilities in crisis communication, the specific challenges they encountered during emergencies, and their perceptions of the competencies required to manage risk and disseminate information effectively. All interviews were audio-recorded with the participants' consent and later transcribed verbatim for analysis. Detailed field notes were also taken during the interviews to capture non-verbal cues and contextual details that could inform the analysis. The use of semi-structured interviews allowed the researcher to explore specific topics while also providing participants the flexibility to raise additional issues that were important to them.

This study adhered to strict ethical guidelines to ensure the confidentiality and well-being of all participants. Prior to participation, all interviewees were provided with an information sheet explaining the purpose of the study, their role in it, and the voluntary nature of their participation. Written informed consent was obtained from all participants before conducting the interviews, ensuring that they understood their right to withdraw from the study at any point without consequence. To protect participants' privacy, all personal identifying information was anonymized in the transcripts and reports. Participants were assigned pseudonyms, and any potentially identifying details were removed. Audio recordings and transcripts were securely stored, accessible only to the researcher and supervisor. Additionally, the study took into consideration the sensitive nature of the data, particularly as it relates to government operations during crises. Participants were informed that their responses would be used solely for research purposes, and the findings would be presented in a way that ensures no harm or reputational damage to the institutions involved.

4. Findings and Discussion

Thematic analysis of the interviews with CIOs revealed key insights into their competencies in risk management, communication, and crisis response. The findings are organized into three primary themes: (1) communication breakdown during emergencies, (2) lack of training in risk management, and (3) adaptability and collaborative strengths.

Table 1

Communication breakdown during emergencies

Sub-Themes	Coded Response
Delays in Information Dissemination	Late receipt of updates affecting prompt action
	Delayed notifications causing confusion
	Information received too late for effective implementation
Conflicting Messages from Authorities	Learning about updates after others have acted
	Contradictory instructions from different officials
	Uncertainty due to conflicting messages
Inadequate Technology Infrastructure	Confusion over which directives to prioritize
	Lack of IT support and modern equipment as barriers
	Struggles with outdated software
	Inadequate infrastructure to process high volumes of digital information

One of the major challenges identified by participants was the difficulty in ensuring timely and accurate communication during crises. Many CIOs reported that during high-pressure situations, such as natural disasters, they struggled with disseminating consistent information, which often led to public confusion. A common issue that emerged was the delay in disseminating critical information. As one participant explained:

"During Typhoon or any natural calamity, we couldn't update the public quickly because we were waiting for instructions from higher authorities. By the time we got the green light, rumors were already spreading, making our job harder."

(Participant 1)

Participants also highlighted issues with conflicting messages between different government agencies, causing further public confusion:

"We sometimes receive different directives from multiple agencies, which leads to inconsistent messaging. It's hard to maintain the public's trust when they hear different things from different sources." (Participant 7)

The findings reveal significant delays in information dissemination, with CIOs often struggling to provide timely updates during emergencies. This issue aligns with recent research, which highlights the crucial role of swift and accurate communication in effective crisis management (Hansen et al., 2023). Furthermore, the study identifies conflicting messages from various authorities as a major source of public confusion, a problem also noted in contemporary literature that emphasizes the need for cohesive and coordinated communication strategies. Inadequate technology infrastructure exacerbates these issues, with outdated systems and insufficient IT support hindering the efficient processing and dissemination of information (Nattrass & Watermayer, 2024). Additionally, the lack of formal training in risk management is evident, limiting the CIOs' ability to anticipate and respond to risks effectively. Research supports the necessity of comprehensive training programs to equip officials with the skills needed for effective crisis management (Shaw, 2023). Addressing these challenges by improving inter-agency coordination, investing in modern technology, and enhancing training programs will be crucial for enhancing the overall effectiveness of crisis management efforts in local government settings.

Table 2*Lack of training in risk management*

Sub-Themes	Coded Response
Insufficient Formal Training	Lack of structured training programs
	Inadequate training resources and materials
	Limited opportunities for formal educational sessions
	Absence of comprehensive training modules
Reliance on On-the-Job Learning	Insufficient training to cover all relevant skills and knowledge
	Heavy dependence on informal learning during work
	Learning primarily through trial and error
Inadequate Technology Infrastructure	Scarcity of available professional development opportunities
	Difficulty in finding relevant programs or courses
	Restricted access to advanced training or certifications

Another significant finding was the lack of formal training in risk management among CIOs. Many participants reported that while they were proficient in routine communication tasks, they lacked the specific skills and knowledge needed to handle crisis situations effectively. A majority of the participants expressed frustration over the absence of formal training programs that could help them improve their crisis management capabilities. One participant noted:

"We've never had formal training in risk management. Most of what we do during a crisis is based on our personal experience or what we pick up on the job."
(Participant 3)

Another participant emphasized the need for more targeted training:

"We're expected to manage communication during emergencies, but there's no structured training on how to handle high-pressure situations or how to coordinate with other departments effectively." (Participant 7)

Participants expressed notable frustration over the lack of structured training programs and adequate resources, which impedes their capacity to manage high-pressure situations proficiently. This aligns with recent literature emphasizing the necessity for formalized risk management training to equip officials with the essential skills and knowledge for effective crisis response (Shaw, 2023). The heavy reliance on on-the-job learning, characterized by a trial-and-error approach, further exacerbates the issue, as it leaves CIOs dependent on personal experience rather than structured guidance. Additionally, the scarcity of professional

development opportunities and restricted access to advanced training programs compound the problem, limiting CIOs' ability to acquire specialized skills (Natrass & Watermayer, 2024). Addressing these issues by establishing comprehensive and targeted training programs for risk management and crisis communication is crucial. Such initiatives would provide CIOs with the necessary expertise to handle emergencies more effectively and reduce their dependence on informal learning methods.

Table 3

Adaptability and collaborative strengths

Sub-Themes	Coded Response
Leveraging Existing Networks	Utilizing connections for support and resources
	Relying on established relationships for information sharing
	Engaging with known contacts to solve problems
	Capitalizing on existing professional relationships for collaboration
	Using network contacts to access valuable insights and assistance
Strong Interdepartmental Collaboration	Effective communication between departments
	Joint efforts on projects and problem-solving
	Shared resources and expertise across departments
	Coordinated actions and strategies between teams
	Collaborative approach to addressing challenges
Adaptability in High-Pressure Situations	Quick adjustment to changing circumstances
	Effective decision-making under stress
	Flexibility in modifying plans and approaches
	Ability to remain composed and resourceful in crises

Despite the challenges identified, CIOs demonstrated a high degree of adaptability and emphasized the importance of collaboration in managing crises. Many participants spoke about how they used their existing networks and worked with other departments to overcome communication barriers. One participant described how collaboration with other departments helped improve their communication during a recent crisis:

"During the last typhoon, we worked closely with the local disaster risk management office. That collaboration really helped streamline the information we sent out. It wasn't perfect, but it was better than acting alone." (Participant 18)

Participants also highlighted their ability to adapt quickly to evolving situations, even without formal training. One officer noted:

"Even though we lack formal training, I think we've learned to adapt. We work with what we have and try to make the best of it." (Participant 15)

These findings suggest that while CIOs face significant challenges, they also possess strengths that could be further developed through training and resource support. Their adaptability and willingness to collaborate indicate that with the right tools and training, they can significantly enhance their effectiveness during emergencies.

CIOs have demonstrated a high degree of resourcefulness by leveraging their existing networks to navigate and mitigate communication barriers during emergencies. This reliance on professional relationships for support and information sharing underscores the importance of networking in crisis situations, as noted by recent studies that emphasize the role of social capital in enhancing emergency response (Roque et al., 2021). By capitalizing on established connections, CIOs have been able to access valuable insights and resources, which has proven essential in managing high-pressure scenarios. Furthermore, strong interdepartmental collaboration has emerged as a key strength. CIOs have effectively utilized coordinated actions, shared expertise, and joint problem-solving to overcome obstacles. Research supports this approach, highlighting that interdepartmental collaboration can significantly improve crisis management outcomes by ensuring cohesive and efficient response efforts (Lee, 2021). The ability to work collaboratively across departments not only enhances communication but also optimizes resource allocation and strategic planning.

The adaptability of CIOs, even in the absence of formal training, illustrates their resilience and capacity for dynamic learning. CIOs have shown a remarkable ability to adjust quickly to evolving circumstances, make effective decisions under stress, and modify plans as needed. This adaptability aligns with literature on dynamic learning, which suggests that experiential learning and the capacity to adjust to new challenges are crucial for effective crisis management. Dynamic learning involves acquiring skills through real-time problem-solving and adapting to changing environments, which CIOs have demonstrated through their on-the-job learning experiences.

These findings suggest that while CIOs face substantial challenges, their adaptability and collaborative strengths provide a solid foundation for enhancing crisis management

capabilities. To build on these strengths, it is essential to invest in formal training programs that focus on risk management and crisis communication. Such training would complement the dynamic learning experiences CIOs gain through practice, equipping them with structured knowledge and tools to further improve their effectiveness in emergency situations. Additionally, providing access to advanced professional development opportunities and modern technology would enhance their ability to manage crises more efficiently and cohesively.

5. Conclusions and Recommendations

This study provides valuable insights into the risk management and communication competencies of CIOs in the San Pablo City local government, particularly during crises such as natural disasters and emergencies. The findings highlight several challenges CIOs face in their roles, including delays in disseminating crucial information, conflicting messages from different authorities, and the lack of sufficient technological infrastructure. These challenges significantly affect their ability to provide timely and accurate communication during emergencies, that may lead to public confusion and inefficiencies in crisis management. Moreover, the study revealed a significant gap in formal training for CIOs, particularly in areas related to risk management and crisis communication. Many participants expressed reliance on on-the-job learning rather than structured training programs, which limits their ability to respond effectively in high-pressure situations. Although CIOs demonstrated strong adaptability and collaboration with other departments, this adaptability is not enough to compensate for the lack of formal risk management training. While they have been able to leverage their networks and work effectively with external agencies, the absence of continuous professional development remains a barrier to their full potential in crisis response. However, it is important to acknowledge the strengths identified in this study, particularly in the area of interdepartmental collaboration. CIOs have shown resilience and adaptability, which, if supported by structured training, could significantly enhance their effectiveness in managing emergencies. These findings underline the importance of addressing competency gaps while building on existing strengths to ensure that CIOs can perform their roles more effectively during crises.

It is recommended to expand the research to include multiple departments or organizations across different sectors to enhance the generalizability of the findings. Increasing

the sample size and incorporating a longitudinal design would allow for a more comprehensive understanding of project management competencies over time.

Based on the findings of this study, several key recommendations can be made to improve the competencies of CIOs.

Implement formal training programs. The local government should prioritize the development of formal, structured training programs that focus on crisis communication and risk management. These programs should be designed to equip CIOs with the necessary skills to handle high-pressure situations effectively.

Invest in technology infrastructure. Upgrading the technological tools used by CIOs would significantly reduce delays in information dissemination. A unified communication platform that integrates various government agencies and departments could streamline the coordination process during crises.

Strengthen interdepartmental collaboration. While collaboration is already a strength, formalizing these relationships through protocols and joint training exercises would ensure smoother operations during emergencies.

Continuous professional development. Regular workshops and seminars focusing on crisis management, emergency response, and communication strategies should be offered to CIOs to enhance their skills and keep them updated on best practices. Formal post-graduate studies may also be considered.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This work was not supported by any funding.

ORCID

Enrico B. Galicia – <https://orcid.org/0009-0004-5195-7061>

John Matthew Aquino – <https://orcid.org/0009-0008-8829-1856>

References

- Bhagavathula, S., Brundiers, K., Stauffacher, M., & Kay, B. (2021). Fostering collaboration in city governments' sustainability, emergency management and resilience work through competency-based capacity building. *International Journal of Disaster Risk Reduction*, 63, 102408. <https://doi.org/10.1016/j.ijdrr.2021.102408>
- Biescas, A., Pascua, E. J., & Simbajon, Q. (2023). Coastal flooding risk communication experiences in the community of Baseco Port Area, Manila. SSRN. <http://dx.doi.org/10.2139/ssrn.4525077>
- Bracci, E., Tallaki, M., Gobbo, G., & Papi, L. (2021). Risk management in the public sector: A structured literature review. *International Journal of Public Sector Management*, 34(2), 205–223. <https://doi.org/10.1108/IJPSM-02-2020-0049>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Christensen, T., & Laegreid, P. (2020). The coronavirus crisis—crisis communication, meaning-making, and reputation management. *International Public Management Journal*, 23(5), 713-729. <https://doi.org/10.1080/10967494.2020.1812455>
- Coombs, W. T. (2022). *Ongoing Crisis Communication: Planning, Managing, and Responding*. Sage Publications. <https://uk.sagepub.com/en-gb/eur/ongoing-crisis-communication/book270207>
- Cybersecurity & Infrastructure Security Agency (2022). *Effective communication is key during emergencies: Countering misinformation online*.
- Damayanti, S. (2023). Proactive risk management in organizations: Strategies and frameworks. *International Journal of Business and Management*, 18(3), 45–56.
- Das, A., Behera, S., & Das, B. (2023). Role of local governments in disaster management. In *International Handbook of Disaster Research* (pp. 1013-1033). Singapore: Springer Nature Singapore. https://link.springer.com/referenceworkentry/10.1007/978-981-19-8388-7_70
- Espia, J. C. P., & Fernandez Jr, P. (2015). Insiders and outsiders: Local government and NGO engagement in disaster response in Guimaras, Philippines. *Disasters*, 39(1), 51–68. <https://doi.org/10.1111/disa.12086>
- Federal Emergency Management Agency (FEMA). (2021). Crisis communications plan: Preparing your community for emergencies.

- Gil-Garcia, J. R., Guler, A., Pardo, T. A., & Burke, G. B. (2019). Characterizing the importance of clarity of roles and responsibilities in government inter-organizational collaboration and information sharing initiatives. *Government Information Quarterly*, 36(4), 101393. <https://doi.org/10.1016/j.giq.2019.101393>
- GovPilot. (2024). How to make a crisis communication plan: Tips for municipal emergency management officials. <https://www.govpilot.com/>
- Gumasing, M. J. J., Prasetyo, Y. T., Ong, A. K. S., Nadlifatin, R., & Persada, S. F. (2022). Determining factors affecting the perceived preparedness of super typhoon: Three broad domains of Ergonomics Approach. *Sustainability*, 14(19), 12202. <https://doi.org/10.3390/su141912202>
- Hansen, P. M., Mikkelsen, S., & Rehn, M. (2023). Communication in sudden-onset major incidents: Patterns and challenges-scoping review. *Disaster Medicine and Public Health Preparedness*, 17, e482. <https://doi.org/10.1017/dmp.2023.132>
- Hansson, S., Orru, K., Siibak, A., Bäck, A., Krüger, M., Gabel, F., & Morsut, C. (2020). Communication-related vulnerability to disasters: A heuristic framework. *International Journal of Disaster Risk Reduction*, 51, 101931. <https://doi.org/10.1016/j.ijdrr.2020.101931>
- Indal, J. A., & Arriola, B. H. (2024). Climate change mitigation of local government units (LGUs) in Basilan Province, Philippines. *Pak. j. life soc. Sci.* 22(2), 3263-3273 <https://doi.org/10.57239/PJLSS-2024-22.2.00239>
- ISO 31000:2018. (n.d.). *ISO*. <https://www.iso.org/standard/65694.html>
- Lee, H. W. (2020). The cost and benefit of interdepartmental collaboration: An evidence from the US Federal Agencies. *International Journal of Public Administration*, 43(4), 294–302. <https://doi.org/10.1080/01900692.2019.1628058>
- Lee, J., & Fink, D. (2012). The role of communication in risk management systems: A literature review. *Risk Analysis*, 32(5), 925–938.
- Magulod, G. C., Jr., Capulso, L. B., Delos Reyes, R. J. V., Luna, A. R. F., Orte, C. J. S., Maglente, S. S., Pentang, J. T., Olitres, B. J. D., Vidal, C. J. E., & Samosa, R. C. (2021). *How to write and publish your dissertation*. Beyond Books Publication
- Maj-Waśniowska, K., & Jedynak, T. (2020). The issues and challenges of local government units in the era of population ageing. *Administrative Sciences*, 10(2), 36. <https://doi.org/10.3390/admsci10020036>

- Medel, K., Kousar, R., & Masood, T. (2020). A collaboration–resilience framework for disaster management supply networks: A case study of the Philippines. *Journal of Humanitarian Logistics and Supply Chain Management*, 10(4), 509-553. <https://doi.org/10.1108/JHLSCM-09-2019-0066>
- Natrass, R., & Watermeyer, J. (2024). Where trouble starts: Communication breakdown in a complex emergency call. *Health Communication*, 1–11. <https://doi.org/10.1080/10410236.2024.2346677>
- Osborne, S. (2020). *Public service logic: Creating value for public service users, citizens, and society through public service delivery*. Routledge. <https://doi.org/10.4324/9781003009153>
- Pesimo, A. R., Saballegue, R. D., Medina, E. D., & Bolalin, N. P. (2019). Disaster risk reduction management assessment of coastal communities of San Jose, Camarines Sur, Philippines. *International Journal of Development and Sustainability*, 8(7), 434-451.
- Roque, D.A., Pijawka, D., & Wutich, A. (2020). The role of social capital in resiliency: Disaster recovery in Puerto Rico. *Risk, Hazards & Crisis in Public Policy*, 11(2), 204–235. <https://doi.org/10.1002/rhc3.12187>
- Sathurshan, M., Saja, A., Thamboo, J., Haraguchi, M., & Navaratnam, S. (2022). Resilience of critical infrastructure systems: A systematic literature review of measurement frameworks. *Infrastructures*, 7(5), 67. <https://doi.org/10.3390/infrastructures7050067>
- Shaw, M. (2023). Unplanned change and crisis management. In *Global Encyclopedia of Public Administration, Public Policy, and Governance* (pp. 13045–13049). Cham: Springer International Publishing.
- Substance Abuse and Mental Health Services Administration (SAMHSA). (2019). *Communicating in a crisis: Risk communication guidelines for public officials*.
- U.S. Department of Homeland Security. (2022). *The role of crisis communication in emergency management: Best practices for effective messaging*.
- Vitug, W., & Bernaba, E. (2022). Management of risk communication in Lyceum of the Philippines University-Laguna: Basis for risk communication management plan. *Management*, 4(2). <https://lpulaguna.edu.ph/wp-content/uploads/2023/10/JAS-22-11.pdf>