



## THE IMPACT OF MANAGEMENT INFORMATION SYSTEM'S FEATURES ON CRISIS MANAGEMENT IN JORDANIAN COMMERCIAL BANKS (FIELD STUDY ON JORDANIAN COMMERCIAL BANKS IN THE NORTHERN SECTOR)



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### ABSTRACT

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Readiness and Prevention  
Damage Containment  
Reactivity  
Learning.

This study aims to explore the impact of management information system's (MIS) features (reliability degree on the system, the availability of computer devices, elasticity degree of the system, and the training programs) on crisis management in the Jordanian Commercial Banks (Northern Region), trying to build theoretical and practical frame for the effect of management information system in fulfilling innovations. And trying to clarify the impact of these features on crisis management. In addition to introduce suggestions and recommendations to the firms, and to the future researches in same topics. Eleven commercial banks have been selected, based on a random judgment sample, (78) respondents were drawn from main commercial bank (northern region) of different administrative levels, and all considered to be valid. The most important research findings that there is positive statistically significant influence among management information system features (reliability degree on the system, the availability of computers' devices, elasticity degree of the system, and the training programs) on crisis management. The study recommended that problems and constraints that might adversely affect the application of management information systems should be known in the future.

**Contribution/ Originality:** This study is one of very few studies which have investigated to provide a comprehensive and updated database on an ongoing business organizations, and to uses a system as experts when setting up crisis management plan, and to address the effects of the crisis and to restore their normal activity and Benefiting from previous crisis and draw lessons from them.

### 1. INTRODUCTION

It becomes necessary for all the firms to perform their daily operations and success in the world of business. Management information systems occupied wide position, because of its importance in all business sectors, and in all managerial levels. These systems are widely used in the strategies, operations, and tactics levels, and achieved a lot of benefits to the firms and users of those systems.

The openness that occurs in the world today, and the increased competition among business organizations, led to changes in the structure of organizations, and the basis of this change is based on a phrase "good decisions must be based on comprehensive and accurate information", and on a system that achieves that.

An effective information system facilitates the communication between different parties, organizations, and different countries, and the information system has led improvement and acceleration of the decision-making process, as well as improving and strengthens relations customers and suppliers relations. The availability and development of electronic tools have helped to achieve this and the efficiency of organizations in solving their problems, particularly in a complex and uncertain environment, can be improved and increased through the influential information system and appropriate use of it. An effective information system helps create an interactive network of managers and thus facilitates the communication process and leads to increased interest in the relevant problem and in a timely manner. Furthermore, a good information system leads to a change in the balance of power at the internal level of the organization as well as with suppliers, i.e. It affects the distribution of power among different organizational units [1].

**Management information systems (MIS):** It is a type of information designed to provide the decision makers with the information necessary to plan, and organize, lead and control the organization's activity, or to help them make decisions [2]. Crisis management also plays a key and effective role in leading organizations to survive and grow in the context of global competition, the Crisis management is not related to a particular management or productivity process, but it is an integrated process that includes all sections of organization (production and processes, marketing, etc.) to give an impression of the entire behavior of the organization [3].

Political, economic or natural crisis are a problems for institutions that seeking to grow and continue in the business world, and the crisis results from environmental changes that generate a degree of risk and threat that requires quick decisions to contain them, and needs proper planning to try to overcome the crisis or minimize its negative effects. The best that can be done in this regard is for administrators and workers to remain on constant alert and prepared, ready to do their best to cope with the crisis by training to deal with crisis by creating a crisis and using a simulation system commensurate with the requirements of dealing with the crisis, and this of course calls for an effective internal and external communication system based on knowledge and administrative information systems.

The term "Crisis Management" was first used in international political relations in 1962 when the Soviet missile crisis erupted on Cuban territory, which exacerbated relations between Moscow and Washington to the point where U.S. President John F. Kennedy was threatened with a third world war. But the crisis ended with Russian leader Khrushchev agreeing to dismantle the missiles in exchange for a US pledge not to invade Cuba. McNamara, Secretary of Defense of the United States, said that the era of (strategy) was over and a new era began, which we might have called the era of crisis management.

## 2. THE PROBLEM AND QUESTIONS OF THE STUDY

Individuals, societies and states face many crises that plague the future of their lives and sometimes threaten their entire existence, especially in our Arab societies, which lack infrastructure, from strategic plans, material and human possibilities to face those crises. Commercial banks operate in a highly complex and competitive environment and their success often depend on their ability to keep up with developments, which requires them to adapt to rapid environmental changes. The ability of the banks to monitor changes in the environment, which are often complex, unconfirmed, helps them adapt to this environment. The issues of how to deal with crisis become inevitable.

In order for banks to deal with crisis, they have to recognize the indicators of the crisis before it occurs, and in a timely manner, the information that banks receive is a tool to control their external environment. Therefore, the information system should have led to the provision of all management levels of information according to their specialties and that this information will be useful.

The lack of a proper information system to monitor changes in the environment may lead to frequent crisis, so the problem of this study is diminishing in knowing, how to use the effective management information systems in bank that dealing with the crises they are going through.

**General question:** What are the relationship between management information systems features (the degree of reliance on the system, the computers used, the degree of system flexibility, and training) response to crisis in Jordanian commercial banks?

### 3. THE IMPORTANCE OF THE STUDY

To identify the reality of applying the concept of crisis management by commercial banks in Jordan/ Northern Sector.

To identify the impact of the management information system's features (the degree of reliability of the system, the computers used, the degree of system flexibility and training) that facing crisis.

It deals with an important economic sectors (the commercial banking sector) that facing various crisis.

This study adds a theoretical dimension in crisis management in the commercial banking sectors.

### 4. THE OBJECTIVES OF THE STUDY

To identify the management information system's features in managing crisis and the levels of availability of those features in Jordanian commercial banks.

To identify the levels of accreditation by managers in commercial banks and scientific steps in managing crisis.

To identify the nature impact of the management information system's features in helping commercial banks in managing crisis they are going through.

### 5. HYPOTHESES OF THE STUDY

The main hypothesis: There is no statistically significant effect for the management information system's features (the degree of reliance on the system, the computers' devices, the degree of flexibility of the system, and training) in the ability of Jordanian commercial banks in managing crisis.

**Hypothesis 1:** *there is no statistically significant effect for the degree of reliability of the system in the ability of Jordanian commercial banks in managing crisis.*

**Hypothesis 2:** *There is no statistically significant effect for the computers' devices in the ability of Jordanian commercial banks in managing crisis.*

**Hypothesis 3:** *there is no statistically significant effect for the flexibility of the system in the ability of Jordanian commercial banks in managing crisis.*

**Hypothesis 4:** *There is no statistically significant effect for training in the ability of Jordanian commercial banks in managing crisis.*

### 6. PROCEDURAL DEFINITIONS

**Management information systems (MIS)** have been defined as a type of information system designed to provide the organization's administrators with information for planning, organization, leadership and control of the organization's activity or to assist them in decision-making [4].

**Crisis:** The final result of the accumulation of a combination of influences or a sudden malfunction affecting the main components of the system, and posing a clear and obvious threat to the survival of the organization or system itself.

**Jordanian Commercial Banks:** A facility whose main operations are to mobilize financial resources and money that are surplus to the needs of the public and institutions in the form of savings for the purpose of lending and employing by others in accordance with the rules and methods involved [5].

**Jordanian commercial banks:** are listed in the Central Bank and the Jordanian Securities Exchange and are described in [Appendix A](#).

## 7. THE METHODOLOGY OF THE STUDY

This study is a practical study on Jordanian commercial banks which is consistent with the analytical approach.

### 7.1. The Model of the Study

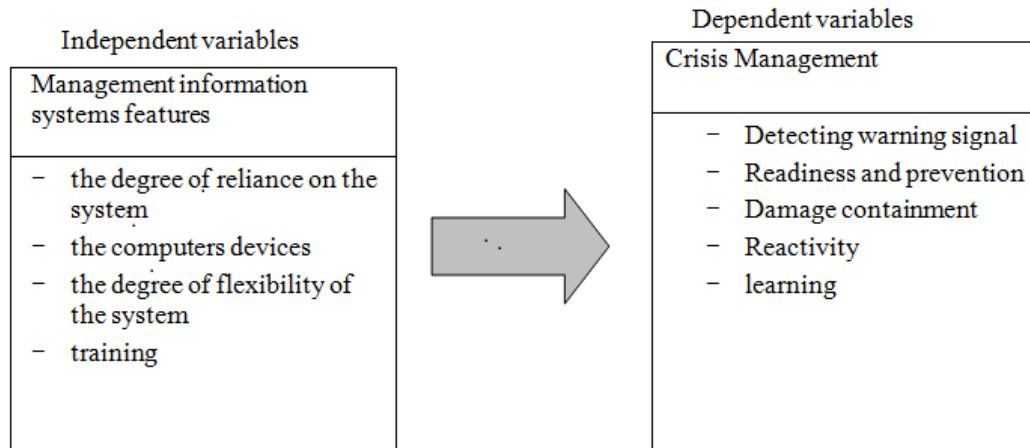


Figure-1. The model of the study.

Sources: Pearson and Mitroff [6].

### 7.2. The community of the Study

The community consists of all 11 commercial banks operating in Irbid (Northern Sector), out of a total of 34 branches operating [Appendix A](#), the inspection and analysis units consist of all 245 employees of those banks.

### 7.3. The Sample of the Study

A randomized judgmental sample were selected, which represented (78) workers of different sections in the banks, shown in [Table 1](#).

Table-1. The personal characteristics for the study sample members.

	Classification	Iteration	Percentage
type	Male	54	70%
	Female	24	30%
	total	78	100%
Age groups	20 year to less than 25 year	24	31.4%
	25 year to less than 30 year	8	8.6%
	30 year to less than 35 year	28	37.2%
	35 year to less than 40 year	7	8.5%
	more than 40 year	11	14.3%
	total	78	100%
Educational qualification	High school	7	8.6%
	Bachelor/Diploma	45	51.4%
	Graduate(high degree)	26	40%
	total	78	100%
Experience	Less than 5 years	35	47.1%
	5 years to less than 10	16	21.4%
	10 years to less than 15	11	14.3%
	15 year to less than 20	10	11.4%
	More than 20 year	6	0.7%
	total	78	100%

Source: Sekaran and Bougie [7].

For the age groups of the sample, the table shows that the percentage of the age group 20 to less than 25 years of age was 31.4%, and the age group 30 to less than 35 was 37.2%. This indicates that the majority of the sample members are between the ages of 20 and 35. This indicates that most of the employees who work at selected banks are young people. And these people are usually enthusiastic and strongly motivated in their jobs.

As for the educational qualification, the percentage of those holding a bachelor's and diploma about 51.4%, while the percentage of those with higher degrees was 40%. This indicates that most of the individuals who hold the first university degree are working at the banks.

In terms of the experience of working individuals, the percentage was 47.1% of individuals with less than 5 years of experience, while 7% only had experience of 20 years and more. This indicates that most of the individuals are new recruits and don't have long experience in the field of work, and therefore the competition for crisis management and the emergence of individuals working in those departments intensifies.

#### 7.4. The Tool of the Study

The researcher developed a special questionnaire to identify the effects of management information system's features in crisis management in the Jordanian commercial banks.

#### 7.5. The Honesty and Stability of the Tool

The Cronbach's Alpha coefficient was used through the SPSS-Version-10 statistical package for internal consistency, with the result (84.2%) This is an acceptable rate of stability, and Table 2 shows the internal consistency factor for all study variables.

Table-2. Cronbach Alpha Internal Consistency factor for all study variables.

The variable	Cronbach's Alpha coefficient
- Management information systems	0.821
- Crisis Management	0.870
- The degree of reliance on the system	0.791
- Computers devices	0.910
- The degree of flexibility of the system	0.883
- Training	0.871
- Detecting warning signal	0.915
- Preparedness and prevention	0.819
- Damage containment	0.713
- Reactivity	0.783
- Learning	0.802
All variables	<b>0.842</b>

Source: Sekaran and Bougie [7].

## 8. THE THEORETICAL FRAMEWORK

### 8.1. Management Information Systems

Information is one of the resources available to the manager, and therefore can be managed like any other resource, rely on such information has been increased, most of which is the interaction and the complexity of business and activities, as well as successive developments in computer technologies and applications.

#### 8.1.1. The Definitions of Information Systems Varied, Including

It is a computerized system that is able to integrate data from different sources in order to provide the necessary information to users with similar needs. It is a system dedicated to obtaining the formulation, adaptation, processing and processing of data as information and providing it to managers when they need it. The study of management information systems focuses on their uses in management and business [8].

Management information systems relate to planning for development, management and use of IT tools to help individuals accomplish all their tasks related to information processing and management, hence the delivery information technologies include all kinds of techniques that are used in administrative work to achieve their objectives in oversight, organization and decision-making.

Information systems are (a set of elements) and software or individuals (allowing the acquisition, processing of storage and transmission of information) [9].

It can also be defined: "On the one hand it is a set of procedures and documents that give useful information and help in the functions of management, and on the other hand the material and human means necessary to process, store and convert information with a view to good and correct exploitation" [10].

Through the first definition, we note that the information system is all the people who receive, use and transmit information through various typewriters, copier and calculators, recording, storing, arranging and sending information to the parties concerned.

### *8.1.2. Management Information Systems Objectives*

Al\_Najar and Malkawe [11] shows a set of objectives that Management Information Systems seeks to achieve, which are:

- a. Linking the organization's subsystems to each other in an integrated system that allows for the flow of data and information, thereby coordinating their activities.
- b. Help link the objectives of the subsystems to the organization and the overall objective of the organization, and thus contribute to achieving this goal.
- c. Supporting the decision-making process at all organizational levels by providing reports containing the necessary information for those decisions in a timely manner.
- d. Providing the necessary information for planning and control purposes in place, time and format.
- e. Controlling of the process of the circulation and preservation of data and information.
- f. Improving the organization's productivity in a number of ways, including accurately producing reports on the organization's routine operations, updating data and information, and predicting future problems.
- g. Developing the performance of organizations through the feedback they produce on the implementation of plans and projects.

### *8.1.3. The Role of Information Systems in Crisis Management*

Information systems play an important role in organizations by helping them prepare their strategic plan that enable them to carry out their various tasks, such as providing appropriate information, both individually, collectively and at the enterprise level.

Information systems can also contribute significantly to crisis management through [12].

- a. Conducting an environmental survey to understand opportunities and threats.
- b. Working to update and build a vision by linking the operations strategy to information systems.
- c. Encouraging creative thinking, which helps to enhance and improve the brainstorming process by allowing information sharing and easy sharing.
- d. Working to secure ideas to develop and find innovative solutions to crises.

## *8.2. The Concept of Crisis*

There are many different concepts of the crisis and one meaning, which through its characteristics can be recognized.

According to Maher [13], the crisis are a defect that materially affect the whole system and threaten the main assumptions underlying the system, which is the ultimate result of the accumulation of a set of influences or the

occurrence or sudden malfunction that affects the main components of the system and poses an explicit and clear threat to the survival of the organization or the system itself.

Simon, et al. [3] defined the crisis as a series of measures aimed at controlling a problem and reducing its aggravation so that it does not escape the lead to war.

And Sultan [14] defined it as a position characterized by two basic elements:

A. Threat: The parties involved in the crisis feel that they will not be able to obtain or maintain the values, Resources or objectives those are important to them.

B. Time pressure: The awareness of the parties involved in the crisis of the amount of time available to investigate the facts and take action before the onset of the occurrence or escalation of losses and the director's awareness of the time available to deal with the crisis is influenced by factors such as: complexity of the problem, level of diligence, and psychological pressure, if the problem was more complex, the manager's would be more psychological pressure, the greatest sense of time's pressure and the least degree of response to the crisis.

While Salama and Beauty [15] say: that the concept of crisis lies in how to overcome it with different scientific administrative tools and avoid its disadvantages and benefit from positive side. By trying to figure out the difference between:

a. The problem: it is an obstacle or barrier that prevents the individual from achieving it, and expresses an event that has evidence and evidence that warns of a gradual occurrence not surprisingly, which helps to reach the best solution among several possible solutions and the relationship between the problem and the crisis is closely related, the problem may be the cause of the crisis but it will not be the crisis itself.

b. Crisis: It is a sudden and unexpected event which leads to the difficulty of dealing with it and therefore the need to look for ways and ways to manage the situation in a way that reduces its effects and negative consequences and also is a temporary state of disorder and imbalance of organization characterized by the inadequacy of the individual in confronting them using methods of solving problems.

c. Disaster: One of the concepts of sticking to crises is a devastating situation that has already occurred, and has caused damage, whether material or intangible, or together, and disasters are the causes of crises, but it is not a crisis in itself and disaster may have natural causes that have nothing to do with human beings.

#### 8.2.1. Characteristics of the Crisis Fink [16]

- a. The violent surprise when it explodes.
- b. The source of the crisis represents a major turning point in successive events in the life of the institution.
- c. The crisis caused its beginning shock, and pressure, which weakens the possibility of rapid separation of its confrontation.
- d. Crisis is characterized by changes in relations between the members of the organization.
- e. The sudden escalation of the crisis leads to a high degree of uncertainty about the alternatives offered to face the conflicting events.
- f. The crisis threatens the stability of the institution and the components of the environment.

#### 8.2.2. Crisis Management Stages

Dealing with crisis is one of the management attention focuses, where dealing with crisis requires a special type of managers who have many skills, including courage, fortitude, emotional balance, creativity, ability to communicate, dialogue, and the formulation and drawing of the necessary techniques to deal with the crisis.

Most writers and researchers agreed on the five stages of crisis management Maher [13]:

**Stage 1:** Detection of Warning Signals.

It is represented by actions taken to reduce the causes of the crisis and reduce its risks, and this phase includes the early warning sensor that predicts the imminent occurrence of the crisis, and the early warning signals are a problem where managers receive many types of signals at the same time.

**Stage 2: Readiness and Prevention.**

They represent activities aimed at covering the potential and capabilities and training individuals and groups on how to deal with the crisis, and the foundation must have adequate preparations and methods for crisis prevention. In detecting weaknesses in the institution, treating them before they are exacerbated and difficult to treat

**Stage 3: Damage Containment.**

To reduce the damage caused by the crisis, and to stop the chain of effects resulting from the crisis, and contain the effects of the crisis and minimize losses, it is necessary to isolate the crisis to prevent it from spreading in the rest parts of the institution.

**Stage 4: Reactivity.**

The foundation must have long- and short-term plans to restore the situation before the crisis and restore activity levels, and this stage is a phase of rebalancing, requiring technical and administrative capabilities, great potential and financial support.

**Stage 5: Learning.**

The learning stage includes important lessons learned by the institution from its previous experiences as well as from the experiences of other institutions that are going through certain crises that the institution can go through, and we find a few institutions that are projecting: where the official works to cover his perception in the face of the crisis by focusing the spotlight on the defects of others and the shortcomings in their performance and often focuses on that he has warned them a lot of it.

*8.3. Previous Studies*

Hanna, et al. [17] entitled: The Role of Management Information Systems in Crisis Management. The aim of the study was to provide a theoretical and practical framework that tests the relationship between management information systems and crisis management and determine the role of management information systems in enhancing the capacity of organizations in the face of crisis, the study relied on a sample questionnaire of (44) managers. The results found a correlation and a moral effect between the two dimensions of the research.

Alsoudani and Altaany [18]: Role of Management Information Systems in Crisis charitable organizations in Jordan, case study.

The aim of this study is to provide an introductory presentation of the concept management information system and crisis in theoretical framework and to identify the degree of uses management information system in charitable organization in Jordan. A questionnaire was justified and developed by the researcher to measure uses management information system in charitable organization in Jordan based on previous studies was applied to (65) employees at charitable organization in Jordan. The study was using SPSS to analyses data. The results indicate that employees at charitable organization in Jordan there were a statistically significant relationship between uses of management information systems in the five stages of crisis (discovery of early warning signals, prevention phase, contain and limitation of harm phase, the restoration of activity and the learning phase) and its role in crisis management in charitable organizations in Jordan.

Al-Khashali and Al-Qutb [19] entitled: The effectiveness of management information systems and their impact on crisis management: a field study in Jordanian industrial companies. The study aimed to identify the effectiveness of management information systems in managing Jordanian industrial companies for the crises they are exposed to.



The researchers selected a sample of (16) industrial companies. The company has found an impact on the effectiveness of management information systems in managing industrial companies for the crises they face. The study also found a disparity in the effectiveness of management information systems at every stage of the management of these companies for the crises they are exposed to. The most influential elements were the scale of use and response to emerging changes, which had an impact on all stages of crisis management except the warning signal detection and learning phase.

Ghannam [20] entitled: "The role of information technology in crisis management among employees in the operations rooms of the security services of the Palestinian Ministry of Interior." The study aimed to identify the role of information technology in crisis management among members of the security services of the Palestinian Ministry of Interior and the extent of the awareness of workers about the concept of crises and their management through the use of scientific methodology, and to identify the real reality of information technology in the Ministry of Interior and its security agencies. The study found a relationship between the averages of management information systems and crisis management in terms of efficiency of operation and automation, and the absence of the effect of management information systems in terms of the effectiveness of control, organization and communication on crisis management.

Al Ammar [21]: The role of information technology and systems in crisis and disaster management. The study aimed to identify the main factors that help to deal with crises and disasters efficiently and effectively, such as an applied study on the Directorate General of Civil Defense in Riyadh, the study concluded that the use of administrative information systems leads to saving time, effort and speed, and that the existence of rules, systems and systems help to deal with crises and disasters efficiently and effectively. Through the review of previous studies it is clear that they agree in dealing with the subject of information systems, but they vary in the impact of information systems, as evidenced by the amount of attention that researchers have given to information systems and the characteristics of the systems and the factors that affect them, and it is also clear that each study started from a major problem different from the other, during which each researcher tried to reach results, due to different interests. Some studies have agreed with the current study in its theme, information systems, although the current study dealt with the role of information systems in crisis management, which helps banks to maintain their presence in the market. The current study also features a focus on the banking sector in Irbid under current difficult economic conditions.

## 9. HYPOTHESES TESTING, RESULTS, AND RECOMMENDATIONS

First: The degree of reliance on the system.

The results presented in Table 3 show that the arithmetic average for all paragraphs (4.02) and standard deviation (0.86), indicating that the Jordanian bank workers are positive for the paragraphs that measured the degree of reliability of the system, as all averages of phrases were higher than the standard average (3). The paragraph "The system provides early warning means for the crisis" came first with arithmetic average (4.41), and the paragraph "the system Compares the current information among previous stored crises" with a arithmetic average (3.43), and the standard deviation values of all paragraphs came Converging and did not indicate differences in the opinions of the study sample.

Second: Computers' devices:

The results presented in Table 4 show that the arithmetic average for all paragraphs (4.25) and the standard deviation (0.90), which indicating that the Jordanian bank workers are positive for the paragraphs that measured the computers' devices, as all averages of phrases were higher than the standard average (3). The paragraph "Computers used help quickly retrieve information " came in first place with arithmetic average (4.80), and the paragraph "The computer contributes to the speed of selection of alternatives" in the last place with a mathematical

average (3.75), and the standard deviation values of all paragraphs came Converging and did not indicate differences in the opinions of the study sample.

**Table-3.** The degree of reliance on the system.

Paragraphs	Arithmetic Average	Standard Deviation
the system compares The current information among previous stored crises	3.43	0.88
The system provides early warning means for the crisis	4.41	0.93
The system is relied upon to retrieve information in a timely manner.	4.11	0.77
The bank has an effective database that can be easily consulted	4.01	0.84
The system contains special programs in analysis and statistics	4.27	0.90
The current information system is developing possible alternatives to resolving the crisis	3.87	0.84
Arithmetic average and standard deviation of all paragraphs	4.02	0.86

Source: Sekaran and Bougie [7].

**Table-4.** Computer devices.

Paragraphs	Arithmetic Average	Standard Deviation
The Bank uses computers that are consistent with the global accounting system.	3.85	0.82
The bank uses modern computers	4.55	0.95
Computers feature automatic backup	4.49	0.89
The computer contributes to the speed of selection of alternatives	3.75	0.87
The computer you use is connected to a central local computer network	4.11	0.91
Computers used help quickly retrieve information	4.80	0.93
Arithmetic average and standard deviation of all paragraphs	4.25	0.90

Source: Sekaran and Bougie [7].

**Third:** the degree of flexibility of the system: the degree of modification of the system in accordance with the latest developments. From the results presented in Table 5, we see that the arithmetic average for all paragraphs (4.01) and the standard deviation (0.84), indicating that the Jordanian bank workers are positive for the paragraphs that measures the system flexibility, as all averages of phrases were higher than the standard average (3). The paragraph "the system allows to use different computer applications" came first with a arithmetic average (4.70), and paragraph "the necessary adjustments to the system can be made to meet the developments" with arithmetic average (3.63), and the standard deviation values of all paragraphs came Converging and did not indicate differences in the opinions of the study sample.

**Table-5.** System Flexibility.

paragraphs	Arithmetic Average	Standard deviation
The system allows the use of different computer applications	4.70	0.89
The system is developing possible alternatives to resolving the crisis.	4.25	0.83
The system allows employees to participate in decision-making	3.75	0.74
The necessary adjustments to the system can be made to meet the developments.	3.63	0.91
The system allows the introduction of all information in all areas of technology	3.95	0.85
Arithmetic average and standard deviation of all paragraphs	4.01	0.84

Source: Sekaran and Bougie [7].

**Fourth: Training**

From the results presented in Table 6, we see that the arithmetic average for all paragraphs (4.49) and the standard deviation (0.87), which shows that the Jordanian bank workers are positive for the paragraphs that measures training, as all averages of phrases were higher than the standard average (3). The paragraph "Training contributes to the development of the capabilities of employees to work on the bank's program", ranked first with an average calculation (4.88), and the paragraph "Training on the information system done within the workplace" in the last place with a mathematical average (3.75), and the values of standard deviation of all paragraphs came Converging and did not indicate differences in the opinions of the study sample.

**Table-6. Training.**

Paragraphs	Arithmetic Average	Standard Deviation
Training on the information system done within the workplace	3.75	0.85
The bank provides adequate training to deal with computers	4.45	0.95
The Bank is working to develop the capabilities of the crisis team.	4.65	0.79
The training contributes to the development of the capabilities of employees to work on the bank's program.	4.88	0.87
I have no difficulty in applying the working methods i have been trained in.	4.72	0.87
Arithmetic average and standard deviation of all paragraphs	4.49	0.87

Source: Sekaran and Bougie [7].

**9.1. Hypothesis Testing**

The researcher used the a (NOVA) analysis to test the hypotheses of the study, by selecting (P), where the hypothesis is accepted if the calculated (P) value is less than the p-value of the scheduled, and rejects the hypothesis if the calculated (P) value is greater than the p- value of the scheduled. And the coefficient test. The following are the results of the hypotheses test.

**9.1.1. The Main Hypothesis**

There is no statistically significant effect for the management information system's features (the degree of reliance on the system, the computers' devices, the degree of flexibility of the system, and training) in the ability of Jordanian commercial banks to managing crisis.

**Table-7a. Coefficient analysis of the main hypothesis.**

Model	R	R square	Adjust R square	Std. error of the estimate
1	0.910a	0.613	0.730	0.3201

Note: a. constant: crisis management b. variable: MIS features

**Table-7b. Results of the main hypothesis test.**

	Sum of Squares	df	Mean square	F	Sig.
Between Groups	37.446	24	1.415	615.45	.000
Within groups	119.	54	001.		
Total	37.331	78			

Source: Sekaran and Bougie [7].

Table 7a showing that the (coefficient) was (0.613) and that the management information systems features were interpreted by (73%) of the disparity in crisis management. It is also found that in Table 7b the calculated value of (P) was 615.45, which is greater than the scheduled (P) value of 4.00 at a degree of confidence (0.95%) and moral (0.05>a), where it was found that there is a statistical indication for the features of the management information systems on the crisis management in Jordanian commercial.

### 9.1.2. The First Hypothesis

There is no statistically significant effect for the degree of reliance on the system in the ability of Jordanian commercial banks to managing crisis.

**Table-8a.** Coefficient analysis of the first hypothesis.

Model	R	R square	Adjust R square	Std. error of the estimate
1	0.799a	0.803	0.861	0.4523

Note: a. constant : crisis management b.variable: the degree of reliance on the system.

**Table-8b.** Results of the first hypothesis.

	Sum of Squares	df	Mean square	F	Sig.
Between Groups	36.345	17	3.442	243.000	.000
Within groups	801.	53	.015		
Total	36.937	78			

Source: Sekaran and Bougie [7].

Table 8a showing that the (coefficient) was (0.803) and this means that the degree of reliance on the system has been interpreted by (86%) From the variation in crisis management, the result in Table 8b indicate that the calculated (P) value was 243,000 and is greater than the (P) scheduled value of 4.00 at a confidence score (0.95%). According to this finding, I reject the first hypothesis. In other words, there is a statistically significant influence for the degree of reliance on the system on the crisis management in Jordanian commercial banks.

### 9.1.3. The Second Hypothesis

There is no statistically significant effect for the computers' devices in the ability of Jordanian commercial banks to managing crisis.

**Table-9a.** Coefficient analysis of the second hypothesis.

Model	R	R square	Adjust R square	Std. error of the estimate
1	0.750a	0.711	0.651	0.3353

Note: a. constant : crisis management b. variable: computers' devices.

**Table-9b.** Results of second hypothesis.

	Sum of Squares	df	Mean square	F	Sig.
Between Groups	36.910	13	2.780	161.712	.000
Within groups	1.427	65	.022		
Total	35.487	78			

Source: Sekaran and Bougie [7].

Table 9a showing that the (coefficient) was 0.711, which means that a computers device has been interpreted (65%) From the variation in crisis management, the results in Table 9b indicate that the computerized (P) value was 161.712 and is greater than the 4.00 (p) table value at a confidence score (0.95%). According to this finding, I reject the second hypothesis. In other words, there is a statistically significant influence for the computers' devices on the crisis management in Jordanian commercial banks.

### 9.1.4. The Third Hypothesis

There is no statistically significant effect for the degree of flexibility of the system in the ability of Jordanian commercial banks to managing crisis.

**Table-10a.** Analysis of the coefficient of the third hypothesis.

Model	R	R square	Adjust R square	Std. error of the estimate
1	0.743a	0.670	0.690	0.3461

Note: a. constant : crisis management b. variable: flexibility of the system.

**Table-10b.** Results of third hypothesis.

	Sum of Squares	df	Mean square	F	Sig.
Between Groups	37.167	15	4.125	161.712	.000
Within groups	1.229	63	.019		
Total	37.413	78			

Source: Sekaran and Bougie [7].

Table 10a showing that the (coefficient) was 0.670, which means that the flexibility of the system has been interpreted by (69%) From the variation in crisis management, the results in Table 10b indicate that the calculated (P) value was 191.645 and is greater than the (P) scheduled value of 4.00 at a confidence score (0.95%) And moral ( $\alpha < 0.05$ ). According to this finding, I reject the third hypothesis. In other words, there is a statistically significant influence for the degree of flexibility of the system on crisis management in Jordanian commercial banks.

### 9.1.5. The fourth Hypothesis

There is no statistically significant effect for training in the ability of Jordanian commercial banks in managing crisis.

**Table-11a.** Coefficient analysis of the fourth hypothesis.

Model	R	R square	Adjust R square	Std. error of the estimate
1	0.882a	0.610	0.591	0.29633

Note: a. constant : crisis management b. variable: Training.

**Table-11b.** Results of fourth hypothesis.

	Sum of Squares	df	Mean square	F	Sig.
Between Groups	35.923	12	3.738	169.121	.000
Within groups	1.143	66	.023		
Total	36.176	78			

Source: Sekaran and Bougie [7].

Table 11a showing that the (coefficient) was 0.610, which means that the training was interpreted by (59%) From the variation in crisis management where the results in Table 11b indicate that the calculated value of (P) was 169.121 which is greater than the (P) scheduled value of 4.00 at a confidence score (0.95%) and moral ( $\alpha < 0.05$ ). According to this finding, I reject the fourth hypothesis. In other words, there is a statistically significant influence for training on crisis management in Jordanian commercial banks.

## 9.2. Results

- 1) The results of the study generally showed a statistically significant influence for management information system's features (the degree of reliance on the system, the computers' devices, the degree of flexibility of the system, and training) on crisis management.
- 2) The results of the study showed a statistically significant influence for the degree of reliance on the system in management of crisis. Where the nature of the bank's work depends on systems, and gives priority to early warning means, and the Banks adopts special programs in statistical analysis, further more the current information system compares between previous crises stored, which enhances and helps works on the good management of crises among workers.
- 3) The results of the study showed a statistically significant influence for computers' devices and their role in crisis management, and the computers devices used help in the speed of retrieving information, the

members of the sample believe that the banks uses a modern computer devices that fit the nature of work, and that banks are constantly updating computers' devices in to cope with the variables in the changing working environment. It therefore provides with the infrastructure to enable effective crisis management.

- 4) The results of the study showed a statistically significant influence for the degree of flexibility of the system and its role in crisis management, and the members of the sample believe that the system used in the bank is flexible. The necessary adjustments to the characteristics of the programs used enable to cope with developments, and could be easily made. The bank's computer systems are also in line with business requirements. The system allows the use of different computer applications, which enhances and supports knowledge sharing among workers and motivates them to manage the crisis effectively.
- 5) The results of the study showed a statistical significant influence for training and its role in crisis management, and showed that the training contributes to the development of the capabilities of the bank's employees. The Banks are opening the way for employees to attend external training courses, and they have no difficulty in applying the working methods they have been trained, thus creating a sense of competition and providing better and increasing their ability to manage the crisis.

### 9.3. Recommendations

- 1) The need to know the problems and constraints that may negatively affect the application of management information systems in the future.
- 2) The need to establish and design management information systems in banks that provide the needs of employee's information in a timely manner and help to carry out the managerial processes to the fullest.
- 3) Training of employees on the information system outside the workplace.
- 4) Allowing more participation in decision-making.

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Appendix-(A). Names of the banks surveyed.

Number of branches in the Northern region	Names of the banks surveyed
5	Arab bank
6	Housing bank for trade and finance
3	Jordan ahli bank
6	Bank of Jordan
4	Cairo Amman bank
3	Jordan Kuwait bank
2	Arab Jordan Investment bank
2	Jordan Commercial bank
1	Societe generale de banque
1	Citibank
1	Capital bank of Jordan

Source: Central Bank of Jordan.

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