

Analysis of the Alignment of Decision-Making Styles with Crisis Management Stages: An Applied Study on Iraqi Ministry of Planning

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Abstract - The purpose of this research is to analyze various decision-making styles utilized within the Iraqi Ministry of Planning, focusing on how these styles influence the management of crises. Specifically, the study investigates the stages of crisis management before, during, and after a crisis and evaluates how decision-making styles align with each stage. A descriptive research design was employed, and data were collected through a questionnaire administered to a sample of 48 managers at the National Center for Administrative Development and Information Technology, a department within the Ministry of Planning responsible for studying public policies and development planning. The results reveal that the planning style aligns with the pre-crisis phase, while the entrepreneurial style is less suitable during the crisis phase due to regulatory constraints that limit creativity and innovation. Furthermore, logical incrementalism is found to be appropriate for the post-crisis phase. These findings highlight the importance of adaptability in decision-making across different stages of crisis management. Beyond the immediate context, the study underscores the broader significance of tailoring decision-making approaches to institutional realities in developing countries.

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By demonstrating how specific styles can strengthen resilience and responsiveness, the research provides valuable insights for policymakers and public administrators seeking to enhance institutional capacity. Ultimately, the study contributes to the understanding of how decision-making styles can serve as a strategic tool for improving crisis preparedness, response, and recovery, thereby reinforcing the sustainability and effectiveness of public institutions.

Keywords - Decision-making, planning, entrepreneurial, incremental, crisis management.

1. Introduction

Crisis management is a vital area that continues to gain importance in light of the rapid changes and complex challenges facing institutions, whether governmental or private. In the context of Iraq, where the country suffers from recurring crises due to political, economic, and social conditions, it becomes essential to understand how to manage these crises effectively. Successful crisis management requires flexible and effective strategies that fit each stage of the crisis, namely: the pre-crisis phase, the crisis phase, and the post-crisis phase.

Decision-making styles are critical factors that influence the effectiveness of crisis management. Each stage of crisis management necessitates different decision-making styles, requiring leaders and planners to be aware of the appropriate tools and methods for each situation. In the pre-crisis phase, the focus is on preparation and proactive planning, where leaders must identify potential risks and assess their impacts. This requires the availability of accurate and reliable information, enhancing leaders' ability to make informed decisions.

In the crisis phase, the need for rapid decision-making becomes more urgent. Time pressure and limited information can hinder accurate decision-making, necessitating leaders to be capable of acting quickly and innovatively.

At this point, entrepreneurial or intuition-based styles become more relevant, as leaders must make decisions based on past experiences and quick assessments of the situation.

In the post-crisis phase, the focus shifts to recovery and evaluation. Leaders need to analyze mistakes and lessons learned from past experiences, which helps in enhancing future performance. In this phase, the logical incremental style is most suitable, as leaders can employ analytical methods to evaluate the effectiveness of their responses and identify strengths and weaknesses.

This research aims to analyze the alignment of decision-making styles with the stages of crisis management in the Iraqi Ministry of Planning, as this topic holds significant importance in improving the effectiveness of public administration in the country. This research explores how leaders in the field of study can enhance their crisis management strategies, contributing to improved institutional performance. The significance of conducting this study extends beyond merely understanding current styles; it aims to provide practical and actionable recommendations that contribute to enhancing the ability to respond to crises more effectively. By examining the factors that influence decision-making at each stage, researchers and policymakers in Iraq can develop more flexible and adaptive strategies to cope with changing circumstances, thereby improving the overall performance of the ministry and its ability to respond to future challenges. In summary, studying the alignment of decision-making styles with the stages of crisis management in the Iraqi Ministry of Planning is not just an academic matter; it is a practical necessity that represents an important step toward enhancing the ability to manage crises efficiently and effectively. This research will contribute to building a knowledge base that supports sustainable development of public policies and improves the performance of governmental institutions, positively reflecting on stability and development in Iraq.

Decision-making is central to the administrative process, crucial for achieving organizational goals and ensuring efficient operations [1], correlated to management functions [2], and function of managers [3]. Despite extensive study, no single definition exists. Typically, decision-making involves selecting an option from alternatives. It defines as problem assignment and resolution; or describes as a conscious choice among available options [4]. Literature emphasizes that decision making is searching for solutions that create stakeholder value [5]. Thus, it is a conscious process based on real assumptions, selecting a course of action to achieve a desired state [6]. The decision-making process consists of successive steps, with researchers identifying stages for strategic choices [7].

The entrepreneurial decision-making style extends beyond the creation of new organizations to encompass the effective management of existing ones. The core of business organizations is rooted in entrepreneurial actions that inherently involve risk [8]. This decision-making style is particularly vital for managers within entrepreneurial institutions and is characterized by several distinctive traits. First, there is a proactive approach to opportunity-seeking, where decision-making emphasizes the active pursuit of new opportunities rather than merely addressing problems. Entrepreneurship flourishes when capable individuals concentrate on potential opportunities rather than focusing on existing issues [8]. Second, in entrepreneurial organizations, power tends to be centralized in a single manager, who leads with personal strength and charisma. The direction of the organization is largely influenced by the entrepreneur's vision rather than a formal strategic framework. Additionally, bold decision-making is a hallmark of this style; entrepreneurial decisions often entail significant risks and leaps into uncertain conditions, which can lead to substantial gains. Finally, a strong focus on growth is prevalent in entrepreneurial organizations, driven by an intrinsic desire for achievement. This overarching goal shapes the mindset and actions of those involved, underscoring the importance of innovation and expansion within the entrepreneurial context.

The “muddling through” model, later known as “disjointed incrementalism,” was introduced by [9]. He describes adaptive policymakers as individuals who accept the current situation without clear goals, opting instead of making remedial decisions in small, manageable steps. In a complex world, these policymakers seek information to reduce uncertainty and often prioritize immediate problems over long-term strategies, negotiating with their environment as necessary. Given the influence of strong coalitions with competing interests, strategists aim to minimize conflict by addressing conflicting goals sequentially while overlooking inherent contradictions. A notable characteristic of this incremental style is the lack of clear goals, which reflects the division of power among complex coalitions. This dynamic leads to goals that are driven by compromise, as organizations tend to address matching objectives one at a time, often ignoring underlying conflicts and seeking satisfactory solutions rather than maximizing any single objective. Additionally, strategy-making tends to be reactive, responding to existing problems rather than proactively seeking new opportunities. Organizations operating in challenging environments focus on finding certainty and mitigating uncertainty, frequently lacking the time or clarity needed for proactive approaches.

Furthermore, decision-making is characterized by incremental steps, where decisions are made based on feedback. The fear of risk often inhibits bold choices, compelling strategists to concentrate on familiar alternatives that allow gradual progress through linked adjustments. Consequently, decisions may appear disjointed, lacking interconnection due to the diverse demands placed on decision-makers. This lack of interrelationship simplifies independent decision-making, reducing the cost and requiring minimal coordination among various stakeholders. A key characteristic of the planning style is its emphasis on making predictive decisions in advance. Planning is essential for achieving interconnected future states and establishing a decision-making system that aims to create desired outcomes, which are unlikely to materialize without specific actions. In the decision-making style, analysts play a central role in strategy formulation, collaborating closely with managers to develop long-term strategies utilizing various management techniques. The planning approach prioritizes systematic analysis, concentrating on evaluating the costs and benefits of competing proposals. Through formal planning, organizations seek new opportunities while addressing existing problems in a methodical manner. Furthermore, planning integrates decisions and strategies under the assumption that interlinked decisions can reduce conflict and enhance complementarity. This process involves designing decisions within a comprehensive framework, thereby effectively influencing the organizational environment and facilitating achievement of strategic objectives.

Crisis is complex due to varying perspectives, but theoretical literature offers key concepts. It is a turning point for an organization [10]. Crisis is described as a significant negative event that disrupts normal operations and threatens existence [11]. It can also lead to positive radical change [12]. It is described as an event causing extreme pressure and disorganization for decision-makers [13]. Therefore, it represents urgent situation requiring significant decisions and systemic restructuring [14]. Crises often emerge from organizational problems in unstable times [15]. Threat to the organization and its stakeholders, emphasizing uncertainty and potential harm to top-priority goals [16]. Latent issues can escalate into crises, often starting as minor events and this stage called pre-crisis [17]. Management must recognize these issues and take responsibility to prevent escalation, viewing it as an opportunity to turn negatives into positives [15]. Efforts focus on identifying potential crises through issue and problem management, planning, and proactive measures [18]. Activities aim to prevent minor problems from becoming significant crises, while readiness involves updating crisis management plans and training teams [19].

Research shows that crises have an incubation period, with some beginning long before escalation [20]. Managing potential crises during this phase is more effective than addressing them post-eruption, reducing surprise and urgency [21]. Additionally, information gathered aids in preparation and informs effective crisis management strategies [22].

Avoiding all crises is an unrealistic goal in crisis management [23], as some crises are unavoidable due to unclear warning signs [24]. Organizations may fail to act early, leading to acute crises [21]. Even those actively preventing crises are not immune [16]. The acute crisis stage is intense and short, occurring when warning signals escalate without effective management, resulting in significant media coverage and damage [25]. At this point, managers must focus on damage control, as preventive measures are no longer viable [15]. During this stage, organizations face rapid events that create confusion and low morale among decision-makers, there may be a loss of respect for management, internal conflicts, and an exodus of top talent [15]. Consequently, management shifts focus to crisis management to minimize negative impacts and capitalize on any potential positives [18]. Once a crisis is under control, the organization enters a recovery stage focused on regaining losses and demonstrating accountability to stakeholders. Managers aim to recover losses, evaluate performance during the crisis, and implement necessary changes [15]. The focus is on swift control, budgeting expenses, and identifying effective resolutions to turn the crisis into a positive turning point [21]. Management actions involve restoring organizational activity through corrective measures for both the problems that caused the crisis and those it created. These efforts often take longer than the crisis itself due to their complexity. Additionally, this stage includes evaluating crisis management performance. It is crucial to investigate the crisis's causes, learn from mistakes, and prepare for future crises by enhancing management capabilities [19].

Thus, the purpose of this research is to analyze various decision-making styles utilized within the Iraqi Ministry of Planning, focusing on how these styles influence the management of crises. Investigate the specific stages of crisis management, before, during, and after a crisis, and evaluate how decision-making styles align with each stage. Notably, the decision-making process in time of crisis remains underexplored; thus, this research aims to confirm that the choice of decision-making style is influenced by the stage of the crisis [26]. To date, no comprehensive model for crisis decision-making has been developed [27]. Consequently, this research seeks to employ a situational approach to select decision-making styles that align with the crisis stages, following the recommendation for empirical studies on crisis management decision-making processes [28].

It seeks to affirm that the planning decision-making style is suitable for the pre-crisis stage, and that the entrepreneurial decision-making style is suitable for the crisis stage, therefore the incremental decision-making style is suitable for the post-crisis stage.

Systematic analysis enhances decision-making by identifying necessary actions and evaluating alternatives [29], [30]. This process involves gathering information to assess the merits and consequences of each option [31]. Managers must understand their environment and the decision-making process to reduce uncertainty [32]. In dynamic environments, decision-makers enhance rationality by accelerating information collection to choose effective alternatives [33]. Crises develop over time, often with a time gap between warning signals and the actual crisis [34]. Early warning signals indicate potential crises, and managers can anticipate them by systematically scanning their environment [35]. Continuous monitoring is vital for crisis avoidance, helping identify danger signals for proactive prevention [36]. Diagnosing early signals and monitoring developments are essential for effective management. The life cycle model shows that crises can be influenced, making it wise to address issues before escalation [37]. Management can prevent crises through interventions and planning responses. Proactive behaviors, such as environmental scanning and threat evaluation, are crucial [38]. Planning reduces organizational vulnerability to crises [39], and is essential during uncertainty [40]. Organizations adopt planning as a proactive approach to align with their environment through analysis [41].

Entrepreneurial decision-making style actively seeking new opportunities while treating problems as secondary, with centralized decision-making [7]. This approach fosters bold actions in uncertain situations, prioritizing growth and aligning with management theories emphasizing opportunity-seeking and risk-taking [42]. This reflects some crisis management literature, suggesting organizations should view crises as opportunities rather than merely planning responses [38]. In high-uncertainty situations, centralization can speed up decision-making by reducing negotiation time [43], and involving fewer employees enhances speed [44]. Creativity in decision-making is crucial for comprehensive evaluations [45]. Effective entrepreneurs possess creative decision-making skills, enhancing cognitive processing [46]. Ultimately, the effectiveness of decision-making relies on the creativity, risk tolerance, and flexibility of managers, impacting organizational success [47]. Crises pose significant threats, requiring decision-makers to act despite constraints [26]. Situational theory advocates for gradual approaches, emphasizing small, incremental changes over radical shifts [44], [42].

Organizations often implement actions and later rationalize their effectiveness, making simple adjustments while monitoring outcomes [48].

The limited successive comparisons approach suggests decisions are continuously redefined through incremental processes [9]. Managers typically prefer small adjustments [49]. The logical incrementalism model frames decision-making as non-comprehensive, grounded in limited information and complex interrelations [50]. In this context, uncertainty is managed by relying on existing beliefs rather than extensive analytical models. Decision-makers often use truncated methods, avoiding long-term projections to simplify complexity [51]. Incrementalism helps manage cognitive constraints linked to major decisions, fostering organizational awareness [52]. Organizations are socio-political entities where conflicting interests prevail [53]. Decision-makers navigate these dynamics, making incremental political choices to reconcile conflicting demands [54]. Thus, the decision-making process is characterized as disjointed and incremental, involving negotiation among stakeholders in complex environments. Logical incrementalism allows managers to integrate rational analysis with power dynamics, addressing both behavioral needs and available information [52]. Based on above discussion the research posits the following hypotheses:

H1: The planning decision-making style is suitable for the pre-crisis stage.

H2: The entrepreneurial decision-making style is suitable for the crisis stage.

H3: The logical incrementalism decision-making style aligns with the post-crisis phase.

Thus, the purpose of this research is to analyze various decision-making styles utilized within the Iraqi Ministry of Planning, focusing on how these styles influence the management of crises. Investigate the specific stages of crisis management before, during, and after a crisis, and evaluate how decision-making styles align with each stage.

2. Methodology

A descriptive research design is utilized, focusing on two key variables: Decision-making and crises stages. Decision-makers need an appropriate style to make accurate decisions under pressure. The effectiveness of decision-making depends on how well the style matches the situation. Despite numerous studies aimed at modeling effective decision-making in crises, there is still limited understanding of this process and its influencing factors.

Many studies have not considered the differences between decision-making styles [55], and have overlooked that the style should adapt to the specific situation [56].

The population under consideration for this research comprises managers from the National Center for Administrative Development and Information Technology/ Ministry of Planning in Iraq. The managers at the National Center for Administrative Development and Information Technology were selected for several reasons: First: Specialization in management: The managers at the center have a strong academic and professional background in management, making them qualified to effectively analyze decision-making styles. Second: Experience in crises: The center works on developing crisis management strategies, providing managers with direct experience in dealing with crises, which in turn offers valuable insights into decision-making styles. Third: Access to data: The center provides access to accurate data regarding administrative processes and decisions made, facilitating the collection of necessary information for the research. Fourth: Focus on development: The center aims to improve management mechanisms, making it an ideal environment for studying the alignment between decision-making styles and stages of crisis management. Decision-making style and crisis management stage are measured using appropriate scales available in the literature. Measurement scales that are employed in this research are presented in Table 1.

Table 1. Measurement scales employed

Variable	Sub variable	Source
Decision-making styles	Planning style	[7]
	Entrepreneurial style	
	Incremental style	
Crisis management stages	Pre-crisis stage	[17]
	Crisis stage	
	Post-crisis stage	

Decision-making style is measured using sub-variable which is planning, entrepreneurial and incremental style. Crisis management stages are measured using sub-variable which is pre-crisis, crisis stage and post-crisis stage. Statements on a five-point scale are used to measure decision-making style and crisis management stages of the sample units.

A preliminary study was conducted to assess the reliability of the scales and the research instrument. In this preliminary study, a total of 48 responses were collected.

The obtained alpha (α) scores for the different constructs are: Decision-making styles ($\alpha = 0.902$), at sub-variable level the obtained alpha (α) scores for the different constructs are: Planning style ($\alpha = 0.84$), entrepreneurial style ($\alpha = 0.74$), and incremental Style ($\alpha = 0.82$), while crisis management stages ($\alpha = 0.899$) at sub-variable level the obtained alpha (α) scores for the different constructs are: Pre-crisis stage ($\alpha = 0.87$), crisis stage ($\alpha = 0.82$), and post-crisis stage ($\alpha = 0.72$). These alpha scores indicate the internal consistency or reliability of the measurement scales for each construct. A higher alpha score suggests greater reliability, indicating that the items within each construct consistently measure what they are intended to measure. In this case, the obtained alpha scores generally indicate good to excellent reliability for the scales used in the study.

3. Results

To ensures that the scale's dimensions and their corresponding items align with the original theory and related research, structural equation modeling, was conducted using AMOS v.23. Figure 1 depicts the confirmatory factor analysis for the decision-making styles variable model, which comprises three main dimensions totaling 18 questions.

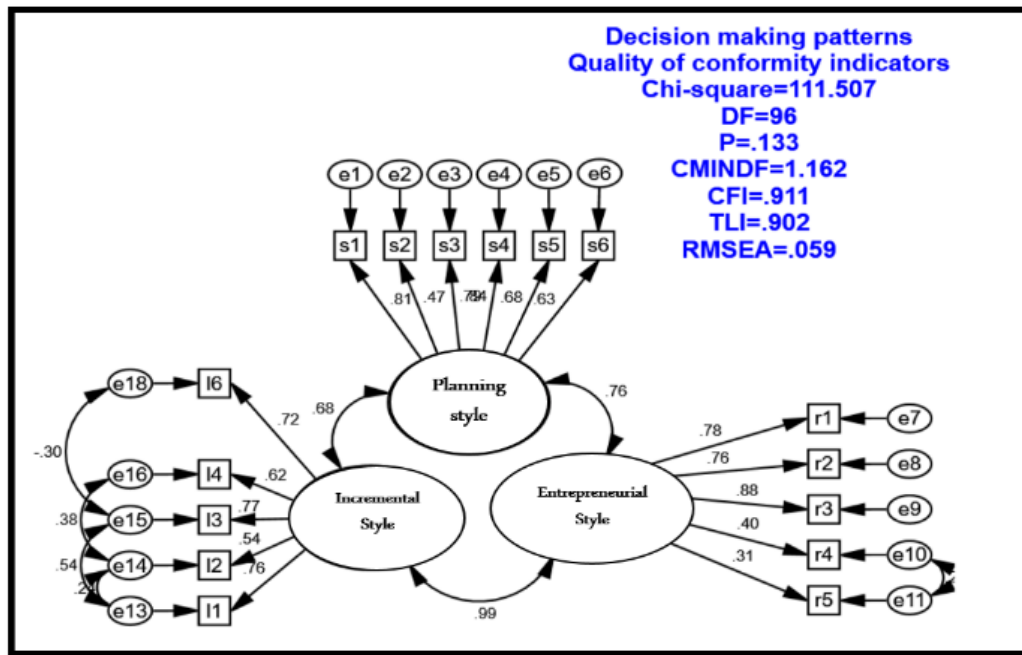


Figure 1. The complete model of the decision-making styles variable

As shown in Table 2, all items across the three dimensions were significant at the 0.05 level, indicating their impact. The values of the Composite Reliability (CR) ranged from 7.865 to 2.065, all exceeding 1.96, thus providing sufficient evidence to accept the model for further analyses.

Notably, item (R6) from the entrepreneurial style dimension and item (I5) from the incremental style dimension were removed due to their lack of significance based on the goodness-of-fit indicators.

Table 2. The regression weights, standard errors, critical values, and significance levels for the dimensions of the decision-making styles variable

Paragraphs	Path	Dimensions	Estimate	Standard Error	Critical Value	Significance Level at 0.05
S1	<---	Planning Style	1.000			
S2	<---		.705	.222	3.174	.002
S3	<---		.976	.164	5.948	***
S4	<---		1.108	.171	6.474	***
S5	<---		.794	.161	4.938	***
S6	<---		.797	.176	4.526	***
R1	<---	Entrepreneurial Style	1.000			
R2	<---		.956	.173	5.529	***
R3	<---		1.011	.152	6.639	***
R4	<---		.564	.208	2.709	.007
R5	<---		.411	.199	2.065	.039
I1	<---	Incremental Style	1.000			
I2	<---		.795	.196	4.058	***
I3	<---		.972	.124	7.865	***
I4	<---		.854	.205	4.168	***
I6			.946	.192	4.940	***

Figure 2 illustrates the confirmatory factor analysis for the crisis management stages variable model, which consists of three main dimensions totaling 18 questions.

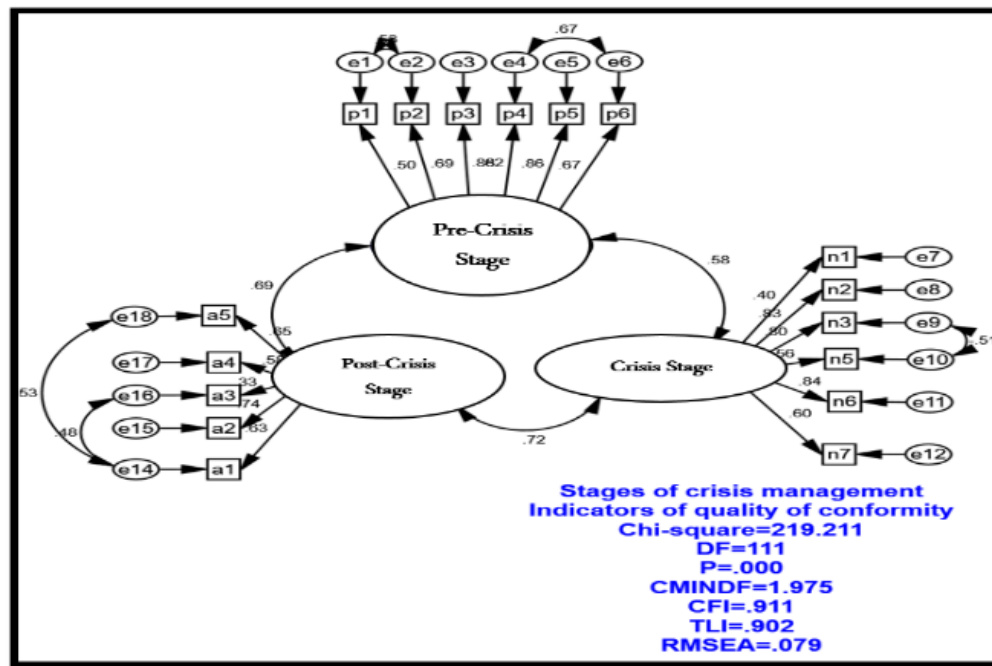


Figure 2. The complete model of crisis management stages variable

As shown in Table 3, all items across these dimensions were significant at the 0.05 level, indicating their effectiveness.

The Composite Reliability (CR) values ranged from 4.351 to 2.031, all exceeding 1.96, providing sufficient evidence to accept the model for further analyses.

Notably, item (N4) from the crisis stage dimension was removed due to its lack of significance based on the goodness-of-fit indicators.

Table 3. The regression weights, standard errors, critical values, and significance levels for the dimensions of the decision-making styles variable

Paragraphs	Path	Dimensions	Estimate	Standard Error	Critical Value	Significance Level at 0.05
P1	<---	Pre-Crisis Stage	1.000			
P2	<---		1.264	.290	4.351	***
P3	<---		1.664	.477	3.489	***
P4	<---		1.114	.373	2.991	.003
P5	<---		1.489	.431	3.456	***
P6	<---		1.134	.364	3.117	.002
N1	<---	Crisis Stage	1.000			
N2	<---		2.398	.881	2.721	.007
N3	<---		2.239	.832	2.691	.007
N5	<---		1.504	.636	2.365	.018
N6	<---		2.489	.912	2.730	.006
N7	<---		1.853	.753	2.462	.014
A2	<---	Post-Crisis Stage	1.000			
A3	<---		.472	.233	2.031	.042
A4	<---		.925	.247	3.746	***
A5	<---		1.041	.263	3.954	***
A1	<---		.865	.228	3.799	***

Table 4 reveals that the planning style achieved the highest overall arithmetic mean of 3.756, exceeding the hypothetical mean range of 2.61 to 3.40, indicating a good level of effectiveness. The standard deviation was 0.687, with a coefficient of variation of 18.29, suggesting a moderate level of response variability.

This dimension ranked second in relative importance, reflecting a strong presence of the planning style at the National Center for Administrative Development and Information Technology under the Ministry of Planning.

This indicates that the center relies on systematic and accurate analysis for most decisions and plans, generating suitable alternatives while avoiding intuition or improvisation.

Moreover, the center aims to be deliberate and avoid haste in its planning processes. Researchers note that while this style can be beneficial, it may be detrimental in situations requiring quick decision-making.

The lowest overall arithmetic mean was recorded for the entrepreneurial style, at 3.409, indicating an average level of effectiveness, with a standard deviation of 0.669 and a coefficient of variation of 35.856. This suggests a decline in the entrepreneurial approach during the planning process at the examined National Center. There appears to be a lack of willingness to take risks and embrace uncertainty, as well as insufficient motivation for improvisation or deviation from systematic rules in decision-making. Researchers have noted that the center does not recognize the inevitability of problems or the necessity for creative solutions. They argue that fear and an unwillingness to confront the realities of a rapidly changing environment hinder the organization's potential for progress.

Overall, the decision-making styles variable achieved an arithmetic mean of 3.65, indicating a good level, with a standard deviation of 0.607. This reflects a reliance on planning and incremental styles while distancing from the entrepreneurial style. The results suggest that decision-makers at the center are cautious about taking risks, likely due to fears of accountability or making mistakes, which could lead to potential responsibility issues. If the center maintains this cautious approach, its development and progress may be slow, resulting in numerous challenges due to a lack of alignment with environmental changes.

Table 4 shows that the pre-crisis stage achieved the highest overall arithmetic mean of 3.739, indicating a good level and exceeding the hypothetical mean.

The standard deviation was 0.766, with a coefficient of variation of 20.49. This dimension ranked sixth in relative importance, suggesting that decision-makers believe crises can be anticipated through enhanced monitoring and continuous evaluation, enabling them to recognize and prepare for potential crises.

In contrast, the crisis stage recorded the lowest overall arithmetic mean of 3.541, also reflecting a good level, with a standard deviation of 0.707 and a coefficient of variation of 19.97. This dimension ranked fifth in relative importance, indicating that many decision-makers at the center often experience delays in decision-making during a crisis. The information available at this stage is frequently incomplete, lacking incremental indicators leading to the crisis, and there is limited time for environmental scanning. Researchers argue that these challenges highlight a significant deficiency in the center's preparedness and sensitivity to impending crises.

Overall, the crisis management stages variable achieved an arithmetic mean of 3.652, indicating a good level of effectiveness, with a standard deviation of 0.607. This suggests low dispersion in respondents' answers and a consensus that the center effectively navigates most stages of crisis management. However, there is notable weakness in handling crises as they occur, and the center faces significant challenges in the post-crisis phase, including extended time required to address the negative repercussions of the crisis. Decision-making can be prolonged due to the extensive impacts of the crisis, complicating the development of effective solutions. Researchers suggest that these repercussions could have been mitigated with proper incremental preparations made before and during the crisis.

Table 4. Descriptive analysis indicators of research variables

Research variables	Arithmetic mean	Standard deviation	Coefficient of variation	Relative importance
Planning style	3.75	0.687	18.2	2
Entrepreneurial style	3.40	0.669	19.6	4
Incremental style	3.68	0.665	18.0	1
Decision-making styles	3.61	.581	16.0	First
Pre-crisis stage	3.73	0.766	20.4	6
Crisis stage	3.54	0.707	19.9	5
Post-crisis stage	3.67	0.683	18.5	3
Crisis management stages	3.65	0.607	16.6	Second

Table 5 presents the results of the multiple linear regression analysis examining the impact of decision-making styles (planning style, entrepreneurial style, incremental style) on crisis management stages (pre-crisis stage, crisis stage, post-crisis stage) as it follows:

Table 5 shows that the value of (β) for the planning style is 0.471, with a significance level of 0.004, which is less than the 0.05 threshold. This indicates a significant effect of the planning style on the pre-crisis stage, allowing us to accept the alternative hypothesis that the planning style of decision-making is suitable for the pre-crisis stage.

It suggests that the National Center for Administrative Development and Information Technology tends to rely on the planning style in decision-making, particularly before crises arise. This approach helps mitigate the negative impacts of crises through prior preparation and serves as a preventive measure by reducing the likelihood of crises occurring.

From Table 5, the value of (β) for the entrepreneurial style is -0.123, with a significance level of 0.587, which exceeds the 0.05 threshold.

It indicates that there is no significant effect of the entrepreneurial style on the crisis stage, leading to the rejection of the alternative hypothesis and acceptance of the null hypothesis, which states that “the entrepreneurial style of decision-making is not suitable for the crisis stage.”

This suggests that the entrepreneurial approaches employed at the examined center are ineffective or fail to produce noticeable improvements in crisis management.

Based on Table 5, the value of (β) for the incremental style is 0.720, with a significance level of 0.001, which is below the 0.05 threshold. It indicates a significant effect of the incremental style on the post-crisis stage, allowing acceptance of the alternative hypothesis that “the incremental style of decision-making is suitable for the post-crisis stage.” It suggests that decision-makers’ reliance on the incremental style during crises has a positive and statistically significant impact on the subsequent phase of overcoming the crisis and achieving recovery and stability. In other words, utilizing incremental and well-considered decision-making enables the examined center to advance more effectively in the post-crisis stage.

Table 5. The impact between the dimensions of decision-making styles in the stages of crisis management using multiple linear regression

Decision-making styles	Pre-crisis stage		Crisis stage		Post-crisis stage	
	β	t	β	t	β	t
Planning style	0.47	3.04	0.20	1.22	0.08-	0.52-
Entrepreneurial style	0.00	0.00	0.12-	0.54-	0.13-	0.64-
Incremental style	0.37	1.77	0.44	1.96	0.72	3.49
(α)	0.589					
Multiple R	0.661					
(R^2)	0.437					
R^2 (Adj)	0.399					
(F)	11.395					
Sig.	0.000					
F TABLURE	2.31					

4. Discussion

Research on decision-making processes has shown that decision-makers can employ multiple approaches and that different styles can be combined when making decisions [57]. More importantly, it has been established that relying solely on a single style does not necessarily yield the best decision outcomes in every situation [58]. The results of this study align with [59] assertion that there is no single decision-making style that fits all situations faced by organizations. The study finds that the planning style aligns with the pre-crisis stage, indicating that reliance on this style enhances the ability to prepare for and respond effectively to crises.

Utilizing planning allows organizations to identify potential risks and develop strategies to mitigate their negative effects, reflecting the importance of a proactive approach in crisis management.

Furthermore, prior studies indicate that preparation and planning in addition to detecting crises play a crucial role in implementing immediate changes when crises occur [60]. Effective decision-making planning allows organizations to reduce ambiguity and lessen the urgency often associated with sudden crises. [28]. Given that this style can detect early warning signals of a crisis and enable them to achieve what is called ‘crisis killing’ or to contain its damages in the event of its inevitability [61]. Many crises show that warnings, risks, or vulnerabilities were recognized in advance but were not effectively addressed.

This highlights the importance of aligning pre-crisis planning with the decision-making process to mitigate the impact of crises [62]. Therefore, other study asserts that organization's deployment for planning and decision-making, makes it better equipped to manage crises effectively [63].

Given that this style relies on analyzing potential risks and developing proactive scenarios [64], decision-making under time pressure suggests that pre-crisis planning can reduce stress and improve decision-making during crises [65]. Conversely, the entrepreneurial style appears to have positive effect during the crisis stage. This suggests that entrepreneurial methods, which are often characterized by flexibility and innovation, are sufficient to address the immediate challenges that arise during crises. This result aligns with the findings of prior research that assert that organization confront disruptions focus on adaptive and dynamic decision-making, with references to previous frameworks on organizational [28], [66]. Moreover, the study finds that the organizations linked entrepreneurial orientations to innovation and proactive strategies during crises [67]. The study by [68] indicates that comprehensive and intuitive decision-making is based on distinct information processing approaches, each requiring different cognitive capacities. However, they can be combined in unique ways when senior executives improvise decisions in crisis situations. This integration can enhance the effectiveness of decisions made in critical times, leading to more appropriate and successful responses to challenges. According to [69] research does not find positive relationship between entrepreneurial decision-making and crisis stage. Organizations often rely on improvisational skills to navigate unexpected challenges and respond effectively, allowing them to maintain flexibility and foster innovation under pressure. This result aligns with [70] study that found the entrepreneurial ventures manage crises through a combination of entrepreneurial actions, entrepreneurial orientations, and entrepreneurial supports, which collectively termed entrepreneurial interventions.

Regarding the incremental style, the results indicate that it plays a positive role in the post-crisis stage. This suggests that making gradual and well-considered decisions can significantly contribute to the recovery from crises. This approach allows organizations to better assess the situation after the crisis, adapt to new circumstances, and implement strategies that enhance stability and growth. The ability to learn from crises and apply incremental changes reflects the necessary resilience to handle future challenges. The study found that the logical incrementalism decision-making style aligns with the post-crisis phase. The results of previous studies were both consistent and inconsistent with the findings of this research.

The study of [71] highlights that incremental decision-making plays a role in post-crisis resilience building. Incremental changes, guided by the logic of appropriateness, contribute to sustainable resilience by fostering professionalization, network-based collaboration, and bottom-up adaptation. According to [72] study, the incremental adaptive launching process aligns with the "during" phase of crisis.

5. Conclusion

The purpose of this research is to analyze various decision-making styles utilized within the Iraqi Ministry of Planning, focusing on how these styles influence the management of crises. Examine the distinct stages of crisis management before, during, and after a crisis and analyze how various decision-making styles correspond to each stage. This study focuses on the National Center for Administrative Development and Information Technology, a department within the Iraqi Ministry of Planning. The survey method was used to gather primary data from managers in the National Center for Administrative Development and Information Technology. The collected data underwent reliability and normality testing, indicating the reliability of scales and research instruments. The results extracted from this research indicate that the use of the planning style by managers in decision-making pre-crises reflects an effective strategy that enhances the center's ability to adapt and respond quickly to challenges. They clarify that the planning style enables them to foresee potential crises, allowing them to take proactive measures that can spare the center many risks. Additionally, it provides a well-structured framework that facilitates decision-making based on reliable data, thereby increasing the effectiveness of the outcomes. It also enables them to allocate resources effectively, ensuring they are prepared to face crises without stumbling. Furthermore, it contributes to enhancing collaboration among teams, which aids in rapid collective response when crises occur. It has been clarified that through effective planning, potential risks can be reduced, and the organization's ability to manage them can be strengthened. Furthermore, the results of this research indicate that the use of the entrepreneurial style by managers in decision-making during crises is a suitable and effective strategy to enhance the ability to deal with urgent challenges. Managers have highlighted that the entrepreneurial decision-making style contributes to making quick and effective decisions, providing an immediate response to crises and reducing wasted time. It also encourages innovative thinking, which helps develop new and unconventional solutions to address crises effectively.

Additionally, this style assists managers in embodying a strong leadership pattern, which enhances the teams' confidence in the decisions making, and motivates them to work effectively under pressure. Moreover, this style stimulates the exploitation of new opportunities that may arise from crises, contributing to achieving unexpected gains. Finally, the results of the research indicate that the use of the logical incrementalism style by managers in decision-making during the post-crisis phase is an effective strategy for implementing recovery and growth efforts. It has been shown that this style allows them to conduct a comprehensive analysis of the data and circumstances related to the previous crisis, which contributes to understanding the impacts of the crisis and identifying areas that need improvement. Furthermore, it enables them to reduce the risk of making poorly considered decisions that could exacerbate the situation, as this style helps in setting clear and specific recovery goals, directing efforts effectively towards achieving those objectives. Additionally, this approach contributes to the development of sustainable action plans that take into account future challenges, enhancing their ability to adapt and grow in changing environments. Moreover, this style encourages team involvement in the decision-making process, which fosters a sense of responsibility and contributes to enhancing teamwork. Finally, this approach allows for the evaluation of previous decision outcomes and learning from them, facilitating process improvement and increasing efficiency in the future.

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