Predicting crisis management through strategic human resource planning in the Libyan Ministry of Health

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التنبؤ بإدارة الأزمات من خلال التخطيط الاستراتيجي للموارد البشرية في وزارة الصحة الليبية

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Abstract:

The study aimed to reveal the predictive ability of crisis management through strategic human resource planning in the Libyan Ministry of Health. The study sample was selected using a purposive stratified method from the senior management levels of the ministry, numbering 45 decision-makers. The questionnaire was used to collect all data and was verified for validity and reliability. The study reached the following main conclusions: strategic human resource planning, represented by motivation and training, is at a high level.

The results showed that the Ministry of Crisis Management is highly regarded within the ministry and that there is a significant statistical effect (< 0.05) of strategic human resource planning in its two dimensions (motivation and training) on crisis management in the ministry.

Keywords: Predicting, Crisis Management, Strategic Planning, Human Resources, Ministry of Health, Libya.

الملخص:

هدفت الدراسة إلى الكشف عن القدرة التنبؤية لإدارة الأزمات من خلال التخطيط الاستراتيجي للموارد البشرية في وزارة الصحة الليبية. تم اختيار عينة الدراسة بأسلوب العينة الطبقية القصدية من مستويات الإدارة العليا بالوزارة، وبلغ عددهم 45 من صناع القرار. تم استخدام الاستبيان لجمع كافة البيانات وتم التحقق من صدقه وثباته. وتوصلت الدراسة إلى النتائج الرئيسية التالية: التخطيط الاستراتيجي للموارد البشرية، متمثلاً في التحفيز والتدريب، على مستوى عالٍ. وأظهرت النتائج أن إدارة الأزمات بالوزارة تحظى بتقدير كبير، وأن هناك أثرًا إحصائيًا ذا دلالة (أقل من 0.05) للتخطيط الاستراتيجي للموارد البشرية ببعديه (التحفيز والتدريب) على إدارة الأزمات بالوزارة.

الكلمات المفتاحية: التنبؤ، إدارة الأزمات، التخطيط الاستراتيجي، الموارد البشرية، وزارة الصحة، ليبيا.

Introduction:

The essence of the administrative process is to define the objectives, policies and strategies that are developed to achieve these objectives, through a revised plan to clarify the implementation process, considering that strategic human resources planning is one of the most important elements of human resources management, through which the organisation ensures that it obtains the appropriate quality and number of individuals at the right time and place. Crisis management is primarily concerned with potential crises by sensing and monitoring various variables in the internal and external environment that cause crises and preparing all resources and capabilities to prevent or prepare to deal with them with sufficient efficiency and effectiveness.

- **Study methodology:**
- **Research problem:**

Many crises, especially the coronavirus crisis, have shown the disruption or inability of organisations to cope with the pandemic, This has led to the need to strengthen human resource management through strategic planning. Among these organisations is the Libyan Ministry of Health, which reflects the outcome of these efforts to provide competent workers. Crisis management is linked to the measures

provided by strategic planning for human resources as an integrated system, and its management enables it to develop and support the organisation's capabilities.

From here, the researcher deduced the problem of the study by referring to several previous studies that addressed the subject of the study, such as the study (Al-Bahiri 2023), whose results indicated that there is a positive impact of human resource management practices on crisis management.

The study by Al-Haziri (2023) also pointed to the role of human resource management in crisis management.

Therefore, the problem of the study lies in identifying the impact of strategic human resource planning on crisis management at the Ministry of Health. The researcher conducted his study on this ministry and examined what it did in response to this crisis.

- **Importance of the study:**
- **Scientific importance:**

The theoretical scientific importance is evident in the theoretical framework presented, which shows the impact between the independent variable---strategic human resource planning---and its two dimensions (motivation and training).

On the other hand, the study reviewed the literature on human resource strategies and their role in crisis management. The researcher hopes that this study will serve as a reference for subsequent studies.

- **Scientific (applied) importance:**

Its importance lies in the recommendations based on the results reached, which help the ministry use strategic human resource planning and raise the efficiency of its personnel, and also to assist employees and those in charge of human resource management at the ministry by informing them of the results of this study, which may contribute to sound administrative decisions that enhance its performance.

- **Study objectives:**

The study aims to:
1. Identify the level of human resource strategies in the Ministry of Health, which is the subject of the study.
2. Analyse the levels of implementation of crisis management dimensions in the Ministry.
3. To reveal the predictive capacity of crisis management through human resource strategies at the Ministry.
4. To come up with some results and recommendations that may contribute to crisis management in the ministry, including, for example, the participation of ministry employees in international conferences and forums at home and abroad related to crisis management.

- **Study hypothesis:**

Main hypothesis (HO1): There is a statistically significant predictive power at the significance level ($a \leq 0.05$) in crisis management through strategic human resource planning (human resource motivation, training and development) in the ministry.

- **Study limitations :**
- **Subject boundaries :** The study was limited to the impact of strategic human resource planning on crisis management at the Ministry of Health in Libya.
- **Human boundaries:** The study was limited to employees at the administrative and leadership levels of the ministry.
- **Spatial boundaries:** The Ministry of Health in Libya.
- **Temporal boundaries:** This study was prepared in the first quarter of 2024.

- **Study terms:**
- **Strategic human resource planning:** This is a continuous process in which the required number of competent individuals is determined, ... in line with the organisation's objectives.
- **Crisis management is defined (Abu Nara, 2016: 14)** as a situation faced by decision-makers in an organisation, in which objectives are intertwined and follow on from one another, and which is exacerbated by the decision-maker's weak control over the situation and its direction.

- **Al-Sairfi (2011) defines crisis** as how to deal with crises in light of preparedness, awareness, knowledge, available resources, skills, and the prevailing management style.

The researcher believes that there is no specific definition of a crisis and that everyone views it through the lens of their environment and their available resources and knowledge.

- **Previous studies:**
- **First - Arab studies:**

1. **Abu Raman and Dhamah's study entitled (2025): "The Impact of Human Resource Development on Crisis Management Effectiveness among Employees in Jordanian Private Universities."** The results of this study showed that human resource appreciation, represented by appreciation, training, and motivation, has an impact on crisis management in Jordanian private universities.

2. **Mahaoui and Salman's (2023) study entitled "The Role of Human Resource Management Practices in the Effectiveness of Organisational Crisis Management in the Iraqi Ministry of Interior"** The study aimed to examine the role played by human resource management practices in the Iraqi Ministry of Interior and their shortcomings in dealing with crises. The results of the study showed a statistically significant correlation between human resource management practices and the effectiveness of crisis management faced by the ministry.

3. **Ali Al-Shahrani (2012) conducted a study entitled: "Enhancing the role of strategic leadership in crisis management."** The aim of this study was to highlight the most important crises faced by border guard leaders in the Jazan region and the role of strategic leadership in crisis management at its various stages.

The study concluded that the lack of crisis management centres in the senior leadership of the Border Guard Administration in the Jazan region had an impact on the effective handling of crises, as did the weak scientific methodology of most of those responsible for crisis management in the Border Guard in the Jazan region.

- **Second: Foreign studies:**

1. **Edvardsson & Durst (2021) conducted a study entitled:**
"Human Resource Management in Crisis Situations: A Systematic Literature Review"
"Human Resource Management in Crisis Situations: A Systematic Literature Review": The study aimed to examine human resource management in times of crisis since 2008. A descriptive approach was used as it was appropriate for the purposes of the study. The study sample consisted of 56 articles published in a journal indexed in the Web of Science database. It was found that most of the research published in recent years shows a growing interest in human resource management and its impact on crisis management related to (economic crisis and human resource management, health crisis, natural disasters, and political instability).

2. **Adjei's (2024) study entitled:**
"Human Resource Management in Crisis Communication Within the Healthcare Sector: A Case Study of Hospitals in Ghana"
"Human Resource Management in Crisis Communication within the Healthcare Sector: A Case Study of Hospitals in Ghana": The study aimed to identify the role of human resource management in crisis communication within the healthcare sector, with a focus on hospitals in Ghana. The study highlighted the importance of effective communication during crises, which is critical in healthcare settings, especially during emergencies such as pandemics and other public health crises. The study explored the human resource management strategies used by hospitals to manage communication during crises and examined their impact on employee performance and overall crisis management effectiveness.

The study's findings showed that strong human resource management strategies, including targeted training, clear communication systems, and employee support, are essential in enhancing communication efforts during crises, and that challenges such as inadequate training, resource constraints, and cultural barriers can undermine these efforts.

3. **Widaryanto & Sari (2024) study** Widaryanto & Sari Study titled:

"Hospital Human Resource Management (HRM) Strategies in Facing Healthcare Workforce Crisis: Approaches for Efficiency and Sustainability"

"Hospital Human Resource Management Strategies in Facing Healthcare Workforce Crisis: Approaches for Efficiency and Sustainability": The study aimed to identify the workforce crisis and its impact on the quality of care and operational sustainability of hospitals around the world. This study explores effective human resource management strategies to address the healthcare workforce crisis through the use of various strategies. Key strategies include improving healthcare recruitment processes, enhancing workforce retention through professional development, implementing flexible working arrangements, and promoting a supportive organisational culture. The results showed that human resource strategies (workforce training and motivation) had an impact on increasing readiness to deal with workforce crises in the healthcare sector and thus maintaining the well-being of healthcare workers.

- **Commentary on previous studies:**

The current study drew on the findings of previous studies to enhance understanding of the impact of strategic human resource planning on crisis management in order to build a solid scientific foundation that would help construct the theoretical framework (Mahaoui and Salman, 2023; Ali Al-Shahrani, 2012). The current study drew inspiration for its methodology from previous studies and used many similar statistical methods. It also drew on some previous studies for the dimensions of the study (Widaryanto & Sari, 2024).

First section: **Strategic Human Resource Planning**
- **Human Resource Training and Development:**

It is well known that training as a strategy aims to build confidence among employees by developing their skills. The goal is to increase and improve the organisation's ability to develop its capacity to absorb changes in the external environment, with a view to bringing about appropriate changes in its internal environment, in line with its long-term objectives.

- **The concept of training:**

Human resource management loses its effectiveness in achieving the organisation's objectives if it does not determine the nature of the training required for employees. Training and development processes consist of many vital and interrelated activities, such as identifying training needs and developing the scientific and behavioural capabilities of employees, which contributes to the growth and improvement of the organisation's performance and its ability to cope with any changes it may face at the internal and external levels.

- **Definition of training (Al-Hini, 2007):**

It is a human resources activity that works to enhance the need for development and qualification of individuals working at various organisational levels.

- **It can also be defined procedurally** as "the work carried out by human resources management towards individuals in the organisation and the extent to which their efficiency needs to be improved.

- **Training objectives (Al-Sairfi, 2007):** Some of the strategic objectives of training can be summarised as follows:

1. Increasing innovation and creativity at work, leading to production efficiency and productivity.
2. Training is a stabilising factor for employees, giving them more experience and advancing their careers.
3. Contributing to building positive relationships with colleagues, work and the organisation.

- **Strategic planning and its importance for human resources (Wahiba, Ashmawi, 2021):**

This importance can be identified through the following:
- Strategic planning facilitates the selection of competent individuals from within or outside the organisation.
- It increases the competence of individuals and values their experience in the long term to enable the organisation to benefit from them.

- It provides the organisation with individuals who have the skills required by modern technology, especially in the field of competition and changes in the organisation's external environment.

- **Advantages and objectives of strategic human resource planning:**
- Working to identify the organisation's current and future needs by forecasting job workload.
- Increasing the effectiveness of communication between human resources within the organisation.
- Helps the organisation prepare and train leaders.
- Enables the organisation to keep up with changes in the external environment.

- **Motivation:**

In order for the organisation to have a significant impact on its employees and achieve its goals, it must make additional efforts and possess strategic characteristics and qualities, including incentives:

- These are what an individual receives from the organisation for distinguishing themselves from others in their performance.

Incentives have a significant impact and importance through their effect on production processes if they are used properly and at the right time.

- **Definition of motivation:**

Abu Hamid (2020) defined it as: "The force that brings out the best in an employee's abilities, potential and talents, which the organisation then controls by harnessing them to increase productivity and improve work efficiency.

- **Characteristics of motivation:**
- Setting performance rates.
- Simplicity and responsiveness.
- Measurability
.

- **Types of incentives (Jady, 2017):**

There are many types of incentives that are used to motivate individuals, and organisations can use the appropriate ones to satisfy their needs. These are as follows:

Positive incentives, negative incentives, individual incentives, and group incentives.

Based on what has been reviewed about strategic human resource planning, the researcher believes that it remains the goal of all organisations due to its great importance, as it is one of the most valuable assets in an organisation, enhancing its competitiveness and working to combine modern technology and techniques with continuous and ongoing training within the organisation. It represents the first line of defense and the true leader of the organisation.

Motivation also plays an important and key role in providing a suitable working environment that gives employees a good impression of their importance and provides them with a sense of psychological comfort, which increases their lasting loyalty to the organisation.

The second topic: **Crisis Management**

Crisis management is an organisational process that aims to predict potential crises, prepare for them and deal with them when they occur. It is an integral part of the strategies of countries and institutions, as it helps to reduce potential damage and risks and works to protect human and material resources and institutional reputation. It also involves developing contingency plans and establishing effective communication systems to ensure rapid coordination during crises. The goal is to restore stability and enhance the ability to learn from past experiences to ensure better preparedness for the future.

- **The concept of crisis:**

As a direct result of rapid external and internal changes, crises arise, within which organisations operate, whether they are productive or service-oriented. This leads to crises that organisations must manage efficiently and effectively to limit the negative impact and capitalise on the positive aspects.

- **Definition of crisis:**

Al-Maghazi (2014) defined crisis as: a threat and danger, whether expected or unexpected, to the goals, values, beliefs and property of individuals, organisations and states, which also hinders the decision-making process.

It is therefore an unusual situation that has an impact on everyday matters.

A crisis also refers to a transitional state characterised by imbalance, representing a decisive turning point that determines the course of the future, with results that bring about changes for better or worse in the life of the organisation (Juma, 2020).

It can be defined procedurally as an unexpected situation that poses a serious threat to the beliefs, values, and goals of individuals or organisations.

This complicates decision-making, affecting daily work and disrupting the basic systems and structures of society.

- **The objectives of crisis management are:**
- Preventing crises from occurring and working to minimise their negative impact on individuals and communities.
- Eliminate their effects and address the negative consequences resulting from their severity.
- Developing the ability to predict potential and current sources of threats.

- **Types of crises:**

As indicated by Al-Hamlawi (2003: 96), crises can be classified according to their source as follows:
- **Natural crises:** These are caused by natural disasters, such as earthquakes, floods, volcanoes, etc. They are more common and dangerous to individuals because they occur suddenly.
- **Industrial crises:** These include oil tanker and chemical spills.
- **The stages of a crisis (Abu Shanab, 2009: 117):**

Emergence stage -- Escalation stage -- Completion stage -- Decline and end stage.

- **Causes of crises (Al-Hamlawi, 2003: 212):**

It is well known that there is no specific cause for a crisis; it may be due to a political, economic, financial or other crisis.

However, researchers agree that there are many causes, including:
- Weakness and inadequacy of human, technical and material resources.
- Insufficient foresight, lack of anticipation and lack of advance preparation for the crisis.
- Human errors resulting from negligence in training employees.
- Lack of understanding of information due to complex and slow communication processes.

Based on the above, the researcher believes that due to the variables involved in economic life and the political environment, it has become imperative for organisations, regardless of their activities, to overcome crises and deal with them in the right way, bringing about qualitative changes in their management. This requires strategic human resource planning as the first line of defence in confronting and managing these crises.

- **Conclusion:**

Strategic planning for human resource management is of great interest to organisations because of its paramount importance in achieving the results that organisations seek to achieve. Through qualified and knowledgeable human resources, and integrating them within the organisation in a manner commensurate with the capabilities and qualifications of each individual, they add to the creative process and keep the organisation in a state of constant and continuous competition by creating a competitive advantage, which is the fruit of the organisation's success.

Third section: Presentation and analysis of data
- **Study methodology:**

The study used a descriptive, analytical and predictive approach, as it was appropriate for the purposes of the study, which related to crisis management through strategic human resource planning in the Libyan Ministry of Health.
- **Study area:**

The study was conducted on the Ministry of Health in Libya, as it has dealt with many crises, especially during the COVID-19 pandemic, which was one of the most severe crises and disasters to hit the world in the 21st century.

- **Study sample:**

The study sample was selected using a purposive stratified sampling method from among the senior leadership of the Libyan Ministry of Health, comprising 45 respondents, who are referred to as study subjects when the number of participants is limited and who represent the primary study population.

First: Descriptive statistics

The five-point Likert scale was used in the questionnaire design to assess participants' opinions and attitudes about the various dimensions of the study. The five-point Likert scale consists of five response levels ranging from "strongly agree" to "strongly disagree" to facilitate comprehensive and accurate data collection on participants' rejection or endorsement of the statements presented.

1. Coding of responses, as shown in Table 1

Table (1) Five-point Likert scale

Level of importance	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Grade	5	4	3	2	1

1. **Calculating frequencies and percentages**
- **Frequencies and percentages:** Used to display the frequency distributions of the demographic characteristics of the sample individuals and their responses, showing the percentages of the distribution for each variable.
- **Mean:** Used to determine the average responses of sample individuals to questionnaire items for each variable.
- **Standard Deviation:** Used to measure the dispersion of responses around the mean, which helps to understand the diversity of responses.
- **Relative Importance:** The relative importance of the questionnaire items was determined within three levels, according to the following formula (Sekaran and Bougie, 2016)**:**
  - Relative Importance = (Upper Limit of Alternative - Lower Limit of Alternative) / Number of Levels (15) / 3 = 1.33. As shown in Table 2.

Table 2: Level of relative importance of the study items and variables and their corresponding calculation ranges

Level Relative importance	High	Medium	Low
Arithmetic mean	3.67-5.00	2.34-3.67	1-2.33

Second: Analytical Statistics:
- **Cronbach Alpha:** Used to identify the stability of study measures, where a value above 0.7 is considered an indicator of good stability.
- **Multiple Linear Regression:** Used to verify the effect of the independent variable dimensions on the dependent variable, which helps in determining the most influential and statistically significant dimensions.
- **Study tool stability test:**

The stability test of the study tool aims to verify the accuracy and objectivity of the study tool, the degree of coherence and consistency between paragraphs, and the ability to provide relatively stable answers. This test was conducted by applying Cronbach's alpha internal consistency coefficient (Cronbach(^,)^ Coefficient), and the level of stability is determined based on the Cronbach's alpha coefficient value, which is divided into three levels, as follows:

Table (3): Levels of stability of the study tool

Stability level	High	Medium	Low
Krombach value Alpha coefficient	Higher than 0.7	0.4 Less than 0.7	Less than 0.4

This measure indicates that the result is statistically acceptable if the Cronbach's alpha coefficient value ranges between (0.70) or greater, and the closer the coefficient value is to (1.00), the higher the stability of the study tool. The following table shows the results of the study tool stability test.

Table (4): Results of the study tool stability test

Axes	Dimensions	Number of items	Alpha value
Strategic human resource planning	Resource motivation	5	0.864
	Human Resource Training and Development	5	0.893
	All dimensions	10	0.940
	Crisis management	11	0.931
	All dimensions	16	0.965

The table shows the results of the reliability test of the study tool using Cronbach's alpha, which measures the internal consistency of the items within each dimension. Overall, the values generally indicate that the tool has good reliability in all dimensions of the study.

Table (5): Distribution of study sample individuals according to personal and functional data

Variables	Categories	Frequency	Percentage
Gender	Male	35	77.8
	Female	1	22.2
Age	Under 30	10	22.3
	30--under 40 years old	12	26.6
	40 to under 50 years old	20	44.4
	50 years and over	3	6.7
Academic qualification	Bachelor	35	77.8
	Postgraduate	10	22.2
Job level	Manager	25	55.5
	Deputy Director	20	44.5
Number of years of experience	Less than 5 years	8	17.8
	5 to less than 10 years	12	26.7
	10 to less than 15 years	20	44.4
	From 15 to less than 20 years	5	11
	20 years and above	---	---
	Total	**45**	**100.0**

- **Descriptive statistics:**

This section of the study aims to describe the opinions and attitudes of the study sample with regard to the items that measure the dimensions and variables of the study, and to determine their current status and the level of interest of respondents in the ministry. To achieve this, descriptive statistical methods were used, as follows:

Table (6): Level of relative importance of the study's items and variables and their corresponding calculation ranges

Level Relative importance	High	Medium	Low
Arithmetic mean	3.67-5.00	2.33-3.66	1-2.33

- **Study results:**

Description of the study sample's responses regarding strategic human resource planning.

This section aims to provide a detailed description of the study sample's responses regarding the extent to which the Libyan Ministry of Health practises strategic human resource planning. Strategic human resource planning is the independent variable in this study and has been divided into three main dimensions as follows:

First dimension: Human resource motivation

The results presented in Table (5) indicate that human resource motivation is highly valued by the study sample, with all items being rated as highly important.

Table (7): Description of human resource motivation characteristics in descending order

Significance level	Rank	Standard deviation	Arithmetic mean	Paragraph	Number
High	1	0.63	4.50	Incentives and rewards are granted fairly within the ministry	3
High	2	0.62	4.45	The Ministry relies on a flexible incentive system.	1
High	2	0.60	4.45	The ministry relies on clear methods to motivate employees.	2
High	4	0.73	4.39	There is diversity in the incentives and benefits offered to employees in the ministry.	5
High	5	0.83	4.18	The ministry offers meaningful and fair incentives compared to salaries.	4
High		0.55	4.39	Human resource motivation	

The highest-rated item was "Incentives and rewards are given fairly within the ministry" (arithmetic mean = 4.50) (standard deviation = 0.63), reflecting the effective role of strategic human resource planning in motivating human resources during crises.

The lowest-rated item was "The ministry grants meaningful and fair incentives compared to salaries" (arithmetic mean = 4.18) (standard deviation = 0.83). However, this item still falls within the high level of importance, confirming the positive role of human resource motivation in enhancing crisis management efficiency.

The average rating for human resource motivation was 4.39 with a standard deviation of 0.55, indicating a high level of agreement on the importance of human resource motivation in crisis management.

Second dimension: Training and development of human resources
The results presented in Table (6) indicate that training and development of human resources is highly valued by the study sample, as all items were rated as highly important.

Table (8): Description of human resource training and development characteristics in descending order

Significance level	Rank	Standard deviation	Arithmetic mean	Paragraph	Number
High	1	0.84	4.20	The Ministry regularly measures the effectiveness of training and development programmes.	2
High	2	0.80	4.19	Training programmes are updated in line with developments in the Ministry.	3
High	3	0.77	4.17	The tools used by the Ministry of Health in training ensure the application of acquired skills.	5
High	4	0.85	4.16	Training programmes are implemented to meet the needs of each employee in the ministry.	1
High	5	0.93	4.05	Ongoing training opportunities are available for employees to develop their skills periodically within the Ministry.	4
High		0.70	4.15	Human resources training and development	

The highest-rated item was "The ministry regularly measures the effectiveness of training and development programmes" (mean = 4.20) (standard deviation = 0.84), reflecting the prominent role of training and human resource development during crises.

The lowest-rated item was "Ongoing training opportunities are available for employees to develop their skills periodically in the ministry" (mean = 4.05) (standard deviation = 0.93). However, this item still falls within the high level of importance, confirming the significant benefit of training and human resource development.

The average for training and human resource development was 4.05 with a standard deviation of 0.93, indicating a high level of agreement on the effectiveness of such training and human resource development in crisis management.

Description of the study sample's responses regarding crisis management.
This is a detailed description of the study sample's responses regarding their opinions and practices related to crisis management. It also assesses their understanding and implementation of strategies in this area. Crisis management is the dependent variable in this study and has been divided into three main dimensions as follows:

First dimension: Pre-crisis stage -- preparedness
The results presented in Table (9) indicate that the characteristics of pre-crisis preparedness in crisis management are highly valued by the study sample, with all items being rated as highly important.

Table (9): Description of pre-crisis characteristics -- preparedness in descending order

Significance level	Rank	Standard deviation	Arithmetic mean	Paragraph	Number
High	1	0.61	4.55	Senior management at the ministry supports and takes an interest in monitoring and identifying crisis indicators.	1
High	2	0.66	4.48	Adequate and ready programmes and plans for crisis management are available in the ministry.	4
High	3	0.71	4.39	There are clear administrative instructions specifying how to deal with various crises in the ministry and the procedures for doing so.	3
High	4	0.79	4.35	Senior management surveys the internal and external work environment relevant to the ministry's work to identify indicators of a potential crisis.	2
High		0.54	4.44	**Pre-crisis -- preparedness**	

The highest-rated item was "Senior management in the ministry supports and is interested in monitoring and identifying crisis indicators" (mean = 4.55) (standard deviation = 0.61), highlighting the importance of comprehensive planning in enhancing crisis preparedness.

The lowest-rated item was "Senior management surveys the internal and external work environment relevant to the ministry's work to identify indicators of potential crises" (mean = 4.35) (standard deviation = 0.79). However, this item still falls within the high level of importance, indicating that crisis preparedness requires advance planning.

The arithmetic mean for the pre-crisis assessment -- preparedness = (4.44) with a standard deviation = (0.54), indicating positive agreement on the effectiveness of pre-crisis preparedness.

Second dimension: During the crisis -- response
The results presented in Table (10) indicate that the characteristics of the during-crisis phase -- response are highly valued by the study sample, with all items being rated as highly important.

Table (10): Description of characteristics during the crisis -- response in descending order

Significance level	Rank	Standard deviation	Arithmetic mean	Paragraph	Number
High	1	0.59	4.40	Rapid communication to ascertain the extent of damage caused by the crisis.	3
High	2	0.7	4.38	The crisis is controlled and its spread and duration are limited to an appropriate period of time.	1
High	3	0.69	4.36	Senior management responds promptly to contain the crisis within a short and appropriate period.	2
High	4	0.86	4.21	There is adequate capacity and speed in mobilising material and human resources to contain the crisis.	4
High		0.60	4.34	During the crisis -- response	

The highest rated item was "Communication is carried out quickly to ascertain the extent of damage caused by the crisis" (arithmetic mean = 4.40) (standard deviation = 0.59), highlighting the importance of response during a crisis.

The lowest-rated item was "There is adequate capacity and speed in mobilising material and human resources to contain the crisis" (arithmetic mean = 4.21) (standard deviation = 0.86). However, this item still falls within the high level of importance, indicating that the necessary material and human resources play an important role in enhancing the effectiveness of the response.

Overall, the arithmetic mean for the assessment of the crisis management phase during the crisis response was (4.34) with a standard deviation of (0.60), indicating positive agreement on the effectiveness of the response during crises.

Third dimension: Post-crisis phase

The results presented in Table (11) indicate that the characteristics of the post-crisis phase -- recovery and rehabilitation -- are highly valued by the study sample, with all items being rated as highly important.

Table (11): Description of post-crisis characteristics in descending order

Significance level	Rank	Standard deviation	Arithmetic mean	Paragraph	Number
High	1	0.66	4.33	Senior management draws lessons and conclusions from previous crises to improve future plans	2
High	2	0.67	4.30	Senior management at the ministry objectively evaluates plans, practices and decisions for dealing with similar crises in order to learn from them.	3
High	3	0.73	4.27	The necessary measures are being taken to resume normal activities at the ministry without delay after the crisis.	1
High		0.6	4.30	Post-crisis -- recovery and rehabilitation	

The highest-rated item was "Senior management draws lessons and conclusions from previous crises to improve future plans" (mean = 4.33) (standard deviation = 0.66), highlighting the importance of recovery and rehabilitation after a crisis.

On the other hand, the lowest-rated item was "The necessary measures are taken to resume normal activities in the ministry without any delay after the crisis" (mean = 4.27) (standard deviation = 0.73). However, this item still falls within the high level of importance, indicating that taking the necessary measures helps in recovery and rehabilitation after the crisis.

The arithmetic mean for the assessment of the crisis management phase during the crisis response was 4.30 with a standard deviation of 0.60, indicating positive agreement on recovery and rehabilitation after the crisis .

- **Results of the study hypothesis test:**

The study hypothesis addressing the impact of strategic human resource planning and its various dimensions on crisis management in the Ministry of Health was tested. This hypothesis is divided into two sub-hypotheses aimed at testing the impact of strategic human resource planning with its sub-dimensions (human resource motivation, human resource training) on crisis management. Statistical analysis (linear regression analysis) was used to determine whether these dimensions had a statistically significant impact on crisis management according to the specified significance level (0.05>a).

Table 12: Multiple regression analysis to identify the impact of strategic human resource planning in its dimensions (human resource motivation, human resource training and development) on crisis management in the Ministry of Health**.**

			Model validity test	T significance level	Calculated T value	Beta	Standard error	B	Dimensions
			Model Summary						
Correlation coefficient	Value	Value	Value						
R	R2 Adjusted	^(^(R^2^	(F)						
		^Sig.^							
0.886	0.782	0.785	239.009	0.000	4.142	0.282	0.066	0.275	Stimulus
				0.000	4.559	0.264	0.044	0.202	Training

- **Statistically significant at the level (0.05≥α) Table value (t) = (±1.96)**

The results in Table (12) show that the statistical value (F) for the impact of strategic human resource planning in its two dimensions on crisis management in the ministry was (239.009). and the coefficient of determination (R2) was (0.782) with a statistical significance of less than (0.05). The adjusted R2 value was (0782.), indicating the validity of the study model, given the impact of strategic human resource planning in its dimensions on crisis management in the Libyan Ministry of Health.

Table (12) shows that, based on the t-test values, the sub-variables related to strategic human resource planning (human resource motivation, training and development) have an impact on crisis management in the Libyan Ministry of Health, with calculated t-values of (4.142, 4.559, 8.426) respectively, which are significant values at a significance level of (0.05≥ α).

Discussion of results and recommendations

- ### Discussion of results:

First: Discussion of the results related to the study question: What are the levels of application of the combined dimensions of human resource strategies in the Ministry of Health?

The results of the study showed that the implementation of human resource strategies (human resource motivation, training and development) is high from the perspective of the study sample working in the Libyan Ministry of Health, as follows:

First: Level of implementation of human resource motivation in the Libyan Ministry of Health

The results of the study showed that the level of implementation of human resource motivation in the Libyan Ministry of Health is high. The responses of the study sample focused on the fact that "incentives and rewards are given fairly within the ministry at a high level, and the ministry also relies on a flexible incentive system that can adapt to the requirements and desires of employees." This result can be attributed to the fact that when human resources are motivated and incentives and rewards are offered to them, this enhances the level of commitment and effort exerted by employees and encourages them to improve their performance and work more effectively to achieve the ministry's objectives. Furthermore, when employees feel that their rewards and incentives are appropriate and fair in relation to their efforts, this is reflected in their satisfaction and job retention.Furthermore, the practice of a strategy of fairness and equality in motivating ministry employees is based on actual effort and achieves many ethical standards within the work environment, in addition to making them willing to work as a team.

Second: The level of implementation of human resource training and development in the Libyan Ministry of Health.

The results of the study show that human resource training and development in the Libyan Ministry of Health is of a high standard, with the responses of the study sample focusing on the fact that "the effectiveness of training and development programmes is measured regularly, and training programmes are updated in line with developments in the Ministry at a high level. This result may be attributed to the fact that the health sector in Libya is constantly evolving and there are ongoing aspirations for performance improvement. This allows for the identification of the strengths and weaknesses of employees, hence the role of training in raising the performance level of individuals working in the Ministry. Strategic planning for training enhances motivation and productivity at work. The results of the current study are consistent with the results of studies by Abu Mazen and Dhamah (2025), Ali Al-Shahrani (2012), Edvardsson & Durst (2021), and Adjei (2024). Adjei, 2024; Widaryanto & Sar, 2024).

Second: Discussion of the results related to the study question: What is the level of crisis management in the Ministry of Health?

The results of the study showed that crisis management in the Ministry of Health is at a high level from the perspective of the study sample's working individuals, and the dimensions of crisis management were also high, namely the pre-crisis stage ( ), the preparedness stage, the crisis stage -- response, and post-crisis. This result may indicate that those working in the Ministry, especially its senior management, have clear and important perceptions about dealing with crises before they occur and preparing for them in a way that ensures the success of the work and the emergence from crises without losses or damage that may occur, and maintaining the internal and external environment in good condition. This is where the role of developing advance plans and procedures in the ministry comes in, which helps to deal with the crisis effectively, whether it is a health crisis or a natural disaster. This is where advance preparation comes in, which enhances the speed of response and reduces chaos and confusion. From the researcher's point of view, this result can be attributed to the fact that rapid and accurate communication helps to gather the necessary information about the extent of the damage caused by the crisis and to understand its magnitude in order to be able to make the necessary decisions. Accurate and regular communication helps to reassure employees and the community, which enhances confidence in the ministry's ability to deal with the crisis. From the above, senior management can identify the strengths and weaknesses of the organisation's response. This analysis helps to improve future response plans, ensuring that the ministry is able to adapt to future crises more effectively and avoid repeating mistakes. If previous crises are not evaluated objectively, the same mistakes may be repeated in the future. Learning from past mistakes allows plans and systems to be modified to prevent these mistakes from recurring and reduce potential damage in the future. Continuous evaluation of crisis

plans and practices promotes a culture of continuous improvement within the ministry by learning from previous crises.

Senior management can improve institutional performance and develop more effective strategies for dealing with future crises.

- **Discussion of the study hypothesis:**

The results of the study showed a statistically significant effect at a significance level ($\alpha \leq 0.05$) for strategic human resource planning in its two dimensions on crisis management in the Ministry of Health. This is attributed to the motivation of human resources, training and development, all of which are important factors in laying a solid foundation for work in anticipation of crises and managing them properly in the ministry, and paying attention to key roles that would raise the level of performance of both employees through training and raising the level of professionalism and general education.

The results of the current study are consistent with those of studies by Ali Al-Shahrani (2012), Abu Mazen and Dhamah (2012), Edvardsson & Durst (2021), Adjei (2024), Widaryanto & Sar (2024).

Study recommendations

Based on the above findings, the researcher recommends the following

1. Intensify training courses to improve the skills of senior management on how to manage medical staff during crises.

2. Involving ministry employees in internal and external conferences related to crisis management.
3. Issuing awareness bulletins at the ministry, specifying how to deal with crises, and distributing them to various ministry employees.
4. Adopt a unified incentive system in the ministry based on good performance and outstanding achievements at work, whether at the individual or collective level.

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