

The Role of Management Information Systems Strategies toward Understanding and Managing Organizational Crisis in AL-Hussein Bin Talal University

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Abstract: The This study aimed: (1) To explain how Management Information System (MIS) strategies can use to understand and manage organizational crisis in AL-Hussein Bin Talal University (AHU). (2) To examine relationship between MIS strategies role and their impact on the organizational crisis management process managers based on their gender, age, marital status, job experience and scientific qualification. Analytical descriptive approach was used because of its suitability for this study; a questionnaire was used to collect data from the study participants. The participants were administrators and academics whom have directly or indirectly roles in the process of building strategies for crisis management at AHU. The results showed that there is a significant statistical relationship between using of MIS and organizational crisis management process stages in AHU. And there is no significant statistical relationship for MIS role its impact on the organizational crisis management process, based on gender, age, marital status and job experience. However, there was a significant statistical relationship due to the scientific qualification. Recommendations based on the study findings were presented.

Keywords: Management information Systems, Strategies, organizational crisis, AL-Hussein Bin Talal University, AHU, Jordanian Universities.

1. INTRODUCTION

There are many forms of crises which are produced from several of causes. Further every organization can meet with a crisis in a near term or long term future. However, it's not because crises are should happen for sure, that an organization cannot deal with it. A suitable response not only minimizes losses, it's even necessary for existence [1][2]. For that reason, every organization, including Al-Hussein bin Talal University, must have policies, plans, and strategies that the organization uses to deal with any crisis and also to protect its reputation. The ability to respond to a crisis determines by how organization will deal with that crisis[3]. To build a good and valuable crisis management plans or strategies, organizations need to relevant information, clear, accurate, complete and timeliness [4].

Information supported for crisis management plays a very important role in today's hectic world, especially in an emergency. The speed, availability, integrity and confidentiality of the information transmitted is one of the critical factor affecting the level of its solution [5]. There is currently a huge amount of information available to the manager and this means that managers are increasingly relying on MIS to access explosive information. MIS helps the manager to access relevant, accurate and up-to-date information that is the surest way to make accurate decisions. It also helps automate and integration of research and management science techniques into management information system. [6].

MIS is a system which provides manager in all organizations management levels with suitable information based on data that collect from internal and external resources, to help them to make effective and appropriate decisions that best achieve their organization goals and satisfy decision maker's needs [7]. MIS are useful and indispensable tools that provide important support in decision-making, not only for the crisis manager but also for anyone involved in crisis situation [8]. Recently Management Information Systems (MIS) used in all organizational levels and functions, there are many studies in recent years that focuses on the design, development, use of MIS that can support organizations respond to a crisis [9]. In this paper, we describe a role of MIS Strategies toward managing organizational crisis in AHU in Jordan.

This paper is organized as follows: section 2 describes the purpose of study, section 3 introduce the research method used throughout this paper, section 4 describes the results and discussion, finally, section 5 presents our conclusion and recommendation.

2. PURPOSE OF THE STUDY

The aims of this study are to: (1) Explain how MIS strategies can use to understand and manage organizational crisis in AHU. (2) Examine relationship between MIS strategies role and their impact on the

organizational crisis management process managers based on their gender, age, marital status, job experience and scientific qualification.

The research questions of the current study were:

1. What is the role of using MIS strategies to understand and manage organizational crisis in AHU?
2. What is relationship between MIS strategies role and their impact on the organizational crisis management process managers based on their:
 - Gender.
 - Age.
 - Marital Status.
 - Job Experience.
 - Scientific Qualification.

3. RESEARCH METHOD

This study followed a descriptive and analytical approach. A cross sectional study was used in which a group of administrators and academic staff from AHU participated. In the following subsections we present the data collection instrument and procedures; the data analysis plan; and the selection of participants.

3.1 Data Collection Instrument and Procedures

To collect data from respondents a questionnaire was designed and developed by the researchers based on the reviewed literature. The questionnaire consisting of two sections, the first section contains questions about the participants' demographic information. The second section contains two groups of questions, the first group aimed to demonstrate participants' perceptions about the role of MIS strategies in AHU general strategic activities. The second group aimed to demonstrate participants' perceptions about the role of MIS strategies to understand and manage organizational crisis in AHU. The options for responses to the questions of second section were on a five points Likert-type scale. the scale range is 1= strongly disagree, 2= disagree, 3= undecided, 4= agree and 5= strongly agree. To determine the validity and reliability of the study instrument(questionnaire) the researchers use feedback from a panel of reviewers and Cronbach's α test to determine the reliability of the questionnaire..The Cronbach's α coefficients for the sections were 0.87, showing high reliability of the data collection instrument. To describe individuals responses to the questions, descriptive levels of the mean scores of the items were adopted (Table 1).

Table1: Descriptive Levels of the Mean Scores

Level	Mean scores
Very low	0.0 to 1.49
Low	1.5 to 2.49
Moderate	2.5 to 3.49
High	3.5 to 4.49
Very high	4.5 to 5.0

The procedure used to collect data from participants started with contacting university vice president for Academic Affairs to obtain his permission to distribute the questionnaire among administrators and academic staff whom have directly or indirectly roles in the process of building strategies for crisis management at AHU. University vice president for Academic Affairs agreed to distribute the questionnaire to administrators and academic staff. During several days, the researchers visited all university collages, centers and units to conduct a presentation regarding the use of MIS strategies in crisis management process. Then, after informing the administrators and academic staff - participants - about the objective of the study, they were invited to participate. The questionnaires were given to the participants. Finally, The administrators, managers and academic staff who agreed to participate completed the questionnaires and returned them at the same day.

3.2 Data Analysis

The data analysis started with the descriptive statistics that used to calculating the frequency distributions of the data toward demographic information of the participants. Descriptive statistics including means and standard deviations were used to answer the first research question related to the role of using MIS strategies to understand and manage organizational crisis in AHU . One-Way ANOVA test of variance analysis and independent sample T-tests were used to answer the second research question related to the relationship

between MIS strategies role and their impact on the organizational crisis management process managers based on their (Gender, Age, Marital status, Job experience, Scientific qualification).

3.3 Participants

The participants were administrators and academic staff in AHU whom have directly or indirectly roles in the process of building strategies for crisis management at AHU. The questionnaire collected data on their gender, age, marital status, job experience, scientific qualification (Table 2). In addition, the questionnaire collected data and information related to their perceptions about the role of using MIS strategies to understand and manage organizational crisis in AHU.

Table 2.Descriptive Summary of Participants’ Demographic Information N=150

	Category	Frequency	%
Gender	Male	123	82.00
	Female	27	18.00
Age	18-30	9	6.00
	31-40	60	40.00
	41-50	48	32.00
	More than 50	33	22.00
Marital Status	Single	25	16.66
	Married	125	83.34
Job Experience	Less than 10	35	23.33
	10 – 20	83	55.33
	More than 20	32	21.34
Scientific Qualification	Bachelor and below	53	35.34
	M.A.	34	22.66
	Ph.D.	63	42.00

The number of male participants was 123 with 82% of all participants, while the number of female participants was 27 with 18% of all participants. This indicates that most of the senior administrative positions in the university are occupied by males. This is due to the culture that assumes that the appointment of males instead of females in senior management positions because they are better able to manage organizational crises than females. The second age group which represent ages 31-40 years old have 40% of all participants, followed by the third age group, which represent ages 41-50 years old, means 32% of all participants. These two groups formed the majority of participants, which indicates the dominance of the youth employees on the senior administrative positions at the university. The majority of participants 83.34% were married, while 16.66% of participants were singles which reflects the nature of the community and religion which directs individuals to marriage. The majority of participants have job experience 10-20 years with 55.33% of all participants, due to decision makers and senior management staff at the university whom should have good experience which is mean 10-20 years or more. The majority of the participants are Ph.D. degree holders, with 42% of all participants. Most of the administrative positions are occupied by Ph.D. holders.

These findings suggest that: (1) AHU focuses on recruiting individuals with high job experience and high scientific qualifications in senior management positions that deal with crisis management and strategies building processes. (2) The majority decision makers are 31-50 years old, which helps in accepting idea of using MIS strategies in crisis management processes within the university.

4. RESULTS AND DISCUSSION

4.1 Participants' perceptions about the role of MIS strategies in AHU general strategic activities.

The results show that participants had positive perceptions about the role of MIS strategies in AHU general strategic activities. Participants’ perceptions about the role of MIS strategies in AHU general strategic activities are presented in Table 3.

Table3: Participants’ perceptions about the role of MIS strategies in AHU general strategic activities Scale (N=150)

C	Perceptions Scale	M	SD
1.	Information provided by MIS strategies is sufficient for the process of building the strategic vision of the university.	3.99	0.96
2.	MIS strategies provide the information needed to build the University's mission.	4.14	1.08
3.	MIS strategies help to determine strategic goals that realize the vision and mission of the university.	4.05	0.98
4.	Information provided by MIS strategies is comprehensive and helps in quality management at the university.	4.23	1.09
5.	The strategies offered by the MIS help innovation that generates the university's competitive advantage.	3.92	0.92
Overall		4.07	0.81

Participants’ overall perceptions about the role of MIS strategies in AHU general strategic activities were highly positive (M = 4.07, SD = 0.81). Participants showed highest positively to the paragraph “Information provided by MIS strategies is comprehensive and helps in quality management at the university” (M=4.23, SD=1.09), and lowest positively to the paragraph “The strategies offered by the MIS help innovation that generates the university's competitive advantage” (M=3.92, SD=0.92). The mean values for all items were high. The participants presented positive perceptions to the role of MIS strategies in AHU general strategic activities, and they believed that AHU have MIS strategies that are used effectively and appropriately in all management levels for all strategic planning activities.

Many similar studies showed significant statistical relationship between MIS and general strategic activities in their findings, which is aligned with these study findings, examples of these: MIS and Competitive Advantage [10], MIS and Strategic performances: The role of top team [11], The significance of MIS for enhancing strategic and tactical planning [12], Strategic Alignment between Strategic Planning and MIS, in Third Sector Companies with Hotel Activity [13].

4.2 Participants' perceptions about the role of MIS strategies to understand and manage organizational crisis in AHU.

The results show that participants had positive perceptions about the role of MIS strategies to understand and manage organizational crisis in AHU. Participants’ perceptions about the role of MIS strategies to understand and manage organizational crisis in AHU are presented in Table 4.

Table4. Participants’ perceptions about the role of MIS strategies to understand and manage organizational crisis in AHU Scale (N =150)

C	Perceptions Scale	M	SD
1.	MIS strategies help to get overall perception of the crisis.	4.25	1.07
2.	MIS strategies assist in identifying the crisis-making parties.	4.04	0.96
3.	MIS strategies helping to build strategic plans to ensure that the crisis does not spread.	4.05	0.98
4.	Coordinates all university units to organize the process of crisis eliminating are presented by MIS strategies.	3.90	0.91
5.	All plans used in the crisis management process are saved as backups for restore processes in the future.	4.15	1.02
Overall		4.08	0.83

Participants’ overall perceptions about the role of MIS strategies to understand and manage organizational crisis in AHU were highly positive (M = 4.08, SD = 0.83). Participants showed highest positively to the paragraph “MIS strategies help to get overall perception of the crisis” (M=4.25, SD=1.07), and lowest positively to the paragraph “Coordinates all university units to organize the process of crisis eliminating are presented by MIS strategies” (M=3.90, SD=0.91). The mean values for all items were high. The participants presented positive perceptions to the role of MIS strategies to understand and manage organizational crisis in AHU, and they believed that AHU have MIS strategies that are used effectively and appropriately for all crisis

management stages process in AHU. University decision-makers should increase attention to the process of coordination between all university units to ensure quality during crisis management process.

Many similar studies showed significant statistical relationship between MIS strategies and organizational crisis management in their findings, which is aligned with these study findings, examples of these: Information and Communication Technology And Crisis Management [14], A Collaborative Information System Architecture for Process-Based Crisis Management [15], Influence of Information-communication System to Reputation Management of a Company [16], Crisis Management 2.0: Towards a Systematization of Social Software Use in Crisis Situations [17].

The findings in Table 3 and Table 4 show that participants strongly accepted the use of MIS strategies to help general strategic activities and to understand and manage organizational crisis in AHU. AHU decision makers should take advantage of these situations by developing and integrating information technologies in strategic activities and crisis management processes.

4.3 Gender and Participants' perceptions about the role of MIS strategies to understand and manage organizational crisis in AHU.

The researchers compared participants' perceptions depending upon their gender variable through independent sample t-test (Table 5).

Table 5: T-Tests of Participants Perceptions about the role of MIS strategies to understand and manage organizational crisis in AHU by Gender

	Gender	N	Mean	SD	T	Statistical significance
The role of MIS strategies to understand and manage organizational crisis in AHU.	Male	123	4.2450	0.3647	- 1.384	0.438
	Female	27	4.2285	0.3123		

There was no significant relationship between participant's gender and their perceptions about the role of MIS strategies to understand and manage organizational crisis.

4.4 Age and Participants' perceptions about the role of MIS strategies to understand and manage organizational crisis in AHU.

The researchers compared participants' perceptions based on their age using one-way ANOVA test (Table 6).

Table 6. One-Way ANOVA- of Participants Perceptions about the role of MIS strategies to understand and manage organizational crisis in AHU by Age

	Source	Sum of Squares	Freedom Degree	Mean Squares	F value	Statistical significance
The role of MIS strategies to understand and manage organizational crisis in AHU.	Between groups	2.870	9	0.318	1.896	0.152
	Within groups	18.256	141	0.127		
	Overall	21.126	150			

The results showed that there are no differences in the responses of participants about the role of MIS strategies to understand and manage organizational crisis in AHU based on age variable. This can be explained by the fact that most of the participants have long job experience and therefore their ages are 31-40 years old.

4.4 Marital Status and Participants' perceptions about the role of MIS strategies to understand and manage organizational crisis in AHU.

The researchers compared participants' perceptions based on their Marital Status through independent sample t-test (Table 7).

Table 7. T-Tests of Participants Perceptions about the role of MIS strategies to understand and manage organizational crisis in AHU by Marital Status

	Marital Status	N	Mean	SD	T	Statistical significance
The role of MIS strategies to understand and manage organizational crisis in AHU.	Single	25	4.0934	0.3265	- 1.053	0.342
	Married	125	4.1298	0.3246		

The absolute value of T (1.053), also statistical significance (0.342), which is greater than (0.05). This indicates that there are no differences between the responses of participants about the role of MIS strategies to understand and manage organizational crisis due to marital status variable, this can be explained by there is no relationship between the ability to manage crises and build strategies and the marital status of the participant.

4.5 Job Experience and Participants' perceptions about the role of MIS strategies to understand and manage organizational crisis in AHU.

The researchers compared participants' perceptions based on their Job Experience using one-way ANOVA test (Table 8).

Table 8: One-Way ANOVA- of Participants Perceptions about the role of MIS strategies to understand and manage organizational crisis in AHU by Job Experience

	Source	Sum of Squares	Freedom Degree	Mean Squares	F value	Statistical significance
The role of MIS strategies to understand and manage organizational crisis in AHU.	Between groups	3.960	32	0.440	2.311	0.123
	Within groups	28.343	118	0.210		
	Overall	32.303	150			

Results showed that the value of F (2.311), and the statistical significance (0.123), which is greater than (0.05), indicating that there are no differences in the responses of participants about the role of MIS strategies to understand and manage organizational crisis due to Job Experience variable. This can be explained by the fact that most of the participants have long Job Experience (10-20 years).

4.6 Scientific Qualification and Participants' perceptions about the role of MIS strategies to understand and manage organizational crisis in AHU.

The researchers compared participants' perceptions based on their Scientific Qualification using one-way ANOVA test (Table 9).

Table 9. One-Way ANOVA- of Participants Perceptions about the role of MIS strategies to understand and manage organizational crisis in AHU by Scientific Qualification

	Source	Sum of Squares	Freedom Degree	Mean Squares	F value	Statistical significance
The role of MIS strategies to understand and manage organizational crisis in AHU.	Between groups	1.501	34	0.440	2.311	0.123
	Within groups	26.243	116	0.210		
	Overall	27.746	150			

Results showed that the value of F (3.495), and the statistical significance (0.036) is less than (0.05), indicating that there are differences in the responses of participants regarding to the role of MIS strategies to understand and manage organizational crisis due to scientific qualification variable. Scheffe's Test was used to show the differences between the scientific qualification groups as shown in Table 10.

Table 10. Scheff'e Test for Participants Perceptions about the role of MIS strategies to understand and manage organizational crisis in AHU by Scientific Qualification

	Differences	Bachelor	Master	Ph.D.
The role of MIS strategies to understand and manage organizational crisis in AHU.	Bachelor		0.123	0.480-
	Master	0.123-		0.516*-
	Ph.D.	0.480	*0.516	

Results showed that there are differences between the "Master" and the "Ph.D." and for the "PhD" group. This can be explained by the fact that there is a difference in the academic level ability to recognize and manage crises. The senior administrative positions at the University which are directly involved in the process of building strategies for crisis management are often occupied by Ph.D. holders.

5. CONCLUSION AND RECOMMENDATIONS

The objective of this study was to show the role of MIS strategies to understand and manage organizational crisis in AHU. Our findings showed that MIS strategies play a large role (84%) in all administrative activities related to strategic planning and building future strategies at AHU. The findings showed also that there is a significant statistical relationship between the use of MIS strategies and decision maker's ability to manage organizational crises in Al-Hussein University. The study find that (83%) of the ability of decision makers for understand and manage organizational crises is related to use of strategies which is built based on information provided by MIS. This finding showed the importance of using computerized MIS strategies and their impact on organizational crisis management.

The findings also showed that is no significant statistical relationship between the role of use MIS strategies and the processes of understand and manage organizational crisis due to the variables (gender, age, marital status and job experience), While there was a significant statistical relationship due to the scientific qualification variable and this can be explained by the fact that there is a difference in the academic level ability to recognize and manage crises. The senior administrative positions at the University which are directly involved in the process of building strategies for crisis management are often occupied by Ph.D. holders.

The study suggest to increase attention to MIS in terms of maintenance and development, increasing security and protection attention to information and databases and increasing attention to scheduled backups creation. Also developing strategic information systems to provide decision-makers with complete and detailed strategies to help them to build and develop the strategic vision and identify procedures to reach their strategic objectives and avoiding crisis. Also the findings recommend University decision-makers to increase attention toward the process of coordination between all university units and departments to ensure quality during crisis management process.

As any experimental study, this study has some limitations regarding its data which was collected using self-reports. Also the number of respondents was not large and this limited the study to be general. The data were collected in a few days ,and we know that perceptions are changing with respect to time. Therefore, the constancy of participant's perceptions was not determined. Furthermore, a limited number of variables were examined to measure the role of using MIS strategies to understand and manage organizational crisis in AHU.

REFERENCES

- [1] Ianna, F. (1997). Disaster Recovery for Businesses. F., *Disaster Recovery Journal*, Volume 10, Issue3, Summer 1997.
- [2] Wilson B. (2000). Business Contingency Planning: A necessity in new E-commerce era" B., *Disaster Recovery Journal*, Volume 13, Issue 4, fall 2000.
- [3] Austin O.Oparanma, Ibekwe Wechie (2014). Crisis Managemnet Processes To Ensure Effective and Continuous Performance. *IOSR Journal of Business and Management (IOSR-JBM)*, Volume 16, Issue 8. Ver. III (Aug. 2014), 01-04.
- [4] Yang W. Lee et al, (2002). AIMQ: a methodology for information quality assessment. *Information & Management*, volume 40 (2002), 133–146.

- [5] Katerina Vichova et al.(2017) , "The use of crisis management information systems in rescue operations of Fire Rescue Service of the [4] Czech Republic" , TRANSCOM 2017: International scientific conference on sustainable, modern and safe transport, Procedia Engineering 192 , 947 – 952.
- [6] Kumar Chetan(2015), concept-role-importance of mis, <https://www.linkedin.com/pulse/concept-role-importance-mis-kumar-chetan/> (accessed 10.08.2019).
- [7] Argyris, C. (1971). Management information systems: the challenge to rationality and emotionality, *Management Science*, 17(6), 275-292.
- [8] M. Drozdek, K. Jelsovska, Information support for crisis management: Focusing on work with geoinformation system ArcGIS, Silesian University, Opava, 2013.
- [9] Turoff, M. et al.(2004). The design of a dynamic emergency response Management information system, *Journal of Information Technology Theory and Applications* 5 (4), 01-36.
- [10] Berisha-Shaqiri , A. (2015). Management Information System and Competitive Advantage. *Mediterranean Journal of Social Sciences MC SER Publishing, Rome-Italy*, 6(1), 204-208.
- [11] Naranjo, G. D. (2009). Management information systems and Strategic performances: The role of top team. *International Journal of Information Management* 29, 104–110.
- [12] Karim, A. J.(2011). The significance of Management Information Systems for enhancing strategic and tactical planning. *Journal of Information Systems and Technology Management*, 8(2), 459-470.
- [13] Lugoboni, L. F. et al, (2018). Strategic Alignment between Strategic Planning and Management Information System, in Third Sector Companies with Hotel Activity. *PODIUM Sport, Leisure and Tourism Review*, 7(1), 79-105.
- [14] Wojciechowicz, w. , Zych, J. , Hołubowicz , w.(2012). Information and Communication Technology And Crisis Management. *TECHNICAL SCIENCES, Abbrev.: Techn. Sc., No 15(1)*, 101-110.
- [15] Tahir, O. et al, (2008). A Collaborative Information System Architecture for Process-Based Crisis Management. *International Conference on Knowledge-Based and Intelligent Information and Engineering Systems*, 630-641.
- [16] Zraková, D., Kubina, M. Koman, G.(2017). Influence of Information-communication System to Reputation Management of a Company.
- [17] Reuter, C., Marx, A., Pipek,V. (2012). Crisis Management 2.0: Towards a Systematization of Social Software Use in Crisis Situations. *International Journal of Information Systems for Crisis Response and Management*, 4(1), 01-16.