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Crisis Leadership and Organizational Resilience for Sustainable Healthcare: The Moderating Role of Agile Leadership in Iraq's Private Hospitals

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Abstract

This study investigates the role of crisis leadership in fostering organizational resilience and its subsequent influence on sustainable healthcare in Iraq's private hospitals. It further examines the moderating effect of leadership agility on the relationship between organizational resilience and sustainable healthcare. A quantitative, cross-sectional survey design was adopted. Usable data were collected from 158 leaders and managers across nine major private hospitals in Baghdad, Erbil, Basra, and Najaf. Validated measurement scales were employed, and data were analyzed using SPSS (Version 28) through hierarchical multiple regression analyses. The results show that decisiveness and communication significantly enhance organizational resilience, whereas empathy (ET) does not exhibit a significant effect. Organizational resilience has a positive and significant impact on sustainable healthcare. Moreover, leadership agility significantly moderates the resilience–sustainability relationship, strengthening the translation of resilience capabilities into long-term sustainable healthcare outcomes. This study contributes to the limited empirical evidence on crisis leadership and healthcare sustainability in developing-country contexts. It highlights the critical role of organizational resilience as a driver of sustainability and identifies leadership agility as a key enabler. The findings also call into question the universal assumption that ET directly strengthens organizational resilience, suggesting the need to consider contextual and cultural factors in leadership research.

Keywords: Crisis leadership, Organizational resilience, Sustainable healthcare, Leadership agility, Private hospitals.

JEL Classification: I, M, Q.

1. Introduction

With the ever-changing and rather unpredictable healthcare environment there is a growing trend where organizations experience crises that challenge the stability of how they operate and their sustainability in the long run. The Iraqi private hospitals are faced with diverse issues that include political instability, economic uncertainty, accelerated technological changes, and even public health emergencies (Al-Kilidar et al., 2024). As such, this area has left the system immensely susceptible to shock (Organization, 2024). Iraq has other weaknesses in terms of private hospitals; in fact, they mostly work in isolation without clear frameworks of crisis management, flexible leadership, and robust systems of operations to deliver sustainable health (SH) in times of interruption. Nevertheless, current leadership activities in Iraqi privately-owned hospitals are inclined towards the short-term resolution of problems, instead of creating the resilience abilities to ensure long-term sustainability of the hospital practices (Al-Salem & Abdulrahman, 2023). These dynamics require leadership strategies that would not only maintain reactions to the current threats, but also promote the resilience of healthcare infrastructures toward maintaining long-term sustainability (Yağmur & Myrvang, 2023). Organizational resilience (OR) is a new important construct that allows healthcare institutions to meet the challenges of anticipation, adaptation, and recovery of crises without the loss of the necessary functions (Linnenluecke, 2017). Adaptive, capacity, resourcefulness are properties of resilience which enables hospitals to absorb shocks and enable them maintain the provision of quality rest during turbulent periods. Nonetheless, resilience alone is not sufficient to ensure SH. The broader goals of economic viability, social responsibility, and environmental stewardship, which define SH (Organization, 2024), require healthcare organizations to integrate resilience capabilities with sustainable development priorities.

In this context, crisis leadership plays a pivotal role. Effective leaders in times of crisis exhibit decisiveness, transparent and timely communication, and empathy towards their teams and patients (Martins & Erhard, 2025). These leadership attributes enable organizations to navigate crises proactively, ensuring continuity of care while protecting the well-being of employees and stakeholders. Nevertheless, the OR to SH outcome pathway is not always direct. Healthcare institutions do not always manage to translate their resilience into long-term sustainability because of inflexible leadership that is not agile and does not have foresight (Mandal, 2020). To overcome this gap, leadership agility (LA) is found in this study as a moderating factor. LA as a characterized concept that is defined by situational adaptability, learning orientation, and collaborative engagement enables leaders to adaptively vary their action plans, learn constantly during crises and use a multiplicity of stakeholders in the task of problem solving (Meyer, 2016). Hospitals will be able to develop the agile leadership mindset to better convert their resilience into SH outcomes in economic, social, and environmental aspects. Although the existing literature on OR and leadership in crisis adds value in management, there is a paucity of studies to empirically assess how they interact to facilitate SH, especially in the non-governmental healthcare organization in conflict-affected states such as Iraq. This study aims to fill this gap by exploring the question of how crisis leadership promotes OR and how LA augments the connection between resilience and SH outcomes.

2. Literature Review and Hypotheses Development

During a crisis, health institutions should be able to adapt their leadership approaches to safeguard operations and maintain essential services in as little time as possible. It has been readily established that leadership behaviors involving decisiveness (DE), communication (CO), and empathy (ET) are important in the development of organizational resilience (OR), especially under a complicated

situation like the healthcare systems in a fragile economy (Martins & Erhard, 2025; Rott et al., 2025). Resilience allows companies to predict the disruptive event, find constructive ways to address the unexpected difficulty and restore the functioning state whilst addressing the long-term visions such as sustainable healthcare (SH) delivery (Akpinar & Özer-Çaylan, 2023). The source of motivation of these resilience abilities is crisis leadership because it encourages quick decision-making, promotes allocation of resources, and promotes workers during such turbulent times (Bundy et al., 2017). In this literature review, a connection between the important dimensions of crisis leadership DE, CO, and ET and OR is verified. It also seeks to explore the moderating role of leadership agility (LA) in determining the relationship between resilience and SH, which has not been fully investigated in healthcare systems experiencing chronic instability, which is the case in Iraq and its dispute over the resilience of its private hospitals.

2.1 **Decisiveness and Organizational Resilience**

DE is largely considered as one of the key leadership competencies in times of organizational crisis. It is the ability of a leader to make decisive, timely decisions even in an uncertain environment, thus making the organization capable of responding effectively to the evolving threats (Martins & Erhard, 2025; Saadi et al., 2023). Incomplete information, shortened time frames, and the significance of the stakes of sub-optimal decisions make indecision sometimes more detrimental than actions that lack perfection in the context of crises situations (Rott et al., 2025). Now, in healthcare organizations, particularly in the case of emergencies, including pandemics or armed conflicts, decisive leadership enables rapid response in resourcing, staffing, and protocols of treating patients (Bundy et al., 2017).

Empirical investigations have associated DE with contributing to the improvement of OR, which is the capacity to adjust, recover and sustain core processes amid crises (Akpinar & Özer-Çaylan, 2023). Decisive leaders that command decisions can mobilize contingency procedures, reallocating essential resources, and enable teams to adjust the processes easily (Sarkar et al., 2023). DE therefore has strengthened adaptive, capacity, and resourcefulness, as the most crucial aspects of resilience.

Particularly in fragile contexts like Iraq, where private healthcare organizations frequently face political unrest, economic volatility, and infrastructure deficiencies, DE becomes indispensable. Without clear leadership direction, these institutions risk fragmented and inconsistent responses that weaken resilience (Al-Salem & Abdulrahman, 2023). Despite strong theoretical support, empirical research explicitly examining the link between DE and resilience in healthcare, particularly in developing economies, remains limited. Based on this reasoning, the following hypothesis is proposed:

H1: Decisiveness positively influences organizational resilience.

2.2 **Communication and Organizational Resilience**

Effective CO is a cornerstone of leadership during crises, enabling organizations to maintain coordination, clarity, and stakeholder trust amid uncertainty (Rott et al., 2025). In healthcare settings, where rapid changes in procedures, safety protocols, and resource availability are common during crises, clear and timely CO becomes essential to sustaining operations and safeguarding employee morale (Martins & Erhard, 2025; Saadi & Razak, 2019). Crisis leadership CO is not merely transactional but also relational, as it helps reduce uncertainty, align teams, and foster a shared sense of purpose (Bundy et al., 2017). OR, particularly in healthcare, depends significantly on an organization's ability to distribute critical information efficiently during disruptions (Akpinar & Özer-Çaylan, 2023). CO enhances adaptive capacity by enabling staff at all levels to understand the evolving crisis context and adjust their roles and actions accordingly (Sarkar et al., 2023).

Resourcefulness, another key dimension of resilience, is facilitated when leaders communicate transparently about constraints and encourage frontline teams to develop creative solutions.
Empirical research emphasizes that in times of crisis, healthcare workers' trust in leadership CO directly influences their commitment to organizational recovery efforts (Martins & Erhard, 2025). Transparent and empathetic CO mitigates fear, reduces misinformation, and enables cohesive action, all of which strengthen resilience. In the Iraqi private healthcare sector, where crises are compounded by political instability and fragile infrastructure, leaders' ability to communicate effectively with both internal teams and external stakeholders is vital. Poor CO in such environments often leads to fragmented crisis responses, operational paralysis, and weakened resilience (Al-Salem & Abdulrahman, 2023). Despite strong theoretical links, empirical studies examining how leadership CO contributes specifically to OR in fragile healthcare contexts remain limited. To address this gap, the following hypothesis is proposed:
H2: Communication positively influences organizational resilience.

2.3 **Empathy and Organizational Resilience**

ET is a critical yet often undervalued component of crisis leadership. In organizational contexts, ET refers to leaders' ability to understand and respond to the emotional and psychological needs of their employees during periods of disruption (Martins & Erhard, 2025). Whereas, the DE and CO focus on operational transparency and coordination, ET focus on the people aspect of crisis management, including the trust, psychological safety, and emotional well-being (Rott et al., 2025). Due to the levels of stress and emotional exhaustion that employees in healthcare organizations experience in the face of crisis situations, the development of empathetic leadership in such organizations will be instrumental in terms of maintaining resilience (Akpinar & Özer-Çaylan, 2023). Leaders who are empathetic establish a climate of feeling appreciated and being supported by the employees to enable them to withstand the stressors and be active to address the problems adaptively. Employees are willing to extend beyond their job descriptions, share knowledge, and collaborate, which are the key behaviors that are reinforced by this emotional support because they are vital to OR (Sarkar et al., 2023). The research also indicates that ET enhances resilience by facilitating social cohesion as well as collective efficacy (Martins & Erhard, 2025). Employees are likely to behave more resilience-positive when they regard their leaders as compassionate, behavioral traits that would include flexibility, cooperative behavior and active involvement with crisis issues (Jan & Maulida, 2022).
empathetic leadership is important in such weak health systems as Iraq because crises often stress workers and put them under professional and personal risks, which is the main cause of low staff motivation and engagement (Al-Salem & Abdulrahman, 2023). Without empathetic leadership, healthcare workers may experience disengagement, burnout, and reduced adaptive capacity, undermining the organization's resilience during and after crises. Despite its recognized importance, ET's direct contribution to OR, particularly in developing healthcare contexts, has not been extensively examined in empirical studies. Therefore, this study proposes the following hypothesis:
H3: Empathy positively influences organizational resilience.

2.4 **Organizational Resilience and Sustainable Healthcare**

OR extends beyond crisis survival to enable organizations pursue long-term sustainability. In the healthcare sector, resilience equips organizations to continuously deliver essential services while advancing economic viability, environmental responsibility, and social well-being dimensions that define SH (Sarkar et al., 2023). Resilient healthcare organizations do not merely return to normal after a crisis; instead, they learn from adversity, adapt their systems, and improve their capacity to

sustain operations under ongoing uncertainty (Akpinar & Özer-Çaylan, 2023). SH involves a holistic approach to managing healthcare systems in a way that balances economic performance, minimizes environmental impact, and contributes to social health equity (Jan & Maulida, 2022). OR supports these sustainability dimensions in several ways. Economically, resilient organizations maintain service continuity, protect financial health, and minimize downtime during crises. Environmentally, resilience fosters resource optimization and reduces waste, especially critical during emergencies when supplies are limited (Sarkar et al., 2023). Socially, resilient organizations safeguard employee well-being and ensure uninterrupted patient care, thereby preserving public trust and societal welfare (Martins & Erhard, 2025).

Research suggests that resilient organizations are in a better position to incorporate sustainability practices in their crisis responses and long-term crisis plans (Akpinar & Özer-Çaylan, 2023). For example, healthcare institutions with adaptive, capacity and resourcefulness can pivot operations toward more sustainable models, such as telemedicine adoption during crises to reduce environmental and operational burdens (Sarkar et al., 2023). In fragile healthcare environments like Iraq's, resilience is a prerequisite for sustainability. Without the ability to withstand disruptions, healthcare organizations struggle to achieve SH outcomes. Given the region's persistent instability, economic volatility, and social challenges, OR serves as a crucial mechanism for ensuring that healthcare delivery remains economically viable, environmentally responsible, and socially equitable. Despite the conceptual alignment between resilience and sustainability, empirical investigations linking the two in fragile healthcare sectors are limited. This study addresses this gap by proposing the following hypothesis:

H4: Organizational resilience positively influences sustainable healthcare.

2.5 Leadership Agility, Organizational Resilience, and Sustainable Healthcare

While OR is a critical driver of SH, the extent to which resilience translates into sustainable outcomes can vary depending on leadership dynamics. LA, defined as the leader's ability to adapt, learn, and engage collaboratively in response to changing situations, plays a pivotal role in enhancing the positive effects of resilience on sustainability (Meyer, 2016). Agile leaders are not only capable of managing immediate crises but also of strategically aligning post-crisis adaptations with long-term sustainability goals (Jan & Maulida, 2022). LA encompasses three key dimensions: situational adaptability, learning orientation, and collaborative engagement. Situational adaptability plays a key role in helping leaders make the necessary adjustments to strategies as situations and demands change to maintain a healthy position regarding resilience interventions and within the context of sustainability goals (Meyer, 2016). Moreover, when deployment of resilience practices occurs in the context of a learning orientation, the culture of reflection and continually improving obstacles is transformed to encourage a proactive approach to a sustainable organizational functioning rather than a reactive one (Akpinar & Özer-Çaylan, 2023). As for working collaborative engagement, it helps leaders to engage various stakeholders in building resilience thus stretching the organizational impact of sustainability beyond the organizational premises (Sarkar et al., 2023).

However, the LA can aid in transferring capabilities in resilience in the healthcare setting (adaptive resource management and organization learning) to SH practice that decreases economic waste, protects resources in the environment, and preserves fairness in healthcare access (Sarkar et al., 2023). In the context of the weak healthcare systems such as those found in Iraq, where shortages in resources are common and disturbances are often disruptive, agile leadership is a vital element in the maintenance of health services that should not only resilient but also economically feasible, environmentally resistant and socially inclusive (Saadi, 2023). Although there is conceptual support and references to the inextricable connection between LA, resilience, and sustainability, the empirical evidence describing this moderating relationship is limited, especially in developing and

crisis-prone healthcare industries (Rott et al., 2025). Therefore, the current study can be used to bridge this gap by proposing that LA strengthens the positive effect of OR on SH. Accordingly, the following hypothesis is proposed:

H5: The relationship between organizational resilience and sustainable healthcare is positively moderated by the leadership agility.

3. Theories of The Study

The current research builds on two theoretical perspectives that are complement to each other, which are the Adaptive Leadership Theory and Resource-Based View (RBV) Theory. The theories give a sound basis to the comprehension of the role of crisis leadership behaviors in allowing organizations to be more resilient and how the resiliency can, in addition, lead to the sustainable healthcare outcomes. They also give the moderating effects of leadership agility (LA) in enhancing the resilience-sustainability connection, especially in the weak healthcare setting such as the Iraqi sector of private hospitals.

3.1 **Adaptive Leadership Theory**

Adaptive Leadership Theory is a theory of leadership which was first introduced by Heifetz (1994) and refers to leadership as a form of practice of people mobilisation in an attempt to address difficult challenges and succeed in a world of changes. According to this theory, crisis situations cannot be resolved with managerial action taken every day, and one needs as a leader to show decisiveness, communication, and empathy levels that allow organizations to adapt to highly complex and rapidly changing threats (Heifetz, 1994; Meyer, 2016). In healthcare emergencies, leaders deal with uncertain challenges that complicate business as usual and strains staff and budget. With the power of adaptive leadership, they can make quick judgments, be transparent to important parties, and sympathize with the desires of the healthcare professionals on an emotional level (Martins & Erhard, 2025). Such behaviors of the leaders contribute to organizational resiliency: promoting flexibility, ingenuity, and the ability to rebound through disruption (Akpinar & Özer-Çaylan, 2023). The conceptualization of LA in this study as situational flexibility, learning orientation and collaborative participation also translates such tenets of adaptive leadership. Inflexible leaders do not succeed as efficiently to convert resilience potential into sustainable healthcare results by changing tactics, continuous learning, and involving stakeholders in joint problem-solving (Meyer, 2016). Thus, Adaptive Leadership Theory explains both the direct role of crisis leadership behaviors in promoting resilience and the moderating effect of LA in enhancing sustainability.

3.2 **Resource-Based View (RBV) Theory**

The Resource-Based View (RBV), introduced by Barney (1991),posits that an organization's sustainable advantage stems from its valuable, rare, inimitable, and non-substitutable (VRIN) resources. In the healthcare context, leadership competencies and organizational resilience are intangible strategic resources that enable hospitals to sustain performance during crises (Sarkar et al., 2023). Organizational resilience defined by adaptive capacity, resourcefulness, and the ability to withstand disruption is a critical internal capability that helps healthcare institutions maintain economic viability, minimize environmental impacts, and fulfill social responsibilities during and after crises (Akpinar & Özer-Çaylan, 2023). RBV Theory supports the idea that resilient organizations are better positioned to pursue sustainable healthcare (SH), turning resilience from a survival mechanism into a strategic advantage. The crisis leadership behaviors place the focus on building these resilience capacities as major facilitators. Decisive, communicative, and empathetic leaders develop routines, cultures, and capacities of the organization that amplify organizational resilience to withstand the

adversity (Sarkar et al., 2023). Thus, the use of RBV Theory will shed light on how the leadership and internal resilience capabilities will be used as vital assets governing SH results in weak settings.

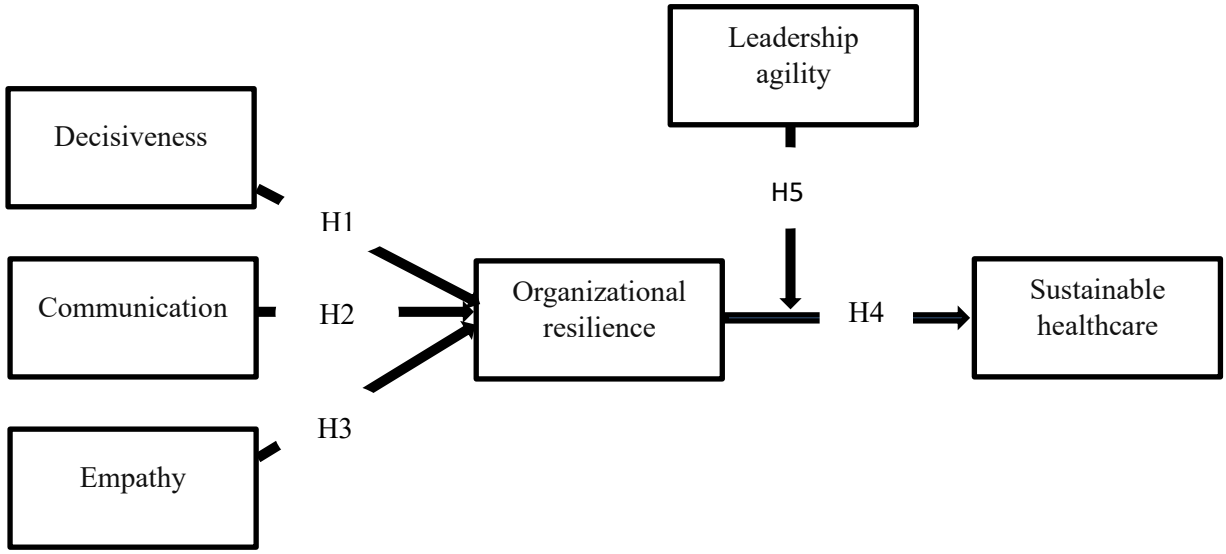
3.3 **Theoretical Integration**

Adaptive Leadership Theory and the Resource-Based View in combination explain the relations within the conceptual framework of this study in great depth. Adaptive Leadership Theory offers an explanation of how leaders navigate their organizations through crisis and RBV Theory offers an explanation as to why resilience is achievable through inclusion of leadership capabilities with resultant sustainability. The theoretical combination represents a solid premise in understanding the impacts of crisis leadership on the sustainability and resilience of the Iraqi private healthcare industry.

4. Conceptual Framework

The theoretical framework of this research is a combination of several variables of crisis leadership, organizational resilience (OR), leadership agility (LA) and sustainable healthcare (SH) based on the theories of Adaptive Leadership and the Resource-Based View (RBV). The framework shows the effect of the leadership behaviors on the OR and subsequently enhancing SH outcomes with LA serving as the intermediary to this association. As portrayed in Figure 1, crisis leadership involving decisiveness, communications, and empathy is assumed to have a direct positive effect on OR that involves adaptive, capacity, and resourcefulness.

OR, as a basic organizational strength, is estimated to have a favorable effect on SH, which is conceptualized at the different dimensions, regarding its economic, environmental, and social. In addition to that, the framework assumes that LA in the form of situational adaptability, learning orientation, and collaborative engagement positively moderates the connection between OR and SH. In other words, the high the LA, the greater the positive impact of OR on SH will hold. Such a framework will help reflect this dynamic and interactive diversity of leadership and resilience in healthcare environments, especially fragile environments such as the private healthcare sector in Iraq, whose leadership capacity is critical to addressing crises and maintaining health systems functionality.



Source: Author's Development

Figure 1. Research Framework

5. Data and Methodology

This study adopts a quantitative, cross-sectional research design to explore the importance of crisis leadership in facilitating the organizational resilience and the following impacts towards sustainable healthcare in the Iraqi privately owned hospitals. A structured questionnaire was employed in the primary phase of data collection, targeting hospital leaders and managers across four major Iraqi cities. The cross-sectional research design was deemed suitable since it helps to examine or measure the association between variables in the study at one specific moment in time, and it is effective to collect data because it represents a large population in a reliable and valid manner (Weyant, 2022).

5.1 **Sampling Region**

The targeted population in the research was to include the private hospitals in the Baghdad, Erbil, Basra and Najaf provinces, as the main healthcare centers within Iraq. The choice of the given cities was justified by their strong role related to the supply of specialized healthcare services and the concentration of advanced forms of private healthcare organizations especially in Baghdad and Erbil (World Bank, 2023). The purposive selection of the sampling of hospitals taken was done based on size, diversity of services offered and existing crisis management procedures. Particularly, the research was aimed at Al-Alamy Hospital, Dowaly Private Hospital, and Royal Private Hospital in Baghdad; PAR Hospital, CMC Private Hospital, and Paky Hospital in Erbil; Al-Mowasat Private Hospital and Dar Al-Shifa'a Hospital in Basra; and Amal Alhayat Hospital in Najaf. In these hospitals, the respondents were divided into three groups of management level to provide an in-depth discourse of crisis leadership practices: Top-Level Leadership (Hospital Directors and Chief Executive Officers), Mid-Level Managers (Nursing Directors, HR Managers, Operations Managers and Finance Managers), and Unit-Level Supervisors (ICU/ER Coordinators, Infection Control Officers and Patient Services Managers). Such stratified process enabled the capture of a variety of leadership views within organizational structure (Saunders et al., 2019).

5.2 **Sample Size Determination**

Krejcie & Morgan (1970) formula was used to determine the sample size, which has been applied to gain an adequate statistical power in organizational and healthcare research or studies. The ideal minimum sample size should be 132 respondents based on an estimated population of about 200 potential leaders and managers in nine of the selected hospitals and confidence level of 95 percent with a margin of error of 5 percent. Before embarking on the primary data, a pilot study pre-testing a questionnaire was carried out on 30 managers (not included in the main sample) to validate its clarity, continuity, reliability, and its applicability to the research setting. Feedback from the pilot respondents led to minor revisions in wording to enhance comprehensibility. Following this, 190 questionnaires were proportionally distributed across the hospitals according to the size of their managerial staff, using a stratified sampling approach to ensure representativeness. After data screening, 158 fully completed and valid responses were retained for analysis, exceeding the minimum requirement and providing sufficient statistical power for the hypothesized model. Non-response bias was assessed by comparing early and late respondents on key study variables using independent t-tests, with no significant differences detected ($p > 0.05$) (Armstrong & Overton, 1977).

5.3 **Measurement Tool**

Data were collected using a structured, self-administered questionnaire designed based on validated scales adapted from previous empirical studies. The instrument consisted of five sections corresponding to the study variables: Crisis Leadership measured through Decisiveness,

Communication, and Empathy, adapted from E. James & Wooten (2010) and refined by DuBrin (2013). Each dimension included five items rated on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Organizational Resilience measured across Adaptive Capacity, Resourcefulness, and Learning Capacity, using eleven items adapted from Mallak (1998) and Somers (2009). Sustainable Healthcare assessed in terms of Economic, Social, and Environmental Sustainability, drawing on twelve items from the Global Reporting Initiative (GRI, 2020; Pereira et al., 2022). Leadership Agility measured by nine items through Situational Adaptability, Learning Orientation, and Collaborative Engagement, based on Joiner & Josephs (2006). The questionnaire was pretested with 30 healthcare managers to assess clarity and content validity. Reliability was evaluated using Cronbach's alpha, with all constructs exceeding the recommended threshold of 0.70 (Thorndike, 1995). Data were analyzed using SPSS (Version 28), employing descriptive statistics, correlation analysis, hierarchical regression, and the PROCESS macro to examine both direct effects and moderation.

6. Results and Discussion

6.1 Respondent Demographics

A total of 158 valid responses were obtained from leaders and managers working in private hospitals across Baghdad, Erbil, Basra, and Najaf. Of the respondents, 63.3% were male and 36.7% female. The majority of participants were aged between 36 and 45 years (46.2%), followed by those aged 26 to 35 years (31.6%), with the remaining above 46 years. In terms of professional roles, 22.8% held top-level positions, 46.8% were mid-level managers, and 30.4% were unit-level supervisors. Regarding years of experience, 39.2% had over 10 years of professional experience, while 34.8% had between 6 and 10 years, and 26% had 1 to 5 years. This distribution reflects a well-balanced sample in terms of seniority and expertise, which strengthens the reliability of the data collected for the analysis.

Table 1. Respondent Demographics

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	100	63.3
Gender	Female	58	36.7
Age	26–35	50	31.6
Age	36–45	73	46.2
Age	46 and above	35	22.2
Position	Top-Level	36	22.8
Position	Mid-Level	74	46.8
Position	Unit-Level	48	30.4
Experience	1–5 years	41	26.0
Experience	6–10 years	55	34.8
Experience	More than 10 years	62	39.2

Source: Prepared by the Researcher Based on the Analysis Results.

6.2 Reliability and validity of the measurement model

The reliability and convergent validity of the measurement model were assessed using Cronbach's Alpha, Composite Reliability (CR), and Average Variance Extracted (AVE), in line with the recommendations of Hair (2021) as shown in Table 3. The independent variable, Crisis Leadership, comprises three core dimensions: Decisiveness (DE), Communication (CO), and Empathy (ET). Each dimension exhibited satisfactory internal consistency, with Cronbach's Alpha values of 0.81, 0.84, and 0.76 respectively. Corresponding CR values ranged from 0.83 to 0.88, and all AVE scores exceeded the minimum threshold of 0.50, affirming convergent validity. The overall construct also demonstrated strong psychometric properties (α = 0.87, CR = 0.89, AVE = 0.58), indicating a

consistent and valid representation of the underlying concept. For the remaining constructs, including Organizational Resilience (α = 0.91, CR = 0.93, AVE = 0.62), Sustainable Healthcare (α = 0.88, CR = 0.90, AVE = 0.60), and Leadership Agility (α = 0.85, CR = 0.87, AVE = 0.57), the reliability indicators surpassed acceptable standards, and AVE values confirmed the constructs' convergent validity. Overall, these results provide robust evidence that the measurement model is both reliable and valid, supporting its suitability for further structural equation modeling.

Table 2.Reliability and Validity of the Measurement Model

Construct	Cronbach's Alpha	CR	AVE
Crisis Leadership	0.87	0.89	0.58
Decisiveness	0.81	0.85	0.58
Communication	0.84	0.88	0.60
Empathy	0.76	0.83	0.55
Organizational Resilience	0.91	0.93	0.62
Sustainable Healthcare	0.88	0.90	0.60
Leadership Agility	0.85	0.87	0.57

Source: (Prepared by the Researcher Based on the Analysis Results)

6.3 **Descriptive Statistics**

Descriptive statistics were calculated to illustrate the central tendencies and dispersion of the study variables. As shown in Table 3, the mean scores ranged from 3.88 for Leadership Agility (LA) to 4.12 for Organizational Resilience (OR), reflecting generally positive respondent perceptions. Correlation coefficients ranged from 0.48 to 0.79 ($p < .001$), indicating moderate to strong positive associations and supporting discriminant validity (Pallant, 2020).

Table 3. Descriptive Statistics and Correlations

Variable		M	SD	1	2	3	4	5	6	7
Decisiveness	(1)	4.01	0.67	–						
Communication	(2)	3.96	0.70	0.52**	–					
Empathy	(3)	4.09	0.63	0.49**	0.55**	–				
Crisis Leadership	(4)	4.05	0.68	0.76**	0.73**	0.79**	–			
Organizational Resilience (5)		4.12	0.64	0.60**	0.58**	0.62**	0.63**	–		
Sustainable Healthcare (6)		3.94	0.66	0.54**	0.50**	0.56**	0.58**	0.67**	–	
Leadership Agility	(7)	3.88	0.69	0.48**	0.51**	0.50**	0.53**	0.55**	0.59**	–

Source: Prepared by the Researcher Based on the Analysis Results.

6.4 **Multicollinearity**

To assess potential multicollinearity issues among the predictor variables, both Variance Inflation Factor (VIF) and Tolerance values were examined. Multicollinearity can inflate the standard errors of regression coefficients, reducing the reliability of statistical inferences. According to Hair (2021), VIF values below 5 and tolerance values above 0.20 are considered acceptable indicators that multicollinearity is not a concern. As presented in Table 4, all VIF values ranged between 1.22 and 2.45, well below the conservative threshold of 5. Tolerance values ranged from 0.41 to 0.82, all exceeding the minimum acceptable value of 0.20. These findings confirm that multicollinearity is not a threat to the integrity of the regression estimates in the current model. Therefore, the independent

and moderating variables can be included in the structural model without the risk of distorted statistical outcomes due to intercorrelations.

Table 3. Multicollinearity Diagnostics (VIF and Tolerance)

Variable	VIF	Tolerance
Decisiveness	1.55	0.65
Communication	1.68	0.60
Empathy	1.61	0.62
Crisis Leadership	2.45	0.41
Organizational Resilience	2.09	0.48
Sustainable Healthcare	1.47	0.68
Leadership Agility	1.22	0.82

Source: (Prepared by the Researcher Based on the Analysis Results)

6.5 **Hypotheses Testing**

To test the direct relationships among the variables, hierarchical multiple regression analyses were conducted. The regression coefficients (β), t-values, p-values, R^2, and F-change statistics are reported in Table 5. The findings offer empirical support for most of the hypothesized relationships. In Model 1, Crisis Leadership was entered as a predictor of Organizational Resilience. The results showed a significant positive effect of DE ($\beta = 0.29$, $t = 4.18$, $p < 0.001$) and CO ($\beta = 0.34$, $t = 5.03$, $p < 0.001$), supporting H1 and H2, respectively. However, ET did not exhibit a significant effect ($\beta = 0.09$, $t = 1.26$, $p = 0.210$), thus H3 was not supported. The overall model explained 48.6% of the variance in Organizational Resilience ($R^2 = 0.486$, $F (3, 154) = 48.57$, $p < 0.001$). In Model 2, Organizational Resilience was entered as a predictor of Sustainable Healthcare. The results showed a strong and statistically significant relationship ($\beta = 0.65$, $t = 9.01$, $p < 0.001$), confirming H4. The model accounted for 42.3% of the variance in Sustainable Healthcare ($R^2 = 0.423$, $F (1, 156) = 81.21$, $p < 0.001$). These findings affirm the foundational role of crisis leadership, particularly DE and CO, in building resilience, which in turn enhances sustainable healthcare performance in private hospital settings.

Table 5. Hypotheses Testing Results

Model	Hypothesis	Path	β	t	p	R^2	F / FΔ	Supported
Model (1)	H1	Decisiveness → Organizational Resilience	0.29	4.18	<0.001	0.486	F (3, 154) = 48.57***	Yes
	H2	Communication → Organizational Resilience	0.34	5.03	<0.001			Yes
	H3	Empathy → Organizational Resilience	0.09	1.26	0.210			No
Model (2)	H4	Organizational Resilience → Sustainable Healthcare	0.65	9.01	<0.001	0.423	F (1, 156) = 81.21***	Yes

*Note: R^2 = variance explained in the dependent variable (Organizational Resilience in Model 1, Sustainable Healthcare in Model 2). ***p < 0.001*

Source: (Prepared by the Researcher Based on the Analysis Results)

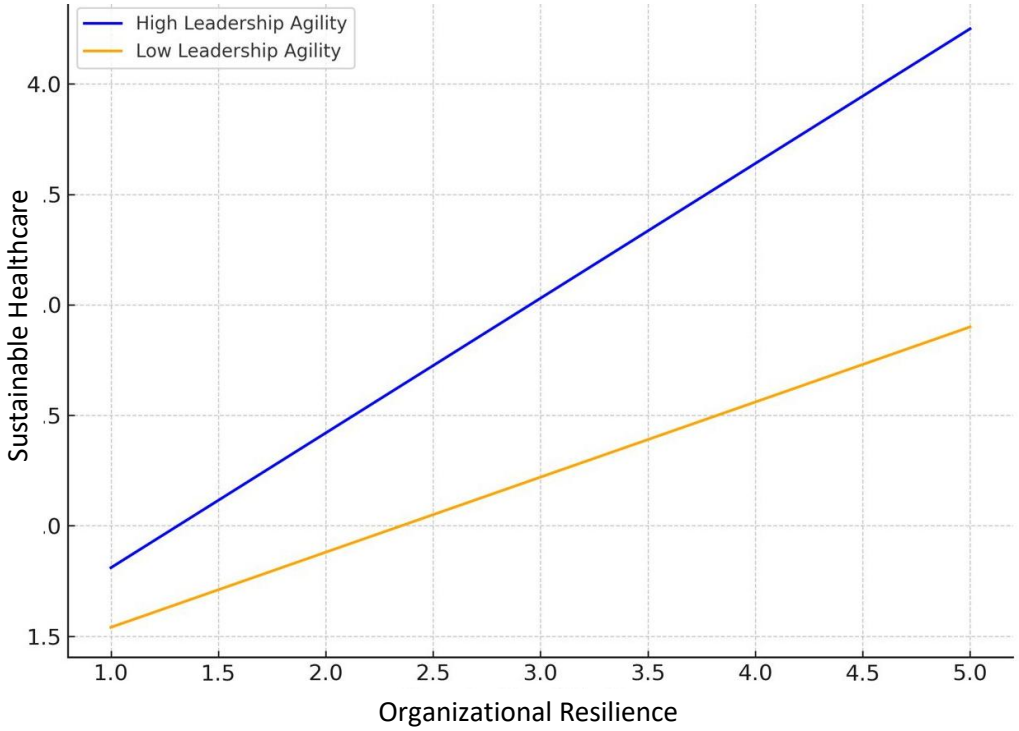
6.6 **Moderation Analysis**

To examine the moderating role of Leadership Agility (LA) on the relationship between Organizational Resilience (OR) and Sustainable Healthcare (SH), the PROCESS Macro developed by Bolin (2014) was utilized. This approach enables testing the conditional effect of an independent variable on a dependent variable at different levels of a moderator by incorporating interaction terms. As shown in Table 6, the interaction term between OR and LA (OR × LA) was found to be positive and statistically significant (β = 0.21, SE = 0.05, t = 3.02, p = 0.003). This result supports Hypothesis H5, which proposed that leadership agility strengthens the positive effect of organizational resilience on sustainable healthcare outcomes. The overall model explained 52.6% of the variance in sustainable healthcare (R^2 = 0.526), indicating a strong explanatory power. Furthermore, the inclusion of the interaction term significantly improved the model fit, as evidenced by a ΔF (1,154) = 9.12, p < 0.01, confirming that leadership agility provides a meaningful contribution beyond the main effects. To further illustrate the moderation effect, a simple slopes analysis was conducted. As depicted in Figure 1, under conditions of high leadership agility, the relationship between OR and SH was significantly stronger (β = 0.61, p < 0.001), compared to conditions of low leadership agility, where the relationship remained positive but weaker (β = 0.34, p < 0.01). This suggests that hospitals exhibiting higher agility in their leadership teams are better positioned to translate resilience capabilities into sustainable healthcare practices, especially during crises. These findings are in line with the principles of Adaptive Leadership Theory (Heifetz et al., 2009), which emphasizes flexible, context-sensitive responses during turbulent periods, and with the Resource-Based View (Barney, 1991) that positions leadership agility as a strategic intangible asset.

Table 6. Moderation Analysis using PROCESS Macro

Model	Predictor	β	SE	t-value	p-value	R^2	ΔF
Model (3)	Organizational Resilience (OR)	0.48	0.06	7.94	<0.001	0.526	—
	Leadership Agility (LA)	0.26	0.07	3.71	<0.001		
	OR × LA (Interaction)	0.21	0.05	3.02	0.003		
	Model Summary					0.526	ΔF(1,154) = 9.12**

Source: Prepared by the Researcher Based on the Analysis Results.



Source: Author's Development

Figure 2. Moderating Effect of Leadership Agility

6.7 **Discussion**

The findings of this study provide meaningful insights into the role of crisis leadership in fostering organizational resilience, which in turn supports sustainable healthcare delivery. Drawing from Adaptive Leadership Theory, the results confirm that leadership behaviors such as DE and effective CO are pivotal in enabling organizations to navigate crises successfully. These results are particularly relevant in the context of Iraq's private healthcare sector, which operates under continual pressure from infrastructural, economic, and social disruptions. The support for H1 and H2 suggests that when leaders act decisively and communicate transparently during uncertain times, organizations are better positioned to adapt, recover, and maintain continuity. These dimensions appear to activate the core tenets of adaptive capacity and resourcefulness two critical components of organizational resilience. These findings echo prior literature that emphasizes the stabilizing and mobilizing roles of decisive leadership during turbulent conditions (Heifetz et al., 2009; E. H. James et al., 2011). Interestingly, H3 was not supported, as ET did not significantly predict organizational resilience. While ET remains a critical component of transformational and ethical leadership, its influence may be less pronounced during immediate crisis response, where rapid decision-making and clear communication take precedence over relational attributes. This detail resonates with the sprouting literature specific to crises, which gives the indication of affective traits, although they are vital to the long-term accrual of trust, would little to no effect during the acute stages of crisis. However, this pattern is consistent with findings from other countries (Bundy et al., 2017). The robust support of H4 proves that organizational resilience is one of the key factors leading to sustainable healthcare outcomes. It is more likely that by the economic, environmental, and social dimensions resilient systems will be able to better sustain the quality of service and resource utilization, so the theory of Resource-Based View (RBV) is supported. Reframing resilience as an organizational competence, the results emphasize the need to develop institutional capabilities such that they cover survival in the short term and sustainability over the long-term (Barney, 1991; Linnenluecke, 2017). The analysis of

moderation goes further in the framework. H5 was confirmed, meaning that leadership agility reinforces the connection between sustainability and resilience. The agile leaders who are able to adapt their personal styles, learn quickly, and embrace a collaborative approach, showed a stronger connection of resilience to sustainable results that appear in hospitals. The finding is consistent with studies that highlighted the dynamism in leadership when dealing with a complex environment (DeRue, 2011; Joiner & Josephs, 2006), and provides a strong argument as to why healthcare should invest in agile leadership development. Viewed collectively, these findings can be extracted to support a theoretical combination of both adaptive leadership and RBV in that, the combined process of leadership behavior and internal capabilities determines sustainable performance. Such insights would particularly be useful in informing both leadership practice and policy intervention in a healthcare setting in Iraq, where available resources are scarce, and volatility is rampant.

7. Conclusions

This study discussed the implication of crisis leadership on organizational resilience and the overdrive of resilience on sustainable healthcare in the private hospitals of Iraq, where agility of leadership serves as a moderating variable. The findings revealed that decisiveness and communication (CO) positively influenced organizational resilience, indicating that timely decision-making and open CO in a crisis-context is important to promote organizational resilience. Conversely, empathy (ET) did not show a significant effect, suggesting that while ET enhances interpersonal relationships, it may not directly contribute to operational and structural resilience under high-pressure conditions. Organizational resilience significantly contributed to sustainable healthcare, reinforcing its importance for ensuring economic stability, social responsibility, and environmental stewardship in healthcare institutions. Moreover, leadership agility significantly strengthened the resilience–sustainability relationship, indicating that leaders who demonstrate situational adaptability, learning orientation, and collaborative engagement enhance the ability of resilient hospitals characterized by adaptive, capacity and resourcefulness to achieve long-term sustainable healthcare outcomes.

However, the findings have important implications for both practice and theory. For practitioners, hospital administrators should focus on strengthening decisive and transparent leadership practices and institutionalizing structured resilience-building mechanisms, such as crisis-specific CO protocols and continuous learning systems. Leadership development programs should prioritize leadership agility training, enabling managers to adapt rapidly and collaborate effectively under crisis conditions. For theory, this study contributes to the growing body of crisis leadership and healthcare sustainability literature by empirically validating the resilience–sustainability link in a developing-country context. Moreover, the non-significant effect of ET questions the universal assumption that all positive leadership traits enhance resilience, suggesting that contextual and cultural factors may moderate its influence.

7.1 Limitations and Future Research Studies

This study has some limitations. The cross-sectional design restricts causal interpretations, and the focus on private hospitals in Iraq limits the generalizability of the findings to other contexts or public healthcare institutions. Furthermore, reliance on self-reported data may introduce response bias despite anonymity assurances. Future studies should consider longitudinal or mixed-method approaches to examine how leadership and resilience evolve throughout different crisis phases. Comparative research across public and private healthcare sectors or different cultural settings would

provide broader insights. Finally, qualitative investigations are recommended to explore the contextual factors influencing the limited role of ET in building resilience.

Conflict of Interest

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