THE STRUCTURE OF MANAGEMENT INFORMATION SYSTEM AND ITS IMPACT ON THE MANAGEMENT OF THE CORONA CRISIS IN JORDANIAN UNIVERSITIES

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ARTICLE INFO

ABSTRACT

Purpose: This paper aims to identify the impact of structuring management information systems in managing the Corona crisis in Jordanian universities.

Theoretical Framework: This paper discusses the impact of structuring management information systems in Jordanian universities in managing the Corona crisis. In addition, how has the organizational and administrative structure of Jordanian universities impacted the management of the Corona crisis? and the role of technical structuring in Jordanian university crisis management?

Design/methodology/approach: The population of this study include all public and private Jordanian universities, and the sample consisted of (384) respondents from the deans of academic faculties, heads of departments, and members of the teaching staff in these universities, this paper considered one of the field research in which the researcher followed the descriptive analytical method, The data were analyzed using the statistical package for the social sciences program, and the hypotheses were tested using arithmetic means, standard deviation, and multiple and simple linear regression analysis.

Findings: The results showed a statistically significant effect of the elements of the structuring of management information systems (organizational, administrative and technical structuring) in managing the Corona crisis in Jordanian universities, and it was found that the universities responded immediately to contain the Corona crisis by the way of distributing tasks in a short period when it occurs, and as periodic meetings were held to prepare to deal with the Corona crisis.

Research, Practical & Social implications: The structuring of management information systems plays a major role in the growth and development of the global economy. Therefore, management information systems and its various tools have become the mainstay and technical base for advancement in the field of e-business, telecommunications, e-commerce, and e-government.

Originality/value: This study sheds light on the degree to which Jordanian private universities (student community) keep up with contemporary administrative systems, concepts, and models, in particular with regard to the impact of structuring management information systems in managing the Corona crisis in Jordanian private universities, which are regarded as one of the interdisciplinary research centers in the world.

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A ESTRUTURA DO SISTEMA DE INFORMAÇÃO DE GESTÃO E SEU IMPACTO NA GESTÃO DA CRISE DA COROA NAS UNIVERSIDADES JORDANAS

RESUMO

Objetivo: Este documento visa identificar o impacto da estruturação dos sistemas de informação de gestão na gestão da crise do Corona nas universidades jordanas.

Estrutura Teórica: Este artigo discute o impacto da estruturação dos sistemas de informação de gerenciamento em universidades jordanianas na gestão da crise de Corona. Além disso, como a estrutura organizacional e administrativa das universidades jordanas afetou a gestão da crise da Corona? e o papel da estruturação técnica na gestão de crises universitárias jordanas?

Design/metodologia/abordagem: A população deste estudo inclui todas as universidades públicas e privadas jordanianas, e a amostra consistiu de (384) entrevistados dos reitores de faculdades acadêmicas, chefes de departamentos e membros do corpo docente nessas universidades, este artigo considerado uma das pesquisas de campo em que o pesquisador seguiu o método analítico descritivo, Os dados foram analisados usando o pacote estatístico para o programa de ciências sociais, e as hipóteses foram testadas usando médias aritméticas, desvio padrão e análise de regressão linear múltipla e simples.

Constatações: Os resultados mostraram um efeito estatisticamente significativo dos elementos da estruturação dos sistemas de informação de gestão (estruturação organizacional, administrativa e técnica) na gestão da crise da Corona nas universidades jordanianas, e constatou-se que as universidades responderam imediatamente para conter a crise da Corona através da distribuição de tarefas em um curto período quando ocorre, e como reuniões periódicas foram realizadas para se preparar para lidar com a crise da Corona.

Investigação, implicações práticas e sociais: A estruturação dos sistemas de informação de gestão desempenha um papel importante no crescimento e desenvolvimento da economia global. Portanto, os sistemas de informações de gerenciamento e suas várias ferramentas tornaram-se o esteio e a base técnica para o avanço no campo do e-business, telecomunicações, e-commerce e e-government.

Originalidade/valor: Este estudo evidencia o grau em que as universidades privadas jordanianas (comunidade estudantil) acompanham os sistemas administrativos, conceitos e modelos contemporâneos, em particular no que diz respeito ao impacto da estruturação de sistemas de informação de gestão na gestão da crise do Corona em universidades privadas jordanianas, que são consideradas um dos centros de pesquisa interdisciplinares do mundo.

Palavras-chave: Gestão Estruturante, Sistemas de Informação, Crise de Corona, Estrutura Organizacional e Administrativa, Universidades Jordanianas.

LA ESTRUCTURA DEL SISTEMA DE INFORMACIÓN DE GESTIÓN Y SU IMPACTO EN LA GESTIÓN DE LA CRISIS DE CORONA EN LAS UNIVERSIDADES JORDANAS

RESUMEN

Objetivo: Identificar el impacto de la estructuración de sistemas de información de gestión en la gestión de la crisis de Corona en universidades jordanas.

Marco teórico: Este artículo discute el impacto de estructurar los sistemas de información de gestión en las universidades jordanas en la gestión de la crisis de Corona. Además, ¿cómo ha impactado la estructura organizativa y administrativa de las universidades jordanas en la gestión de la crisis de Corona y el papel de la estructuración técnica en la gestión de la crisis universitaria jordana?

Diseño/metodología/enfoque: La población de este estudio incluye todas las universidades jordanas públicas y privadas, y la muestra estuvo conformada por (384) encuestados de los decanos de facultades académicas, jefes de departamentos y miembros del personal docente de estas universidades, este trabajo consideró una de las investigaciones de campo en las que el investigador siguió el método analítico descriptivo, Los datos fueron analizados utilizando el paquete estadístico para el programa de ciencias sociales, y las hipótesis fueron probadas utilizando medios aritméticos, desviación estándar, y análisis de regresión lineal múltiple y simple.

Hallazgos: Los resultados mostraron un efecto estadísticamente significativo de los elementos de la estructuración de los sistemas de información de gestión (estructuración organizacional, administrativa y técnica) en la gestión de la crisis de Corona en las universidades jordanas, y se encontró que las universidades respondieron inmediatamente para contener la crisis de Corona mediante la distribución de tareas en un corto período cuando se produce, y como reuniones periódicas se realizaron para prepararse para hacer frente a la crisis de Corona.

Investigación, implicaciones prácticas y sociales: La estructuración de los sistemas de información de gestión desempeña un papel importante en el crecimiento y desarrollo de la economía mundial. Por consiguiente, los sistemas de información de gestión y sus diversos instrumentos se han convertido en la base fundamental y técnica para el avance en las esferas del comercio electrónico, las telecomunicaciones, el comercio electrónico y el gobierno electrónico.

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Originalidad/valor: Este estudio arroja luz sobre el grado en que las universidades privadas jordanas (comunidad estudiantil) se mantienen al día con los sistemas, conceptos y modelos administrativos contemporáneos, en particular con respecto al impacto de estructurar sistemas de información de gestión en la gestión de la crisis de Corona en las universidades privadas jordanas, que son consideradas como uno de los centros de investigación interdisciplinarios en el mundo.

Palabras clave: Gestión Estructurante, Sistemas de Información, Crisis Corona, Estructura Organizacional y Administrativa, Universidades Jordanas.

INTRODUCTION

At the present time, the world is witnessing rapid technological development and a revolution in the field of communications and information technology, and most organizations have been quick to adopt this technology. Modern administrative approaches have shown that organizations are nothing but an open system that constantly interacts with the surrounding environment (Jawad, 2015, p. 16).

MIS and its various tools have become the main pillar and technical base for advancement in the field of e-business, communications, e-commerce, and e-government. MIS is necessary for the survival and prosperity of organizations, as it helps reshape jobs, streamline work in them, and secure a number of alternatives and solutions to problems. Which organizations are exposed to, so they play an important role in the growth and development of the global economy (Kandalji and Al-Janabi, 2015, p. 38; Al-Zaqeba et al., 2018). As a result of the instability in the environment of business organizations, the need arose to restructure an administrative information system that ensures the flow of information and electronic services from its various sources to its applicants with ease and ease. Many business organizations today are working to build new management information systems in order to improve their work. A radical restructuring of operations and many organizations are looking for new, advanced, efficient and effective management concepts and methods in order to maintain their survival and continuity (Al-Zahir, 2019, p. 32; Supriyanto et al., 2023).

With the overlapping of organizational relations at various levels inside and outside business organizations, the need for effective management of the crises faced by business organizations and their efficient management has increased, whether before the crisis occurs, during the crisis or after the completion of the treatment of the crisis, administrators and employees, especially when facing crises, to increase the ability to face them. Howevre, management information systems contribute to the access of organizations of all kinds to a solution to the crises they face in light of the complexity of the work environment, the overlapping of its vocabulary and the intensification of competition among them. There have

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been many crises facing business organizations in various sectors, regardless of the type of crisis, whether political, economic, social or financial (Al-Zaqeba & AL-Rashdan, 2020a). Structuring management information systems plays a major role in the growth and development of the global economy, so these systems and their various tools have become the mainstay and technical base for advancement in the field of e-business, telecommunications, e-commerce, and e-government (Stair & Reynolds, 2018; Al-Zaqeba et al., 2018b).

Crisis management helps organizations reach a solution to the crises they face in light of the complexity of the work environment, the overlapping of its vocabulary and the intensification of competition among them. The crises facing business organizations in various sectors abounded, regardless of the type of crisis, whether political, economic, social or financial. Jordanian universities are considered one of the institutions that faced crises at different stages of their work, whether internal or external crises, and because of the importance of the higher education sector and the role that universities play in development and community awareness, this study came to identify the impact of structuring management information systems in managing the Corona crisis This was done through a field study in Jordanian universities (Alzaqebah et al., 2018a; Supriyanto et al., 2023).

The problem of this paper lies in the extent to which Jordanian universities are able to deal with the crises they encounter, especially in light of contemporary environmental and technological changes. However, the effective and successful management of management information systems may be one of the enhancers of the success of crisis management, and this in turn contributed to highlighting the need to shed light on this important aspect highlighted by previous studies for its role in influencing crisis management independently of others, as previous studies lacked studies linking each of the Management information systems and the management of the Corona crisis, which requires conducting studies to find out about this issue in Jordanian universities.

Therefore, this study will attempt to answer the following main question: Is there an impact of structuring management information systems in managing the Corona crisis in Jordanian universities? The following sub-questions are:

The first question: Is there an impact of the organizational and administrative structure in managing the Corona crisis in Jordanian universities?

The second question: Is there an impact of technical structuring in managing the Corona crisis in Jordanian universities?

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LITERATURE REVIEW

Business organizations face many administrative challenges, including the emergence of so-called digital organizations that perform and exercise their functions and activities electronically, and in order for these organizations to shift towards that, they must realize management information systems. This transformation requires a new administrative mentality and a new awareness of this new situation because these organizations need to provide and adopt some new administrative procedures and designs and to find an advanced Internet model required by the process of restructuring these systems (Kandalji and Al-Janabi, 2015, p. 127).

Management Information Systems Architecture

Management information systems are a powerful tool for organizational and managerial change, thus enabling organizations to restructure, design, and scope, strong relationships, work flows, products, and services. Among the regulatory changes brought about by information technology are, for example, the World Wide Web and laptop computers, which led to the expansion of work globally, and lower transaction costs. It also led to the emergence of what is known as virtual organizations, as work is no longer linked to the geographical location of the organization, knowledge and information can be provided from anywhere and at any time, and work has become more possible (Laudon & Laudon, 2014, p. 382; Al-Zaqeba & AL-Rashdan, 2020).

The process of building a new management information system is one of the types of organizational, administrative, and technical change in organizations, which is usually part of the process of administrative restructuring of organizations, so whoever builds a management information system must understand how it affects the organization as a whole, and also know what the system will change. In the organization, and how much the organization needs to change, organizational and administrative changes include training of managers and employees, attracting expertise, and changes in management practices (Alter, 2018).

The structure of management information systems is based on the development of an administrative strategy for business, functions, and activities of organizations, and management information systems are used to create a workflow diagram for organizations and the flow of information in them, to smoothly manage information, human resources, and various sources with the aim of providing services easily and faster. Management information systems provide the information necessary to take the decision focuses on improving and enhancing business functions in general (Al-Zaher, 2019, p. 32).

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It can be said that the processes of structuring management information systems are concerned with improving the efficiency and skills of human resources in a way that prepares them for a degree of adaptation to new changes, in a way that guarantees a high level of productivity and assumes their responsibility to improve performance through the integration and coordination of all work associated with one department, then grouping the departments into departments , and finally employing them to achieve structuring in management information systems, which includes, in addition to human resources, organizational procedures, organizational structure, organizational culture, and technology to achieve future goals and plans (Penpokai et al., 2023).

The structuring of information systems is defined as a process of organization building that focuses on improving performance and getting rid of restrictions that impede the interaction process between the variables that are related to the management of the organization, by making effective radical changes in the prevailing administrative conditions, methods, and concepts and changing tasks, functions, and activities as a result of merging some of them or adding or deleting some of them, as a result of which there is a decrease in employment and a reduction in the size of the organization in order to increase its ability to adapt and respond to the changes and crises that occur in the environment (Abu Naem, 2018, p. 2).

Based on the foregoing, the researcher believes that the structure of management information systems is to build and develop a flexible administrative and technical information system in Jordanian universities, so that it is able to interact with crises, environmental changes, and steady technological developments, and to focus on an optimal distribution of activities and jobs at various administrative levels and on modern technology and communication networks in order to provide better educational services.

Therefore, the awareness of the organizational and administrative elements of management information systems in general and the technical elements provided by the culture of dealing with computers and its accessories such as devices, equipment, software, communications, networks and others is considered one of the basic matters in the field of structuring these systems that allow universities to implement their procedures and crystallize their activities at all times in all departments and departments, and that By structuring the elements included in management information systems, which are:

Organizational and Administrative Structure

This focuses on the gradual change in administrative systems, units and departments, activities and functions, and results in either the creation or merging of some units and departments, or the cancellation, change or deletion of jobs and activities. This is as a result of changes occurring in the environment of the organization, and the change is in various types Functional information systems are used, such as human resources information systems, production and operations information systems, finance and accounting information systems, marketing information systems (Al-Samarrai and Al-Zoubi, 2018).

Technical Structure

Technical structuring facilitates the development of electronic services within different organizations in a coalition, where the development program defines the technical structuring standards and infrastructure necessary to launch electronic services in a coordinated manner among organizations and beneficiaries of their services in a way that helps them implement their own plans and launch their electronic services more effectively (O' Brien, 2017).

The technical structure constitutes the unified framework for the application of the various types of transactions. The components of the information system in the organization, including hardware, software, databases, networks, technical support teams, and other components that contribute to the interdependence of functions and activities in the units and departments of the organization electronically, which leads to the implementation of various types of transactions and the exchange of information among themselves to achieve the goals of technical structuring by setting the necessary standards to facilitate interoperability, benefit from common services, and invest in infrastructure and technical designs to save costs (Al-Hamidi et al., 2019).

Managing the Corona Crisis in Jordanian Universities

Technical structuring facilitates the development of electronic services within different organizations in a coalition, where the development program defines the technical structuring standards and infrastructure necessary to launch electronic services in a coordinated manner among organizations and beneficiaries of their services in a way that helps them implement their own plans and launch their electronic services more effectively (O' Brien, 2017).

Organizations work in an environment characterized by movement, change, and cultural and technological diversity. Therefore, they are exposed to many complex risks and crises both

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internally and externally, and they have causes and consequences that differ from one organization to another depending on the nature and privacy of their work, especially since the large size of business organizations and the overlap of relationships inside and outside them led to the intensification of The need for effective management of management information systems enhances the ability to address crises faced by business organizations and manage them efficiently, whether before the crisis occurs, during the crisis, or after the completion of the treatment of the crisis. The occurrence of the crisis transmits warning signals of its imminence, then the crisis phase, and finally the post-crisis phase (Hawash, 2009, p. 199).

This has become imperative for organizations in general to respond to these crises with a clear vision that enables them to address them and benefit from them in the future. This is done by optimizing the use of their various resources, including management information systems, on the grounds that they are a strategic knowledge resource that should be given the importance they deserve, no less than their interest in tangible assets. Dealing with crises requires quick thinking about several alternatives to options, provided that innovation and flexibility are the mainstays in dealing with the crisis or making the appropriate decision about it and trying to control it to avoid its negatives and take advantage of its positives (Al-Khashali and Al-Qutb, 2007).

The effective and successful management of management information systems may be one of the enhancers of the success of crisis management, and the process of organized scientific planning, and good preparation to confront and manage potential crises that threaten the organization are among the necessary factors that help protect it, as crisis management does not need the skill of the decision maker alone, but there must be institutional thought at all administrative and executive levels at the same time in order to ensure the speed and effectiveness of the decision in light of time constraints (Ahmed, 2018, p. 41).

All organizations are subject to threats that threaten their survival and continuity, and their inability to deal with these crises is often due to the lack of appropriate technology. But even if it is available, the reason may be the inability to take advantage of it because there are many problems when confronted, and manifest Here is the importance of crisis planning, considering that good planning for any work is a major and vital stage to ensure the success of the work, and since crises are characterized by three main elements: threat, surprise, and lack of time, the decision-maker and decision-maker find themselves in a state of psychological pressure with which it is difficult to make the right decision at the right time. The appropriate (Kandil, 2019, p. 65).

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Here, the importance and role of prior planning to confront and manage it at the highest levels and with the participation of all its parties and sectors, and this requires preparation, coordination, and integration of all the forces of the comprehensive organization, and the task of planning here is to determine the role of the various departments and sections and at the various administrative levels to confront crises and develop the possibilities and scenarios necessary for them to reduce material and human losses. When it happens (Al-Qatawneh, 2012). For this reason, crisis management planning is one of the most important steps in dealing with crisis management, and this requires effectiveness in the communication process between workers in business organizations, as the effectiveness of internal and external communications must be practiced to address delicate crises, taking into account future expectations. Hence, the role of critical for managers is to identify situations that may be a cause of future crises and work to analyze them and develop ways to treat them (Gundel, 2015, p: 112).

Crisis management planning is a communications plan for an organization that seeks to manage public perceptions of a crisis, and it is also an orchestrated campaign aimed at minimizing negative effects and generating positive results during the occurrence of a crisis. potential crises, and the presence of a crisis management team that has the power to act and deal with the crisis (Millar & Heath, 2013, 38).

There are some guiding rules for crisis management, as follows: (Hariz, 2017, 21)

1-   Crisis management plans must be ready for all the risks that have been identified that may affect the workflow.

2-   Accidents must be reported as soon as they occur to the highest relevant level.

3-   Dealing with emergencies and crises is subject to the priorities of human life, the environment, the protection of facilities, and the continuity of work and dealing with the crisis.

Based on the foregoing, the researcher believes that the effective planning process for crisis management contributes to achieving success in facing crises that are related to the extent of the ability to prevent them and the lack of conditions that help their occurrence in the first place, in order to avoid the damage that may be exposed in the event of a crisis, As crisis management in Jordanian universities is subject to great organizational and administrative challenges, it was necessary to emerge the science of crisis management and crisis management, which required the development of research methods and crisis diagnosis based on knowledge, practice, experience and awareness.

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The Basic Stages of Dealing With the Corona Crisis

Dealing with crises is one of the main aspects that show the efficiency of those in charge of crisis management, as difficult situations largely determine the extent of managers' knowledge, knowledge and experience, and determine their ability to face difficult events. Therefore, the correct and clear vision, the ability to quickly correct analysis, and courage The ability to make decisions, the courage to admit mistakes and not to shirk responsibility, and all this and more can only be judged by the crisis (Abbas, 2014, p. 69).

Dealing with the crisis requires the availability of people capable of managing the crisis in terms of qualification and high-end training. It also requires refining the skills of these people and enhancing their abilities, talents, and natural preparations, especially since dealing with a crisis is of a special nature, and the extensions of future time have dimensions related to the possibility of the situation deteriorating further. (Al-Hamalawy, 2016, 39).

Alas & Vanhala (2010, p: 29) considers that there are three basic stages of dealing with the crisis, as these three stages do not have a categorical separation between them, but rather overlap and intertwine among them, and the following is an explanation of these stages:

First, the pre-crisis stage: it is the stage that warns of the occurrence of the crisis and involves identifying potential crisis situations, developing crisis plans, and allocating time, equipment, and manpower to prepare for the crisis. The pre-crisis stage requires a number of procedures and measures that help in facing the crisis, and among these measures are the following: (Al-Sakarna, 2015, pp. 139–140)

1- **Warning signals:** the stage concerned with monitoring and analyzing the signals that indicate the imminent occurrence of the crisis, and here appears the discrepancy in the ability of officials in Jordanian universities to predict the possibility of a crisis according to their personal characteristics and level of qualification.

2- **Preparedness and prevention:** It are a set of procedures that reflect the extent to which Jordanian universities are preparing for the prevention of the crisis, to ensure the readiness of the concerned agencies and their readiness to deal with the crisis at some stage of its development.

Second: The stage of dealing with the crisis: This stage is considered the main focus of the concept of crisis management and is considered the real test of the prepared plans, and it involves managing the actual ongoing situation itself, where the crisis team uses the powers granted to it, implements the plans and uses the skills acquired from training and readiness to confront The crisis, then, is the stage of the practical application of the measures and procedures

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prepared in advance to deal with the crisis if it occurs, and this stage is represented by the following steps: (Jia, 2012, p: 139)

1- **Damage containment:** This stage focuses on the crisis as it occurs and in which Jordanian universities implement the plans and scenarios prepared in the previous stage to contain the risks of this stage.

2- **Analyzing the situation and determining the causes of the crisis and its expected results:** by identifying the participating parties, the tools and elements of pressure they own, the nature of the alliances that support them, and arriving at the nature and size of the threat and the expected results.

3- **Reviewing the developed plans and studying the extent to which the prepared scenarios and alternatives match the nature of the crisis:** In the event of sharp differences, new scenarios and plans are prepared to confront the crisis.

4- **Actual intervention according to the prepared scenario:** The alternatives are studied and evaluated to determine the best alternative, and instructions are issued to the implementing elements to follow up on implementation steps and reactions while continuing to collect and analyze information and make the required modifications in the scenario.

Third: The post-crisis phase: In this phase, the manifestations of the crisis fade away as a result of losing most of its elements, as the crisis becomes a historical event, and events return to the safety line. Hence, the levels of preparedness return to their normal state, and efforts are coordinated during it to exchange information and lessons learned and follow up on removing the effects resulting from the crisis. This stage includes a number of steps: (Alas et al., 2010, 20)

1- Restore activity: It is the stage of Jordanian universities restoring their balance and returning to the situation they were in before the crisis. This stage includes collecting sufficient inform.ation about the crisis and its consequences, mitigating its damage, and determining the needs necessary to return to a normal working life.

2- Learning from the crisis: It includes recalling and recalling the events experienced by Jordanian universities and studying them in an in-depth and extensive study, and drawing lessons learned from it, in order to know the mistakes that were committed to try to fix them and to ensure that they are not repeated in the future. According to Al-Masa'dah (2017, p. 64), the boundaries between these three stages do not categorically separate them, but rather overlap and intertwine to a large extent. For

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example, during the crisis, preparations are made to avoid and prepare for the effects of the crisis, and this preparation is necessary and essential to the success of the post-crisis phase.

The researcher believes that Jordanian universities, when preparing a plan to confront a crisis, must limit the problem of any kind, and that the process of conducting an accurate assessment of the situation, developing several different scenarios for the problem, and choosing the most expected scenarios, prepares a plan to confront this problem, taking into account the available capabilities. In the sense that the developed plan is objective, realistic, and executable, all this is done realistically before the problem occurs, and if the developed plan agrees as expected, and differs somewhat, the plan is considered applicable and ready to deal with the crisis, and the success rate will be high. However, some procedures can be modified during crisis management according to its evolution.

Hypothesis Development

The study deals with management information systems and their organizational, administrative and technical structure in their impact on the management of the Corona crisis, and the changes that worked to confront them during the face of the crisis, while the topic of addressing these dimensions differed in relation to previous studies. However, Rensburg et al. (2017) examined how crisis communication activities in a South African University of Technology were perceived by employees of that organization, and the results confirmed that the university mainly used a justification crisis response strategy to communicate with stakeholders in the university, while rarely What other strategies are used in the situational crisis communication theory, the communication channels most preferred by employees for crisis communication were SMS.

Alasmari (2018) investigate the understanding of the types of challenges in crisis management arising from cyber-attacks, and showed that there are many challenges in the diverse contexts and dimensions of cybersecurity scenarios, and although some possible solutions have emerged, achieving perfection will remain a dream because attackers always they are above the capabilities of information security systems anywhere in the world. In addition, Apuke & Tunca (2018) confirmed that social media has changed the landscape of communication in crises because it allows more interaction, and leads to the creation and exchange of information, ideas and images, and public relations practitioners and organizations are advised to follow social media activity and work on it, because if it is used Accordingly, it

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may serve as a negotiating platform during crises. Abd Al-Rahman (2019) also revealed the actual reality that expresses how the Al-Balqa Applied University manages the crises it faces, and its results showed that this reality related to how to manage crises at the university was at an average level, and the results indicated that there are statistically significant differences due to years of experience.

Mohsen (2019) found a significant relationship between crisis management and the occurrence of the crisis, as well as in the manner and mechanism by which the crisis is dealt with in relation to the decision-making process necessary to manage it, and the study also showed that crisis management refers to a clear identification How to deal with it when it occurs, depending on the awareness of those in charge of the university's capabilities. Moreover, Daham et al. (2020) analyzed the impact of the effectiveness of management information systems on crisis management in Iraqi banks, and the study found an impact on all dimensions of the effectiveness of management information systems (adequacy of systems for administrative levels, end-user satisfaction, information security, response to variables, and speed of decision-making). decisions) on crisis management in Iraqi banks.

This paper an extension of previous studies that dealt with the issue of management information systems and crisis management, as this study sheds light on the extent to which Jordanian private universities (study community) keep pace with modern administrative systems, concepts and models, specifically with regard to the impact of structuring management information systems in managing the Corona crisis in Jordanian private universities, which are considered one of the important sectors in the renaissance of Jordan. However, based on the above discussion, hypotheses are formulated as follows:

H_0: There is no effect of the combined elements of the MIS structuring (organizational and administrative structuring, technical structuring) in managing the Corona crisis in Jordanian universities.

H_01: There is no impact of the organizational and administrative structure in managing the Corona crisis in Jordanian universities

H_02: There is no effect of technical structuring in managing the Corona crisis in Jordanian universities.

Research model

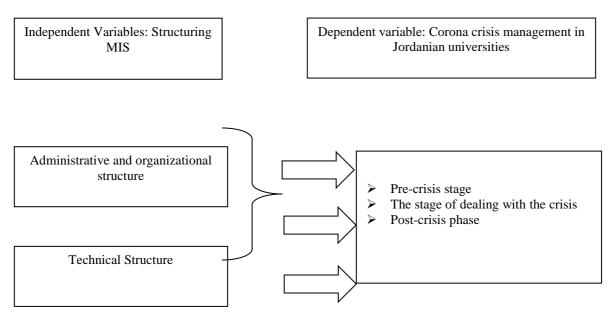The structuring of management information systems is the process of building the gradual organization of a management information system that ensures the flow of information

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and electronic services by providing the information necessary for decision-making. Departments and departments Scientific and practical tools are also used during the stages of the Corona crisis to treat it and try to control it to avoid its negatives and take advantage of its positives (Berdik, et, al., 2021; Makhmudov, 2020). Figure 1. shows how to measure the study variables through the following model:

Figure 1. Search form

Independent Variables: Structuring MIS		Dependent variable: Corona crisis management in Jordanian universities

Administrative and organizational structure		➢ Pre-crisis stage ➢ The stage of dealing with the crisis ➢ Post-crisis phase
Technical Structure		

Source: The model was prepared by the researcher based on the Rensburg, Conradie, & Dondolo (2017) study, Alasmari (2018) study, Bani Abdulrahman's study (2019), and Mohsen's study (2019).

MATERIAL AND METHODOLOGY

The study is classified as field research because the researcher used descriptive and analytical methods to determine the impact of structuring management information systems in managing the Corona crisis in Jordanian universities. Yarmouk University, Al-Hussein bin Talal University, German University, Al-Bayt University, Hashemite University, Tafila University, and Al-Balqa Applied University are among the ten official universities in Jordan that make up the research community. There are also public and private universities in Jordan, as well as a number of smaller institutions. The 13 private universities are: University of Petra, Applied Sciences University, Zarqa University, Al-Zaytoonah University, Al-Isra University, Al-Ahliyya University, Amman University, Amman Arab University, Jadara University, Jerash University, Ajloun National University, Irbid National University, Middle East University, Philadelphia University, and Ajloun National University are some of the other institutions of higher learning in the region. As for the sampling and analysis unit, it consists of deans of

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academic faculties, heads of departments, and faculty members in these universities, whose total number is 8169 respondents (Jordanian Higher Education Accreditation Commission, 2018).

A simple random sample was taken from the study population, which included a number of public and private universities located within the central region of the Hashemite Kingdom of Jordan, based on the references (Sekaran, 2013) and the reference (Al-Najjar, 2017), as the acceptable and appropriate sample size for analysis for the study community in Such a case is (384) singles, and the researcher has distributed (422) questionnaires in a random way to ensure the retrieval of the appropriate numbers for the purposes of completing the current study, which is (384) questionnaires. The statistical package for the social sciences (SPSS) program was used to analyze the data, where the arithmetic means, standard deviation, and multiple and simple linear regression analysis were used to test the hypotheses.

RESULTS AND DISCUSSION

The questionnaire was developed for the current research topic, and its validity was confirmed by presenting it to some fellow professors in Jordanian universities whose scientific qualifications are in management and management information systems, and the Cronbach Alpha coefficient of internal consistency was extracted to know its ability to measure variables, and the total stability of the tool reached 87.6, which is an appropriate percentage for the purpose of adopting the results of the study (Sekaran, 2013), and Table No. (1) shows the reliability coefficient for each variable.

Table .1 The stability coefficients of the independent and dependent variables

Variable	Cronbach Alpha%
Organizational and Administrative Structure	84.3
Technical Structure	85.8
Crisis management	88.2
The tool's overall stability coefficient	**87.6**

Source: prepared by the researcher

Frequencies and percentage of demographic factors were extracted. The number of male respondents reached (280) and constituted 72.9% of the total sample of the study, while the number of female respondents was (104) females and the percentage of 27.1%. The age of the highest percentage of respondents in the study sample is concentrated in the recurring category (41-50 years) and their number was (167) respondents and constituted a rate of 43.5%, then the recurring category (31-40 years) and their number was (85) respondents and constituted a

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percentage of 22.0%. Whereas, (138) respondents, and they constituted (35.9%), their years of experience ranged between 5 to 10 years; The academic rank of assistant professor was the highest, which is (49.0%), then associate professor, and their number was (87) respondents with a rate of (22.7%).

In general, this distribution of the sample is evidence that its members from the deans of academic faculties, heads of departments and faculty members in Jordanian universities are qualified to answer the study questions convincingly, which confirms the integrity of the data collected for the purposes of this study. Relatively high academic qualifications and many years of teaching experience.

Second: the results of descriptive statistics for the data

The arithmetic means and standard deviations of the study variables were found

First: Arithmetic averages and standard deviations of the organizational and administrative structuring variable

Table 2. Arithmetic averages and standard deviations of the organizational and administrative structuring variable

No.	Phrase	Mean	S. D	Imp.	Rank
1	The university provided advanced computers in all faculties and departments of the university in light of the outbreak of the Corona disease crisis	3.859	.7632	High	4
2	The university has updated and developed programs to complete the distance education process in light of the outbreak of the Corona disease crisis	3.635	.7757	medium	8
3	The university has provided software capable of accomplishing the distance learning process in proportion to its various activities	3.712	.6297	High	7
4	Shared databases at the university serve the distance learning process in light of the outbreak of the Corona disease crisis	3.869	.7119	High	3
5	The university has competent software designers, hardware and equipment operators in the field of information technology and distance education	3.873	.6438	High	2
6	Information flows between the different administrative levels at the university easily and as needed to complete distance education	3.749	.7802	High	6
7	The networks used by the university provide a service that suits the educational needs of students	3.881	.7865	High	1
8	The university has used social media to increase interactions and exchange information and ideas during the Corona disease crisis	3.847	.7860	High	5
9	Information technology workers at the university have the appropriate technical expertise to perform their work	3.598	.7382	medium	9
Total		3.780	High		

Source: prepared by the researcher

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It is evident from the previous table No. (2) that the arithmetic averages of the paragraphs related to the organizational and administrative structure variable came at a high level, and ranged between (3.881- 3.598) and that the phrase that states "The Corona disease crisis provided a detailed and accurate administrative information system to complete the teaching process at the university." Through distance education "is the highest among the average responses, while the statement that "the outbreak of the Corona disease crisis has reduced reliance on the use of traditional methods of communicating with workers" was the lowest among the average responses. As for the rather low standard deviation values, they indicate that the answers of the study sample are similar and close to some extent.

Second: Arithmetic averages and standard deviations of the technical structuring variable

Table 3. Arithmetic averages and standard deviations of the technical structuring variable

No.	Phrase	Mean	S. D	Imp.	Rank
10	The university provided advanced computers in all faculties and departments of the university in light of the outbreak of the Corona disease crisis	3.754	.7217	High	6
11	The university has updated and developed programs to complete the distance education process in light of the outbreak of the Corona disease crisis	3.619	.7357	medium	7
12	The university has provided software capable of accomplishing the distance learning process in proportion to its various activities	3.879	.7719	High	2
13	Shared databases at the university serve the distance learning process in light of the outbreak of the Corona disease crisis	3.629	.7825	medium	8
14	The university has competent software designers, hardware and equipment operators in the field of information technology and distance education	3.929	.6927	High	1
15	Information flows between the different administrative levels at the university easily and as needed to complete distance education	3.832	.7316	High	4
16	The networks used by the university provide a service that suits the educational needs of students	3.525	.7311	medium	9
17	The university has used social media to increase interactions and exchange information and ideas during the Corona disease crisis	3.816	.7536	High	3
18	Information technology workers at the university have the appropriate technical expertise to perform their work	3.787	.7592	High	5
Dependent variable: Corona crisis management in Jordanian universities		3.752	High		

Source: prepared by the researcher

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It is evident from the previous table No. (3) that the arithmetic averages of the paragraphs related to the technical structuring variable came at a high level and ranged between 3.929 and 3.525, and that the statement that "the university has software designers and efficient device and equipment operators in the field of information technology and education" distance, is the highest among the average responses, while the statement that "the networks used by the university provide a service commensurate with the students' educational needs" is the lowest among the response averages. To some extent, the rather low standard deviation values indicate that the answers of the study sample are similar and close to.

Third: Arithmetic averages and standard deviations of the dependent variable: Corona crisis management in Jordanian universities.

Table 4. Arithmetic averages and standard deviations of the dependent variable: Corona crisis management in Jordanian universities

No.	Phrase	Mean	S. D	Imp.	Rank
19	The university responded quickly to the emerging changes, which helped it predict the Corona crisis	3.824	.7650	High	5
20	The university has the means to detect early warning signs of the Corona crisis	3.635	.7819	High	8
21	The university has clear instructions that specify procedures for dealing with the Corona crisis before its time	3.788	.7765	High	6
22	The university held periodic meetings to prepare to deal with the Corona crisis	3.941	.7665	High	2
23	The university has the ability to mobilize the necessary human resources to contain the Corona crisis	3.938	.7995	High	3
24	The university responded immediately to contain the Corona crisis by distributing tasks in a short period when it occurred	3.972	.7211	High	1
25	The university began taking the necessary measures to practice its normal activities without delay after the Corona crisis	3.894	.7719	High	4
26	There are future plans developed by the university to manage the Corona crisis by taking advantage of addressing this crisis	3.664	.7557	medium	7
27	The university evaluates the effectiveness of previous crisis management plans with the intention of dealing with future crises	3.588	.7797	medium	9
28	The university has information systems to store and retrieve results and lessons learned from the Corona crisis when needed	3.575	.7819	medium	10
Dependent variable: Corona crisis management in Jordanian universities		3.781	High		

Source: prepared by the researcher

It is evident from the previous table No. (4) that the arithmetic averages of the paragraphs related to the dependent variable Corona crisis management in Jordanian

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universities came at a high level and ranged between 3.972 and 3.575, and that the statement that "the university responded immediately to contain the Corona crisis by the distribution of tasks in a short period when they occurred" is the highest among the average responses, while the statement that "the university has information systems to store and retrieve results and lessons learned from the Corona crisis when needed" is the lowest among the average responses.

Testing the main hypothesis: There is no effect of the combined MIS structuring elements (organizational and administrative structuring, technical structuring) in managing the Corona crisis in Jordanian universities**.**

Table 5. The results of the multiple regression test for the impact of the combined MIS structuring elements in managing the Corona crisis in Jordanian universities**.**

Dependent Variable	Independent Variable	Regression Coefficient (ß)	T	Sig.
Managing The Corona Crisis in Jordanian Universities	Organizational And Administrative Structure	.41	5.712	.002
	Technical Structure	.49	6.487	.000
R = .48 R^2 = .46 F = 16.12 Sig = .000				

Source: prepared by the researcher

The results of Table (5) show that the impact of the independent variables on the elements of the structuring of management information systems (organizational and administrative structuring, technical structuring) on the dependent variable represented in (the management of the Corona crisis in Jordanian universities) is a statistically significant effect, the point where the calculated F value was (16.12). And with a level of significance (Sig = 0.000), which is less than (0.05), and a value of (R =.68), which shows that there is a positive correlation between the independent variables and the dependent variable. It means that, assuming that the other variables remain constant, the variance in the variable (Corona Crisis Management in Jordanian Universities) can be explained by the variance in (the elements of structuring management information systems) taken together..

The table of regression coefficients also reveals that the organizational and administrative structure variable's ß value was.41, while its t value reached 5.712 at the level of significance (Sig = 0.002), and this confirms the significance of the coefficient (organizational and administrative structure). When studying the elements of structuring management information systems combined in the management of the Corona crisis in Jordanian universities, the value of ß at the variable (technical structuring) reached.49, while

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the value of t reached 6.487 at the level of significance (Sig =.000). This confirms the significance of the (technical structuring) coefficients when studying the components of MIS structuring combined in the management of the Corona crisis in Jordanian universities.

The results showed the existence of a statistically significant effect of the elements of the management information systems structure in managing the Corona crisis in Jordanian universities, and it was found that the universities responded immediately to contain the Corona crisis by distributing tasks in a short period when it occurred, as periodic meetings were held to prepare to deal with the Corona crisis, as well as It was found that universities have the ability to mobilize the human resources necessary to contain the Corona crisis, in addition to taking the necessary measures to carry out their normal activities without delay after the Corona crisis. This result is consistent with the result of the Rensburg, Conradie, & Dondolo (2017) study that showed that the university primarily used the justification crisis response strategy to communicate with university stakeholders.

The researcher believes that this result confirms the importance of crisis planning, which requires planning how to deal with the crisis by informing the administration of the possibility of its occurrence. It is necessary to know the importance of strategic readiness to respond to the crises faced by Jordanian universities, and this readiness requires understanding the elements of structuring management information systems, in addition to paying attention to the types of messages that the administration needs, which are able to address various types of crises and send them in a timely manner.

The results also indicated that there is an impact of the organizational and administrative structure on managing the Corona crisis in Jordanian universities. It turned out that the Corona disease crisis provided a detailed and accurate administrative information system to complete the teaching process in universities through distance education, and this crisis prompted universities to move towards completing the registration process and paying educational service fees electronically, as well as work with their capabilities to take decisions to standardize procedures, integrate and add new administrative jobs and activities in light of the outbreak of the Corona disease crisis. This result is consistent with the result of Mohsen's study (2019), which showed that crisis management means defining a clear approach to dealing with crises when they occur, based on full awareness of the capabilities of the organization and that university leaders have an important impact on the decision-making process during crises in universities and colleges.

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The results also showed an impact of the technical structure in managing the Corona crisis in Jordanian universities, and it was found that the universities have competent program designers and operators of devices and equipment in the fields of information technology and distance education. In addition, it was found that the university employed social media to increase interactions and exchange information and ideas during the Corona disease crisis. Interact leads to the creation and exchange of information, ideas, and images and serves as a negotiation platform during crises.

The researcher believes that the successful management of the Corona crisis in Jordanian universities requires an administration that has full powers and has the ability to issue orders and instructions to all units and specialized departments. It cannot be avoided, regardless of the degree of preparedness, as managing this crisis is not easy, and if it is not dealt with properly, it may lead to many calamities. It is necessary to analyze any problem, study alternatives in light of the available capabilities, existing conditions, and calculations of damages and benefits, and find appropriate solutions.

CONCLUSION

The main objective of the research is to try to understand the impact of structuring management information systems on managing the Corona crisis in Jordanian universities. As the structuring of management information systems plays a major role in the growth and development of the global economy, management information systems and their various tools have become the mainstay and technical basis for advancement in the fields of e-business, telecommunications, e-commerce, and e-government. From here, the importance of the research emerges from its topic, which is management information systems and the management of the Corona crisis. Crisis management, which is the management information system with its variables represented in the organizational, administrative, and technical structure. However, this paper recommends to work on finding ready-made scenarios to prepare to face any crisis faced by Jordanian universities and to respond quickly to the emerging changes that occur during the practice of activities and functions related to the organizational and administrative structure as one of the elements of the structuring of management information systems for its clear impact in managing the Corona disease crisis in Jordanian universities by reducing dependence on the use of traditional methods of communicating with employees, changing the marketing information system in light of the outbreak of the Corona

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disease crisis, delete unnecessary jobs and activities as well as changing the finance and accounting information system.

Second: The senior management in Jordanian universities should involve employees and department heads in the processes of addressing the results of crises and reviewing their effects and how to address them, and focusing on conducting periodic studies to determine the priorities imposed by confronting the Corona crisis by securing the requirements of technical restructuring as one of the elements of structuring management information systems, from by following the following mechanisms. Finally, it is necessary to seek the assistance of experts and specialists from outside Jordanian universities when preparing plans to restore their activity after the crisis and to evaluate previous plans with the aim of developing and improving them to deal with future crises. As well as holding meetings and distributing bulletins to provide valuable information that helps in understanding the causes of crises and ways to avoid them in the future.

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