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Relationships Among Crisis Leadership, Innovation Capability, Implementation of Business Continuity Management, and Sustainable Performance in The Covid-19 Pandemic

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ABSTRACT

Research Aims: This study explores the dynamics between crisis leadership (CLE) and sustainable performance (SP) during the COVID-19 pandemic, investigating the mediating roles of innovation capability (IC) and business continuity management (BCM).

Design/Methodology/Approach: Utilising questionnaires from 209 respondents and employing quantitative approaches, this research examines the connections between CLE, IC, BCM, and SP, employing PLS-SEM for analysis.

Research Findings: CLE significantly influences both IC and BCM, while IC positively impacts SP. This study also highlights the moderating roles of IC and BCM in enhancing organisational resilience.

Theoretical Contribution/Originality: The study unveils the substantial influence of CLE on IC and BCM, emphasising their importance in bolstering SP. These findings deepen our understanding of crisis leadership, innovation capability, BCM, and sustainable performance dynamics.

Managerial Implication in the Southeast Asian Context: IPMA findings underscore BCM's significance for organisational sustainability, emphasising its alignment with effective CLE. Prioritising BCM alongside fostering IC is essential for organisational adaptability and innovation.

Research Limitation & Implications: While focusing on specific variables, the study acknowledges the potential influence of other factors that are not mentioned. Future research should explore these aspects, incorporating the Resource-Based View and Dynamic Capabilities Theory for a comprehensive understanding.

Keywords: Crisis Leadership, Innovation Capability, Business Continuity Management, Sustainable Performance, Sustainability

INTRODUCTION

The COVID-19 pandemic has left an unforgettable mark on the world, not only as a health crisis but also as a formidable challenge for businesses across industries (El-Chaarani, 2021). The enduring trauma and ongoing repercussions of this global crisis continue to shape the landscape

of business operations, economics, and society as a whole. In the wake of COVID-19, businesses have faced unprecedented disruptions, necessitating swift and adaptive responses to ensure their survival and sustainable performance (Chatterjee & Chaudhuri, 2022).

All Micro, Small, and Medium-sized Enterprises (MSMEs) and large firms in both developing and developed countries are facing extraordinarily difficult conditions (El-Chaarani, 2021). A survey conducted during the early stages of the pandemic found that some businesses had only about two weeks of cash on hand at that time while also having more than \$10,000 in monthly expenses (Kalogiannidis, 2020). In contrast, other companies that had previously enjoyed healthy profits had only enough cash reserves to sustain themselves for a maximum of two months (Kalogiannidis, 2020). COVID-19 caused a major economic shock apart from impacting public health. The pandemic had a rapid and devastating impact on small businesses, with many facing massive damage within a week, even before government aid became available.

The surge in COVID-19 cases had substantial repercussions on the global economy, and Indonesia was no exception. The pandemic's impact rippled across various sectors, notably affecting transportation, tourism, trade, and healthcare in Indonesia (Susilawati et al., 2020). Another study highlighted a broad decline in economic activity across Indonesia, with COVID-19 significantly impacting household consumption, investment, and financial institutions (Astuti & Mahardhika, 2020).

Amidst these challenges, the role of Crisis Leadership (CLE) has emerged as a critical determinant of an organisation's ability to weather the storm, adapt, and thrive in an ever-changing environment (Alharthi & Khalifa, 2019). For example, in the Indonesian context, CLE, in the form of virtual leadership, influences employees' creativity (Ibrahim et al., 2023), increasing innovation capability (Hutajulu et al., 2021). Another study also stated that Transformational Leadership during COVID-19 may influence macro shifts in development, change, and crises, leading to increased innovation capability (Ibrahim et al., 2023). Effective Crisis Leadership involves not only responding to crises as they unfold but also cultivating the capacity for innovation and the implementation of Business Continuity Management (BCM) practices (Alharthi & Khalifa, 2019). These components collectively contribute to an organisation's ability to achieve Sustainable Performance (SP).

The importance of Business Continuity Management became starkly evident during the COVID-19 crisis, as organisations were forced to pivot rapidly to address supply chain disruptions, remote work arrangements, and shifts in customer behaviour (Sawalha, 2013). With its emphasis on risk

assessment, contingency planning, and crisis response, BCM has proven to be a lifeline for many organisations navigating uncertain conditions and situations (Kim & Amran, 2018).

In parallel, the significance of Innovation Capability (IC) has been underscored during the pandemic. Innovation became an essential means for businesses to adapt, introducing new products, services, and operational strategies to meet evolving customer demands and market conditions (Chatterjee & Chaudhuri, 2022). Those organisations with robust innovation capabilities demonstrated resilience and agility, enabling them to pivot successfully in response to the crisis (Yusuf & Suseno, 2020).

Sustainable Performance (SP) has long been a core goal for organisations, but the pandemic reinforced its importance. For long-term firm performance and survival, firms must effectively manage crises caused by a variety of unpredictable and abnormal external events such as financial crises, natural disasters, terror attacks, and industrial accidents, among others (Hu et al., 2022). Beyond immediate crisis response, sustainable performance encapsulates an organisation's ability to endure, grow, and contribute positively to society over the long term (Rezaee et al., 2019; Shafi, 2020). Although some previous studies question the importance of maintaining sustainable activities during the crisis, it has been proven that maintaining sustainable performance leads to higher returns and lower volatility (Yoo et al., 2021).

However, it is essential to recognise that all these critical factors – BCM, IC, and SP – hinge on effective leadership. Leadership played a pivotal role in navigating the complex and uncertain terrain of the COVID-19 pandemic (Chatterjee & Chaudhuri, 2022). Crisis Leadership, as a distinct and vital facet of leadership, emerged as a linchpin in enabling organisations to harness their innovation capability (Chatterjee & Chaudhuri, 2022), implement effective BCM (Alharthi & Khalifa, 2019), and ultimately achieve sustainable performance (Woodfield et al., 2017; Wang & Huang, 2022).

This study is grounded in established theories of crisis management and sustainability. Crisis management theories offer insights into the strategic response of leaders to crises, including crisis communication, decision-making, and the orchestration of resources (Brataas, 2018; Ritter & Pedersen, 2020; Maak et al., 2021). The sustainability concept provides a framework for understanding how organisations increase or maintain their economic, social, and environmental values in the face of challenges (Hu et al., 2022). Together, these theoretical foundations provide a structured approach to analyse and interpret the relationships between CLE, IC, BCM, and SP, shedding light on the dynamic interplay between leadership, crisis response, and organisational sustainability.

This study aims to explore the relationships between Crisis Leadership (CLE), Innovation Capability (IC), Business Continuity Management (BCM), and Sustainable Performance (SP) amidst the challenges posed by the COVID-19 pandemic. Building upon established theories of crisis management and sustainability, the research seeks to address the following research questions: (1) How does Crisis Leadership influence Innovation Capability, Business Continuity Management, and Sustainable Performance during the COVID-19 pandemic? (2) What are the direct effects of Innovation Capability and Business Continuity Management on Sustainable Performance in the context of crisis leadership?

In addition to examining the direct effects, the study will also investigate the mediating role of Innovation Capability and Business Continuity Management in the relationship between Crisis Leadership and Sustainable Performance. By addressing these research questions, the study aims to provide valuable insights into the strategic responses of organisations to crises, as well as the mechanisms underlying sustainable performance in turbulent times.

To address these complex relationships, this study sets out to test specific hypotheses relating to the mentioned variables. The hypotheses are arranged to be a research model that will be tested in fields in Indonesia. In the following sections, the literature surrounding each of these components is explored, the research methodology is presented, and the findings and discussions are shared. The conclusion will touch upon limitations and offer suggestions for future research, recognising the evolving nature of crises, leadership, and business paradigms.

LITERATURE REVIEW

This literature review aims to provide a comprehensive understanding of four pivotal variables: Crisis Leadership (CLE), Innovation Capability (IC), Implementation of Business Continuity Management (BCM), and Sustainable Performance (SP). Crisis leadership (CLE) represents the strategic and operational responses of organisational leaders when confronted with crises, disasters, or disruptive events (Hu et al., 2022). CLE encompasses a multifaceted set of competencies, including decision-making under uncertainty, crisis communication, resource allocation, and the ability to inspire and guide teams through turbulent times (Chatterjee & Chaudhuri, 2022). Importantly, crisis leadership extends beyond mere reaction; it involves proactive measures to prepare for and mitigate the impact of potential crises (Madeira et al., 2020). Researchers have emphasised the central role of leaders in shaping an organisation's crisis resilience (Bligh et al., 2018), demonstrating that effective CLE can significantly influence an organisation's capacity to adapt and endure in the face of adversity. As organisations grapple with the aftermath of the

COVID-19 pandemic, the importance of CLE has never been more pronounced, with its capacity to steer organisations through uncertainty and towards sustainable recovery.

The second is Innovation Capability (IC), which refers to an organisation's ability to create, foster, and effectively utilise innovation to gain a competitive advantage and adapt to changing circumstances (Aas & Breunig, 2017). It encompasses a range of elements, from cultivating a culture of creativity and idea generation to efficiently implementing novel solutions in response to challenges (Ferreira et al., 2020). The COVID-19 pandemic underscored the critical role of IC, as organisations that possessed robust innovation capabilities were better positioned to pivot their strategies, develop new products or services, and adapt to shifting market dynamics (Chatterjee & Chaudhuri, 2022). IC not only fuels immediate crisis response but also contributes to an organisation's long-term resilience by promoting a culture of continuous improvement and adaptability. In essence, IC is the lifeblood of organisational agility, enabling businesses to thrive in volatile and uncertain environments.

The third variable is Business Continuity Management (BCM), which refers to a holistic approach that encompasses policies, procedures, and practices designed to ensure an organisation's ability to continue its critical functions in the face of disruptions (Alharthi & Khalifa, 2019; Kim & Amran, 2018). It includes risk assessment, contingency planning, crisis response, and recovery strategies (Speight, 2011). BCM emerged as a critical necessity during the COVID-19 pandemic, as it enabled organisations to anticipate and mitigate the effects of the crisis, maintain essential operations, and minimise financial and reputational losses (Pinzaru et al., 2020). The implementation of BCM not only safeguards an organisation's immediate survival but also contributes to its long-term sustainability by instilling a proactive and risk-aware organisational culture. In a world marked by uncertainty and rapidly evolving threats, the strategic adoption of BCM is pivotal for safeguarding an organisation's viability and sustainability.

The last is Sustainable Performance (SP), which reflects an organisation's ability to achieve enduring success while simultaneously minimising negative impacts on the environment, society, and stakeholders. Beyond mere financial profitability, SP considers a broader spectrum of performance indicators that is not only focused on economic value but also encompasses social responsibility and environmental stewardship (Pham & Kim, 2019). As the global community confronts mounting challenges related to climate change, social equity, and resource scarcity, SP has gained prominence (Höse et al., 2022). Organisations that prioritise SP not only navigate crises more effectively but also contribute positively to society and secure their long-term competitiveness. In the context of the COVID-19 pandemic, SP becomes an essential compass for

businesses seeking to balance immediate survival with responsible, forward-looking practices that foster resilience and sustainable growth.

Having defined the key variables under investigation in this study - Crisis Leadership (CLE), Innovation Capability (IC), Implementation of Business Continuity Management (BCM), and Sustainable Performance (SP) - it is imperative to explore the intricate interplay among them. These variables are not isolated components but integral facets of an organisation's ability to navigate crises, innovate, maintain essential functions, and achieve long-term sustainability. Within this context, hypotheses are formulated to shed light on the relationships that bind these critical elements together. Each hypothesis, grounded in existing theory and empirical evidence, articulates the expected influence of one variable on another. Through rigorous analysis, this study aims to validate these hypotheses, thereby advancing our understanding of the dynamics at play in times of crisis and their profound impact on organisational performance and sustainability. In the subsequent sections, we delve into each hypothesis, outlining the specific relationships and anticipated outcomes in the context of our research model.

While numerous studies emphasise the importance of Crisis Leadership (CLE) and the critical role of Innovation Capability (IC) in enhancing organisational sustainability and performance, there is a notable research gap at the intersection of these two constructs. Existing literature predominantly concentrates on the broader concept of crisis management and its influence on organisational outcomes (Otache & Usang, 2022), overlooking the distinct dimension of Crisis Leadership (CLE) and its direct impact on fostering a culture of innovation within organisations. Leadership is unequivocally paramount in crisis contexts, guiding strategic decisions, mobilising resources, and shaping organisational responses (Boin et al., 2013; Atarodi et al., 2021; Maak et al., 2021). Simultaneously, Innovation Capability has emerged as a linchpin in organisations' abilities to adapt, innovate, and thrive amidst crisis. This research aims to address this apparent void by examining the relationship between Crisis Leadership and Innovation Capability, paving the way for a nuanced understanding of how effective leadership in crisis situations can stimulate and bolster an organisation's innovation capacity. This research tries to contribute novel insights into the dynamic interplay between CLE and IC, elucidating their combined potential in navigating crises and advancing organisational success.

The relationship between Crisis Leadership (CLE) and Innovation Capability (IC) is grounded in Dynamic Capability Theory, which underscores a firm's ability to integrate and reconfigure internal and external capabilities in response to rapidly changing environmental issues (Tece et al., 1997). Crises, while presenting inherent risks, also serve as catalysts for innovation,

emphasising the relative advantages of innovative approaches and driving organisational change (Shi et al., 2022). Effective Crisis Leadership enables organisations to dynamically adjust their internal processes and resource allocations, leveraging crises as opportunities to foster an environment conducive to innovation and adaptation in the face of evolving challenges. This explanation leads to the first hypothesis of this study, which is:

H₁: CLE significantly and positively impacts IC.

The second hypothesis is related to Crisis Leadership and The Implementation of Business Continuity Management. This hypothesis posits that effective Crisis Leadership (CLE) within organisations during crises, particularly in the context of the COVID-19 pandemic, plays a substantial role in influencing and enhancing the Implementation of Business Continuity Management (BCM) practices. While the relationship between crisis situations and BCM has garnered significant attention in the literature, this study addresses a critical gap by specifically examining the impact of Crisis Leadership on BCM implementation. Previous literature only examined the impact of Business Continuity model implementation toward

While previous literature has extensively explored the relationship between crisis situations and Business Continuity Management (BCM) (Castillo, 2005; Pinzaru et al., 2020; Margherita & Heikkilä, 2021), a notable gap exists in explicitly examining the role of Crisis Leadership in driving the effective implementation of BCM practices. These studies have primarily focused on implementing Business Continuity Models and their impacts on facilities professionals (Castillo, 2005), analysing workplace trends during a crisis so that BCM can be achieved (Pinzaru et al., 2020), and extracting actions related to business continuity responses (Margherita & Heikkilä, 2021). However, they have not specifically investigated the impact of leadership variables, such as Crisis Leadership, on the implementation of BCM. This gap is particularly significant in the context of Dynamic Capability Theory, which emphasises a firm's ability to integrate and reconfigure internal and external capabilities in response to rapidly changing environmental issues (Teece et al., 1997). Therefore, this study aims to address this gap by examining how Crisis Leadership significantly and positively influences the implementation of Business Continuity Management, thereby contributing to a more comprehensive understanding of organisational resilience strategies within the framework of Dynamic Capability Theory.

Crisis leaders, through their ability to make informed decisions, allocate resources efficiently, and communicate effectively, are instrumental in shaping an organisational culture that prioritises BCM (Davis & Gardner, 2012; Boin et al., 2013; Maak et al., 2021). This relationship is also supported by a previous study, which stated that crisis leadership positively impacts business

continuity management (Alharthi & Khalifa, 2019). By fostering a proactive and resilient approach, this hypothesis suggests that CLE contributes to the successful adoption and execution of BCM measures, ultimately enhancing an organisation's capacity to navigate crises, ensure operational continuity, and mitigate disruptions. Thus, the second hypothesis is:

H₂: CLE significantly and positively impact the Implementation of Business Continuity Management.

This hypothesis asserts a fundamental linkage between an organisation's Innovation Capability (IC) and its ability to achieve Sustainable Performance (SP). It aligns with some previous studies that recognise innovation as one of the primary drivers of sustained success in a rapidly changing business environment (Bakoğlu & Yıldırım, 2016; García-Machado & Martínez-Ávila, 2019; AlNuaimi et al., 2021). IC encompasses an organisation's capacity to innovate, adapt, and respond to dynamic market conditions, thereby fostering growth and competitiveness (Teece et al., 1997; Ferreira & Coelho, 2020; Rhee & Stephens, 2020). In the context of this hypothesis, IC is posited as a key factor contributing to SP, encompassing not only financial success but also a broader commitment to social responsibility and environmental stewardship (Mishra, 2017; Pham & Kim, 2019). This hypothesis anticipates that organisations with robust IC are better equipped to navigate uncertainties, capitalise on opportunities, and contribute positively to society over the long term.

The relationship between IC and SP aligns with the notion of Competitive Advantage Theory, which posits that organisations achieve sustainable competitive advantage by leveraging unique resources and capabilities to create superior value for customers (Barney, 1995; Porter, 2008). In the context of Innovation Capability (IC) and Sustainable Performance (SP), organisations with strong IC are better positioned to innovate and develop novel products, services, or processes that differentiate them from competitors, thereby enhancing their competitive advantage. Moreover, this alignment with Competitive Advantage Theory is reinforced by the concept of Dynamic Capability, which emphasises an organisation's ability to adapt and reconfigure its resources in response to changing market conditions (Teece et al., 1997). By continuously enhancing their IC, organisations can cultivate a dynamic and sustainable competitive advantage, enabling them to thrive in dynamic and competitive business environments. This integration of Competitive Advantage Theory and Dynamic Capability Theory provides a theoretical framework for understanding how IC contributes to SP by enabling organisations to create and sustain competitive advantages over time. Thus, the third hypothesis is:

H₃: IC significantly and positively impact SP.

Hypothesis 4 examines the influence of the Implementation of Business Continuity Management (BCM) on an organisation's Sustainable Performance (SP). This hypothesis acknowledges that BCM extends beyond immediate crisis response; it encompasses strategic preparedness, risk mitigation, and continuity planning. In the context of the dynamic and uncertain business landscape, organisations implementing BCM practices are better positioned to ensure operational resilience, maintain essential functions, and safeguard stakeholders' interests. BCM, by minimising the impact of disruptions and enhancing an organisation's ability to endure and adapt, contributes not only to short-term survival but also to long-term sustainability (Leiß & Zehrer, 2018; Sawalha, 2020).

This relationship also aligns with the notion of Competitive Advantage and Dynamic Capability, which posits that organisations can gain a competitive edge by effectively managing their resources and capabilities to adapt to changing market conditions (Porter, 1985; Teece et al., 1997). In the context of Business Continuity Management (BCM) and Sustainable Performance (SP), organisations with robust BCM practices demonstrate resilience and agility in responding to disruptions, thereby enhancing their competitive advantage. By effectively managing risks and ensuring continuity of operations, organisations can maintain customer satisfaction, safeguard reputation, and mitigate financial losses, contributing to sustained performance over time. Additionally, the alignment with Dynamic Capability Theory underscores the importance of BCM in enabling organisations to dynamically adjust their strategies and operations in response to evolving threats and opportunities, thus enhancing their ability to achieve and maintain competitive advantage in dynamic business environments. This integration of Competitive Advantage and Dynamic Capability theories provides a theoretical foundation for understanding how BCM contributes to SP by enhancing organisational resilience and adaptability. Thus, the fourth hypothesis is:

H₄: The Implementation of BCM significantly and positively impacts SP.

This research also explores the mediating roles of Innovation Capability (IC) and Business Continuity Management (BCM) in the relationship between Crisis Leadership (CLE) and Sustainable Performance (SP). Innovation Capability represents an organisation's ability to generate and implement novel ideas, products, and processes, while Business Continuity Management refers to the strategies and practices implemented to ensure organisational resilience and continuity in the face of crises. A previous study conducted by Alharthi and Khalifa (2019) supported the indirect relationship between CLE and SP through BCM. Thus, the two hypotheses related to mediating roles of IC and BCM are:

H₅: The mediating role of IC between CLE and SP is significant, such that CLE positively influences SP through its positive effect on IC.

H₆: The mediating role of BCM between CLE and SP is significant, such that CLE positively influences SP through its positive effect on BCM.

By investigating the mediating effects of IC and BCM, this study aims to provide insights into the mechanisms through which Crisis Leadership influences Sustainable Performance. Based on the explanation above, this study proposed research as shown in Figure 1.

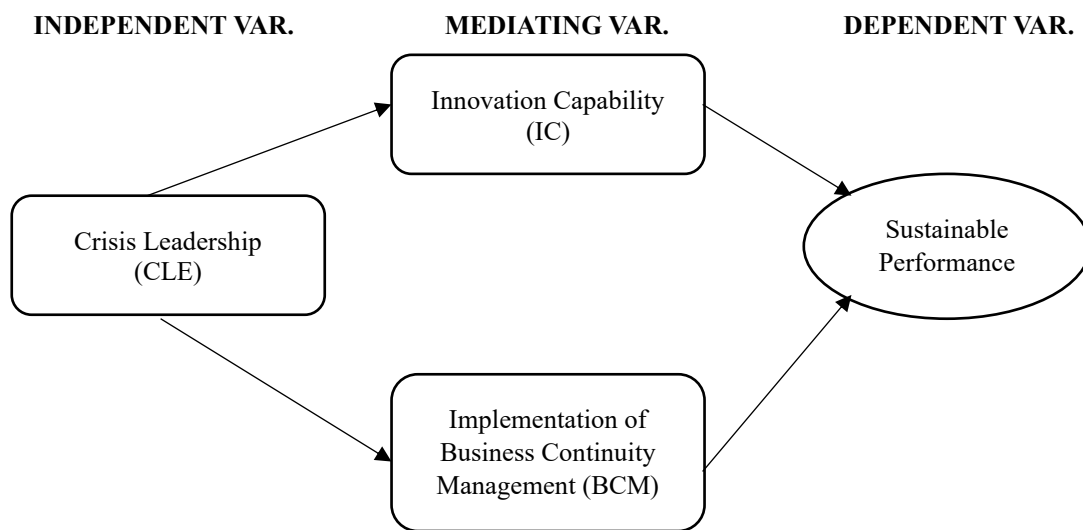


Figure 1. The Proposed Research Model

RESEARCH METHOD

This study employs a quantitative research approach, characterised by the collection and analysis of numerical data, to investigate the relationships between Crisis Leadership (CLE), Innovation Capability (IC), Implementation of Business Continuity Management (BCM), and Sustainable Performance (SP). The choice of a quantitative approach is driven by the research's objective to empirically test hypotheses and uncover statistically significant relationships among variables (Neuman, 2014). Quantitative research allows for systematic data analysis, facilitating the establishment of robust correlations and enhancing the study's objectivity (Neuman, 2014).

A quantitative approach is particularly well-suited to this study for several reasons. Firstly, it enables the rigorous testing of hypotheses, providing empirical evidence to support or refute the proposed relationships between the variables. Secondly, it allows for the examination of a diverse and sizable dataset collected from 209 participants, including individuals with various professional backgrounds. Despite the diverse professional backgrounds of the respondents, this study selected

individuals who have leaders above them to ensure uniformity in evaluation. This approach allows them to assess both their leaders' Crisis Leadership Effectiveness (CLE) and their own companies' performance during the COVID-19 pandemic from a sustainable or related perspective. The quantitative approach offers statistical power, allowing for a comprehensive exploration of the intricate interplay between CLE, IC, BCM, and SP.

Additionally, the quantitative approach aligns with the study's aim to provide quantifiable insights into the impact of Crisis Leadership, Innovation Capability, and Business Continuity Management on Sustainable Performance. By relying on numerical data, this approach enhances the study's ability to generate precise findings (Vanderstoep & Johnston, 2009; Neuman, 2014), contributing to a deeper understanding of the dynamics at play in times of crisis and their implications for organisational performance and sustainability.

Data was collected through an online survey conducted from July 4th, 2023, to August 5th, 2023, gathering responses from a diverse sample of 209 participants. This sample size was determined to ensure adequate statistical power and representativeness for the study's objectives. As recommended by best practices in survey research, a sample size of 200 or more is often considered sufficient for conducting robust statistical analyses and drawing reliable conclusions (Boomsma, 1982). By including 209 participants, the study aimed to enhance the generalizability of findings and capture a broad range of perspectives from individuals occupying various roles within organisations. Table 1 shows the information regarding the demographic (Gender and Position) of the survey participants.

Table 1. Survey Participants Demographic

Position	Percentage of Gender and Position		
	Female	Male	Grand Total
CFO	1,75%	0,00%	1,75%
Head of Department	3,51%	0,00%	3,51%
Head Of Project	1,75%	5,26%	7,02%
Manager	19,30%	36,84%	56,14%
Officer	5,26%	3,51%	8,77%
Officer (Accounting)	1,75%	0,00%	1,75%
Officer (Marketing)	1,75%	3,51%	5,26%
Officer (Recruitment)	0,00%	1,75%	1,75%
Officer (Sales)	0,00%	1,75%	1,75%
Secretary	1,75%	0,00%	1,75%
Senior Manager	0,00%	1,75%	1,75%
Supervisor	1,75%	7,02%	8,77%
Grand Total	38,60%	61,40%	100,00%

The questionnaire was constructed by a literature review of the four variables mentioned. For Crisis Leadership, this study uses nine items, which include elements such as early recognition, making critical decisions, and learning (Boin et al., 2013). For Innovation Capability, this study

uses five items (Lam et al., 2021). For the Implementation of Business Continuity Management, this study uses 12 items (Krell, 2006). Lastly, the items to measure sustainable performance are constructed based on a study conducted by Younis & Sundarakani (2020). All the items were translated to Bahasa Indonesia since all the respondents are Indonesians. a 5-Likert-Scale was employed to assess respondents' attitudes and opinions on the subject matter. A rating of '1' corresponds to 'Very Disagree,' indicating strong disagreement with the statement, while '2' signifies 'Disagree,' representing a lesser degree of disagreement. '3' represents 'Neutral,' indicating a neutral or ambivalent stance. On the positive side, '4' stands for 'Agree,' signifying agreement with the statement, and '5' represents 'Very Agree,' indicating strong agreement.

Table 2. Questionnaire's Items

Indicators	Items
Crisis Leadership (Boin et al., 2013)	
Early Recognition	Did my leaders create conditions that facilitate early recognition?
Sense Making	Did leaders create, facilitate, and rehearse a sensemaking method?
Making Critical Decisions	Did leaders carefully deliberate which decisions they should make, and did they make the decision after some form of due process?
Coupling and Decoupling	Did crisis leaders actively monitor the state of critical (life-sustaining) systems and the connections between them? Did they access expertise with regard to these critical systems?
Meaning Making	Did crisis leaders offer a clear interpretation of the crisis and explain how they intended to lead their community out of it?
Communication	Did crisis leaders actively cooperate with their communications professionals to ensure they had timely and correct information for dissemination to the public?
Rendering Accountability	Did leaders make an effort to present a transparent and constructive account of their actions before and during the crisis? Did leaders allow for reflection on the effects of chosen courses of Action?
Learning	Did leaders encourage and tolerate negative feedback? Did they record crisis management proceedings to facilitate outsiders' learning?
Innovation Capability (Lam et al., 2021)	
-	Our company develops new production methods and procedures. Our company introduces newer (or improved) management methods and procedures than three years ago. Our company introduces newer (or improved) products than three years ago. Our company modifies and/or improves existing products.
Implementation of Business Continuity Management (Krell, 2006)	
Assessment and Objective Setting	The company was able to identify potentially threatening impacts to the organisation during the COVID-19 pandemic. The company is carrying out project planning to deal with the emerging impact of COVID-19.
Critical Process Identification	The company created teams and assigned roles and responsibilities to projects to deal with the emerging impact of COVID-19. The company carries out a risk identification and analysis process in dealing with COVID-19.

Table 2. Questionnaire's Items (Continued)

Indicators	Items
Business Impact Analysis	Companies carry out business impact analysis, which is a process of analysing and identifying how a particular set of business processes is likely to be affected by unexpected disruptions.
Continuity Response Approaches:	Companies develop data backup and recovery strategies.
Preparation and Crisis Management	The company develops a crisis recovery plan The company develops a sustainable business plan.
Monitoring, Testing Improving	The company carries out regular testing (monitoring) of the developed plans. The company carries out regular maintenance of the developed plans The company carries out regular improved versions of the plans developed The company holds regular employee training.
Sustainable Performance (Younis & Sundarakani, 2020)	During the COVID-19 pandemic, our company experienced a reduction in air/wastewater/solid waste emissions. During the COVID-19 pandemic, our company experienced a decrease in the consumption of hazardous/hazardous/toxic materials. During the COVID-19 pandemic, our company experienced a decrease in the frequency of accidents related to the environment (pollution and the like).
Environmental Performance	During the COVID-19 pandemic, our company minimised the negative impact on the environment from existing activities. During the COVID-19 pandemic, our company conducted regular environmental audits. During the COVID-19 pandemic, our company experienced increased compliance with environmental standards/regulations. During the COVID-19 pandemic, our company experienced an increase in profits. During the COVID-19 pandemic, our company experienced sales growth.
Economic Performance	During the COVID-19 pandemic, our company received a return on investment. During the COVID-19 pandemic, our company earned a return on equity (Return on Equity) During the COVID-19 pandemic, our company received a return on assets. During the COVID-19 pandemic, there has been an improvement in the quality of life of the people around our company. During the COVID-19 pandemic, there has been an increase in the health and safety of our company workers.
Social Performance	During the COVID-19 pandemic, there has been an increase in the level of employee job satisfaction at our company. During the COVID-19 pandemic, there has been an increase in relations with the community and stakeholders in our company. During the COVID-19 pandemic, there was motivation to develop the skills of our company's employees.

Partial Least Squares Structural Equation Modelling (PLS-SEM) was employed for data analysis. Since the model includes mediators (BCM and IC), PLS-SEM was chosen due to its suitability for testing hypotheses in models with multiple constructs and pathways. PLS-SEM offers advantages for accommodating both formative and reflective constructs, facilitating the examination of relationships between Crisis Leadership (CLE), Innovation Capability (IC), Implementation of Business Continuity Management (BCM), and Sustainable Performance (SP). This approach provides insights into how these factors, along with their mediating roles, collectively influence organisational outcomes, contributing to a comprehensive understanding of the research model.

RESULTS AND DISCUSSIONS

Before analysing the data collected, the PLS Algorithm is utilised to determine the validity and reliability. The reliability of the research instrument was assessed using Cronbach's alpha coefficient, a widely accepted measure of internal consistency. The calculated Cronbach alpha values for the variables in this study indicate a high level of reliability. Crisis Leadership (CLE) demonstrated a Cronbach alpha of 0.926, while Innovation Capability (IC) exhibited a Cronbach alpha of 0.896. The Implementation of Business Continuity Management (BCM) yielded a Cronbach alpha of 0.932, and Sustainable Performance (SP) scored 0.937. These values surpass the acceptable range for reliability, falling between 0.70 and 0.95, as suggested by prior research (Hair Jr et al., 2021). By maintaining values within this range, the indicators measuring each construct are deemed reliable without redundancy, ensuring the trustworthiness of the data.

Table 3. Convergent Validity

	Cronbach's Alpha	rho (ρ) A	Composite Reliability	Average Variance Extracted (AVE)
Sustainable Performance	0.937	0.942	0.944	0.529
Innovation Capability_	0.896	0.905	0.923	0.707
Crisis Leadership	0.926	0.939	0.938	0.628
Business Continuity Management	0.932	0.937	0.942	0.596

The validity of the research instrument was evaluated through an assessment of convergent validity, specifically focusing on the cross-loading values of reflective constructs. All cross-loading values were within an acceptable range, further affirming the instrument's validity. According to established criteria (Hair Jr et al., 2021), loading values for each indicator exceeded 0.70, a threshold commonly employed to indicate satisfactory convergent validity. Additionally, the significance of the loading values was confirmed, as indicated by p-values below 0.05, reinforcing the instrument's validity. Notably, while an ideal cross-loading value exceeds 0.70, values at or above 0.50 are still considered acceptable (Wilcox, 2017). The instrument's successful validation ensures that the indicators effectively measure their respective constructs and contributes to the robustness of the data analysed in this study. Table 4 shown are the cross-loading values for the validity test. The values of P-values will be mentioned in the hypotheses tests.

Table 4. Cross Loading Value for Validity Test

Items	CLE	IC	BCM	SP
1	0.875	0.842	0.720	0.708
2	0.796	0.779	0.803	0.714
3	0.712	0.878	0.710	0.714
4	0.771	0.818	0.807	0.723
5	0.777	0.884	0.776	0.735
6	0.820		0.802	0.664
7	0.809		0.733	0.757

Table 4. Cross Loading Value for Validity Test (Continued)

Items	CLE	IC	BCM	SP
8	0.734		0.781	0.764
9	0.832		0.813	0.720
10			0.789	0.666
11			0.753	0.745
12				0.739
13				0.725
14				0.757
15				0.788

According to AVE values in Table 3, the instruments are proven valid because all values are above 0.50, which indicates that the construct explains more than half of the variance of its indicators (Hair Jr et al., 2021).

After testing the reliability and validity of the questionnaires, we can now move on to the analysis part. Figure 1 shows all the results of the proposed model, in which the numbers above the arrow are the coefficients, and the numbers the arrows or in the brackets represent the significant values or P-values.

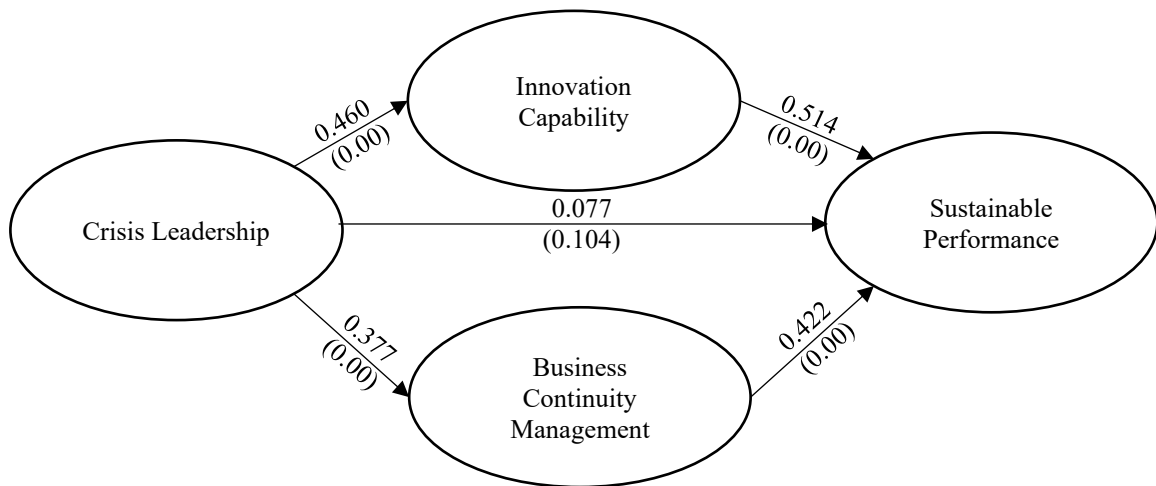


Figure 1. Overall Results

First, based on the results using PLS-SEM that are shown in Figure 1 above, H₁ is supported because the obtained p-value of <0.01 signifies a high level of statistical significance. Furthermore, the path coefficient of 0.460 indicates a positive and substantial effect of Crisis Leadership on Innovation Capability. This finding underscores the pivotal role of effective leadership in times of crisis, as it not only facilitates crisis management but also fosters an environment conducive to innovation. Organisations with strong Crisis Leadership are more likely to leverage their innovative potential, enhancing their ability to adapt, innovate, and excel in challenging circumstances.

H₂ explores the relationship between Crisis Leadership (CLE) and the Implementation of Business Continuity Management (BCM). The results confirm a significant and positive association, supported by a p-value of <0.01. The path coefficient of 0.377 signifies that effective Crisis Leadership plays a substantial role in influencing and enhancing the Implementation of BCM within organisations. This implies that leaders who excel in crisis situations not only guide strategic decisions but also prioritise proactive crisis preparedness measures. The findings emphasise that Crisis Leadership is important in shaping an organisational culture that values and prioritises BCM, ultimately enhancing an organisation's resilience and preparedness to manage crises effectively.

The support of H₁ and H₂ is consistent with prior studies highlighting CLE's pivotal role in guiding organisations through crises, emphasising proactive measures to mitigate risks and foster resilience (Hu et al., 2022). A previous study also supported the impact of CLE on the implementation of BCM due to its role in improving business continuity and prosperity by reducing crises during critical situations (Alharthi & Khalifa, 2019).

This significant and positive relationship between CLE and IC led this study to the concept of Dynamic Capability. During a crisis, the effectiveness of leaders in guiding organisations correlates with dynamic capabilities, where leaders leverage internal and external resources to influence the firm's capacity for innovation (Otache & Usang, 2022). This demonstrates that leaders or managers play a more crucial role than any other factor in fostering Innovation Capability (IC) during crises, given the heightened demand for high-quality human resources to manage all available resources effectively (Blaique et al., 2024). Thus, this also leads to the significant impact of CLE on the implementation of BCM as a form of crisis mitigation. This also aligns with one of the dimensions of Dynamic Capability, Seizing, in which the key is leveraging all the sources to achieve Competitive Advantage in any situation, even during crises (Weaven et al., 2021).

H₃ explores the impact of Innovation Capability (IC) on Sustainable Performance (SP). The analysis reveals a highly significant relationship with a p-value of <0.01. The path coefficient of 0.514 underscores the substantial and positive effect of Innovation Capability on Sustainable Performance. This finding aligns with the prevailing literature, highlighting the critical role of innovation in achieving sustainable success (Shafi, 2020; Wang & Huang, 2022). Organisations with a robust Innovation Capability are better positioned to adapt to changing market conditions, introduce innovative products or services, and contribute positively to societal and environmental goals, ultimately driving Sustainable Performance.

The results of H₄ indicate a significant relationship between the Implementation of Business Continuity Management (BCM) and Sustainable Performance (SP). The p-value of <0.01 demonstrates high statistical significance, and the path coefficient of 0.422 affirms a positive and meaningful impact. This suggests that organisations that diligently implement BCM practices are more likely to achieve sustainable long-term performance. This result is echoing previous research emphasising BCM's role in ensuring operational resilience and continuity (Sawalha, 2013; Kim & Amran, 2018). BCM, with its focus on risk reduction, resilience-building, and continuity planning, contributes not only to crisis response but also to an organisation's ability to thrive and contribute positively to society over time.

In analysing the results, it is evident that all hypotheses are accepted, signifying the presence of significant relationships between the studied variables. Notably, the path coefficients provide insights into the strength of these relationships. H₃, focusing on the impact of Innovation Capability on Sustainable Performance, exhibits the highest path coefficient at 0.53, underscoring the substantial influence of innovation on long-term organisational success. On the other hand, H₄, which explores the relationship between BCM and Sustainable Performance, shows a slightly lower path coefficient of 0.44, indicating a robust but somewhat lesser impact compared to innovation.

The findings emphasise the multifaceted nature of organisational success in contemporary business landscapes. While Crisis Leadership (H₁ and H₂) lays the foundation for effective crisis management and proactive BCM, it is the combination of Innovation Capability (H₃) and the Implementation of BCM (H₄) that contributes most significantly to Sustainable Performance. These results highlight the importance of fostering a culture of innovation and crisis preparedness while implementing BCM practices as integral components of sustainable organisational success.

This study also conducted a mediating test for BCM and IC since the direct effect of CLE on SP is not significant (P-value: 0.104, which is more than 0.05). For mediating effect, Table 5 shows the results of the specific indirect effect.

Table 5. Indirect Effect

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Crisis Leadership → Business Continuity Management → Sustainable Performance	0.159	0.159	0.031	5.147	0.000
Crisis Leadership → Innovation Capability → Sustainable Performance	0.236	0.240	0.037	6.364	0.000

Based on the results, it can be concluded that both IC and BCM fully mediate the relationship between CLE and SP. This type of mediation, known as Indirect-only mediation, signifies that although the direct effect of CLE on SP is not significant, its impact on SP is fully mediated by IC and BCM (Hair Jr et al., 2021).

This finding underscores the importance of considering the indirect pathways through which Crisis Leadership influences Sustainable Performance. While the direct impact of CLE on SP may not be noticeable, the significant mediating roles of IC and BCM highlight the critical role of these variables in translating leadership actions into tangible outcomes in terms of organisational performance and sustainability. Drawing from the previous study's findings, which emphasise the pivotal role of BCM in mediating the relationship between Crisis Leadership and organisational performance (Alharthi & Khalifa, 2019), the integration of BCM into the model provides a comprehensive framework for understanding organisational resilience strategies by emphasising the importance of both Crisis Leadership and Business Continuity Management in improving corporate crisis response.

The mediation analysis further clarifies the mechanisms by which Crisis Leadership contributes to Sustainable Performance. By fostering innovation capability and promoting effective business continuity management practices, organisations can leverage the potential of crisis leadership to navigate challenges, adapt to changing environments, and ultimately achieve sustainable success. The mediation of IC aligns with previous studies, which stated the important role played by Innovation Capability in fostering leadership during the crisis to bring good performance (Kaul et al., 2020; Faulks et al., 2021). These findings emphasise the need for organisations to not only cultivate effective Crisis Leadership but also invest in building Innovation Capability and implementing robust Business Continuity Management strategies to enhance their resilience and long-term performance in dynamic and uncertain business landscapes.

This study also conducted the IPMA (Importance-Performance Map Analysis) Test. The Importance-Performance Map Analysis (IPMA) is a valuable analytical tool that extends standard PLS-SEM results reporting by adding a dimension to the analysis, considering both the total effects of constructs (Hair Jr et al., 2021), such as Business Continuity Management (BCM), Crisis Leadership (CLE), and Innovation Capability (IC) on the target construct of Sustainable Performance and their respective performance levels. By contrasting the total effects of these constructs on Sustainable Performance with their average latent variable scores, the IPMA aims to identify areas where they play a significant role in shaping Sustainable Performance while

exhibiting potential areas for improvement (Hair Jr et al., 2021). Table 5 shows the result of the IPMA Test.

Table 5. IPMA Test

	Sustainable Performance
Business Continuity Management	0.498
Crisis Leadership	0.485
Innovation Capability	0.449

The IPMA results reveal that Business Continuity Management (BCM) has the highest total effect on Sustainable Performance, with a value of 0.498. This underscores the importance of BCM in influencing Sustainable Performance. However, the performance level of BCM, as indicated by its average latent variable score, suggests potential areas for enhancement to further optimise its impact on Sustainable Performance.

Similarly, Crisis Leadership (CLE) and Innovation Capability (IC) also demonstrate notable total effects on Sustainable Performance, with values of 0.485 and 0.449, respectively. These findings highlight the significance of CLE and IC in shaping Sustainable Performance within organisations. However, there are opportunities for improvement in the performance levels of both CLE and IC, as indicated by their respective average latent variable scores.

The hypotheses in this study, supported by empirical data, match well with the ideas of Dynamic Capability Theory and Competitive Advantage. CLE is shown to significantly and positively impact IC (H_1), and this aligns with Dynamic Capability Theory, which emphasises organisations' abilities to adapt and reconfigure resources in response to dynamic environments (Ferreira et al., 2020). Effective Crisis Leadership enables firms to navigate crises proactively, fostering an environment conducive to innovation and adaptation.

Then, IC is revealed to significantly and positively influence SP (H_3). This finding underscores the essential role of innovation in driving long-term organisational success and sustainability. From the perspective of Competitive Advantage, organisations with robust IC gain a competitive edge by continuously innovating and differentiating themselves in the market (Sigalas, 2015). This aligns with the notion that sustainable competitive advantage arises from leveraging unique resources and capabilities to create superior value for customers (El-Kassar & Singh, 2019; Liu, 2019).

MANAGERIAL IMPLICATIONS IN THE SOUTH EAST ASIAN CONTEXT

In practical areas, this study shows that organisations that prioritise Crisis Leadership can leverage their Innovation Capability, fostering adaptability and innovation even in the face of adversity. Furthermore, a focus on Crisis Leadership contributes to the effective implementation of BCM, ensuring organisations are well-prepared for crises. Combining Innovation Capability and the Implementation of BCM enhances Sustainable Performance, positioning organisations to thrive in the ever-evolving business landscape while positively contributing to broader societal and environmental goals. This study also enriches and contributes to the study of Crisis Leadership, Innovation Capability and Business Continuity Management.

According to the results of the IPMA Test, it has been identified that Innovation Capability (IC) exhibits a relatively low-performance level compared to its importance in shaping Sustainable Performance (SP). Additionally, Business Continuity Management (BCM) and Crisis Leadership (CLE) may also show areas for improvement in performance to better align with their importance in driving Sustainable Performance.

To address these critical management problems and enhance organisational effectiveness, top management should focus on the following strategies:

Strengthening Innovation Capability (IC), in which the organisation need to cultivate a culture of innovation by encouraging creativity, risk-taking, and experimentation. Other practices are investing in Research and Development (R&D) initiatives to develop new products, services, and processes; implementing training programs to enhance employees' skills in critical thinking, problem-solving, and creativity; and fostering cross-functional collaboration to facilitate the exchange of ideas and knowledge across departments.

Enhancing Business Continuity Management (BCM). Actions needed are developing robust business continuity plans to address potential disruptions and ensure organisational resilience; investing in technology and infrastructure to support remote work arrangements and ensure continuity of operations during crises; conducting regular risk assessments and scenario planning exercises to identify and mitigate potential threats to business continuity; and provide training and resources to employees to effectively implement and adhere to business continuity protocols.

Improving Crisis Leadership (CLE). Examples of practices are enhancing leadership capabilities through training and development programs focused on crisis management and decision-making; fostering a culture of transparency, communication, and trust to facilitate effective crisis response

and decision-making; establishing clear roles and responsibilities for crisis management teams and ensuring regular drills and simulations to prepare for potential emergencies; provide ongoing support and resources to leaders to help them navigate complex and rapidly evolving crisis situations.

THEORETICAL IMPLICATIONS

This study provides theoretical implications that contribute to the broader body of knowledge in crisis management, innovation, and business continuity. By integrating multiple theoretical frameworks, including elements from crisis management, innovation management, and sustainability perspectives, this research sheds light on the intricate interplay between Crisis Leadership (CLE), Innovation Capability (IC), Business Continuity Management (BCM), and Sustainable Performance (SP) within organisational contexts.

One significant theoretical contribution is the integration of leadership theories, highlighting the role of leadership in nurturing innovation. The findings underscore how Crisis Leadership positively influences Innovation Capability, emphasising the importance of fostering leadership qualities conducive to innovation, especially in times of crisis.

Furthermore, the study advances our understanding of the relationship between BCM and Sustainable Performance, revealing BCM's potential as a driver of long-term organisational viability. This broadens our appreciation of continuity planning and resilience-building practices beyond risk mitigation. The research prompts further theoretical development by highlighting the need for deeper exploration of the complex relationships between CLE, IC, BCM, and SP. This suggests opportunities for advancing existing theories or formulating new ones to enhance our understanding of organisational responses to crises, innovation management, and sustainability.

This research underscores the importance of considering indirect pathways through which Crisis Leadership influences Sustainable Performance, played by IC and BCM. By fostering Innovation Capability and promoting effective Business Continuity Management practices, organisations can leverage Crisis Leadership to navigate challenges, adapt to changing environments, and achieve sustainable success. These findings emphasise the need for organisations to invest in building Innovation Capability and implementing robust Business Continuity Management strategies to enhance their resilience and long-term performance in dynamic business landscapes.

In conclusion, the theoretical implications of this study contribute to our understanding of organisational behaviour in times of crisis, innovation management, and sustainability. By

integrating diverse theoretical perspectives and uncovering intricate relationships, this research enriches our comprehension of how organisations navigate crises, foster innovation, and achieve sustainable performance.

CONCLUSION

This study embarked on an exploration of the relationships between Crisis Leadership (CLE), Innovation Capability (IC), Implementation of Business Continuity Management (BCM), and Sustainable Performance (SP) within organisations. The empirical analysis revealed compelling insights, with all hypotheses exhibiting significant relationships. Crisis Leadership emerged as a critical driver of Innovation Capability, fostering a culture of innovation during challenging times. Additionally, crisis leadership also impacts the implementation of BCM, reinforcing the importance of effective crisis management and proactive preparedness.

Innovation Capability was confirmed as a substantial contributor to Sustainable Performance, highlighting the role of innovation in achieving long-term organisational success. Simultaneously, the Implementation of BCM was found to significantly impact Sustainable Performance, emphasising the relevance of continuity planning and resilience-building in enhancing an organisation's sustainability. Innovation Capability and Implementation of BCM were confirmed as substantial mediators in the relationship between Crisis Leadership and Sustainable Performance. While crisis leadership showed no significant direct impact on sustainable performance, its influence was fully mediated by both innovation capability and implementation of BCM. These findings underscore the importance of fostering innovation and implementing effective continuity management practices as pathways to achieving sustainable performance in organisations.

It is essential to acknowledge several limitations in this study. The research is limited in terms of the variables included in the analysis. There may be other crucial variables that were not considered in the present study. Thus, future research should expand variables to encompass a broader understanding of organisational responses during crises, emphasising the need to measure Dynamic Capability and Technology Implementation for comprehensive analysis. In this study, Dynamic Capability is discussed as an explanatory concept rather than a measured variable in this journal. Therefore, future studies should also incorporate measurement of Dynamic Capability to enhance analysis. Another limitation of this study lies in the sampling technique employed, where the conclusions may be biased as a result of this unequal distribution of respondents among job positions. Future studies should aim to address these biases by employing more rigorous sampling

methodologies and ensuring a more balanced representation of respondents across different job positions within organisations.

In conclusion, while this study contributes valuable insights into the relationships between Crisis Leadership, Innovation Capability, Implementation of Business Continuity Management, and Sustainable Performance, it is essential to recognise the study's limitations and avenues for future research. A more comprehensive exploration of variables and theories can further enrich our understanding of crisis management, innovation, and sustainability within organisations, ultimately guiding more effective strategies for success in today's ever-evolving business landscape.

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