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Nazem Shniekat

Department of Financial and Administrative Sciences, Al-Balqa Applied University, As-Salt, Jordan,
basel.ali@asu.edu.bh

Wesam AL_Abdallat

Department of Financial and Administrative Sciences, Al-Balqa Applied University, As-Salt, Jordan,
basel.ali@asu.edu.bh

Mohammad Al-Hussein

Department of Financial and Administrative Sciences, Al-Balqa Applied University, As-Salt, Jordan,
basel.ali@asu.edu.bh

Basel Ali

Accounting and Finance Department, Applied Science University, Kingdom of Bahrain,
basel.ali@asu.edu.bh

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Influence of Management Information System Dimensions on Institutional Performance

Nazem Shniekat¹, Wesam AL_Abdallat¹, Mohammad Al-Hussein¹ and Basel Ali^{2,*}

¹Department of Financial and Administrative Sciences, Al-Balqa Applied University, As-Salt, Jordan

²Accounting and Finance Department, Applied Science University, Kingdom of Bahrain

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Abstract: The primary purpose of this investigation is to investigate the impact of MIS on organizational performance from a scholarly standpoint at Jordanian institutions with a business school. This study's target population includes 140 faculty members from Jordan's AL-Balqa University. As the targeted colleges, a basic sample of (10) colleges is browsed, and 140 replies are distributed (14 surveys for every college). To evaluate the idea, measuring tools such as One-way ANOVA and regression analysis is used. The key findings revealed that there is a moderate positive relationship between MIS and organizational performance, and that the qualification of the respondents has no effect on the MIS related performance of faculty members; this suggests that the higher the administration data frameworks, the higher the institution's presentation. Furthermore, the findings revealed that administration, data frameworks had a considerable impact on university performance. In the last section, the researcher makes many fascinating suggestions for Jordanian institutions and their teaching personnel.

Keywords: Management Information system, Institutional Performance

1. Introduction

Most institutes in developing countries have expressed a need for speedy and efficient knowledge dissemination [1]. This urge has become even stronger in the new millennium with the introduction of Information, Communication, and Technology (ICT) [2] and the widespread use of online applications [3]. The relationship between productive information handling and quicker basic leadership has existed for a long time, and with the introduction of data Technology, it has become clear that the relationship should be reinforced and the advantages outfitted to guarantee progress in every single educational institution that uses this technology [4].

The area of executive data frameworks (MIS) has seen a marked increase in its relatively brief life expectancy [5]. In the late 1950s, it started as a continuation of activities, research and choice sciences. It declared its independence and transitioned into a new area within a few decades. Since the 1970s, it has seen several aimless wanders that have removed it more distant and distant from frameworks thinking in some manner, while safeguarding the notion of frameworks at its center in various ways [6, 7]. Instructive Institutions have been slow to implement updated information preparation [8], Perhaps they did not understand data frameworks, or perhaps frameworks arranging was

ignored. More recently, efforts have been undertaken to adapt the decentralized system for the acquisition and assessment of instructive data at all levels of training. Management Information Systems is used in this technique to assist in the development of operational plans and the creation of budgets for use. It is anticipated that the deployment of Management Information System in instructional administration will play a substantial role in the decentralization method by ensuring that training arrangement turns out to be more effective and reactive to local demands [5]. Management data frameworks differ from ordinary data frameworks in that they are used to deconstruct other data frameworks used in operational exercises in the organization [9]. The board of Information Systems is also supporting changes that are taking place in several parts of the training system, notably in non-formal education and higher education. Non-formal education is one means through which Jordan might make progress toward its achievement goals. As a result, the education ministry has purposefully built structures and mechanisms to aid screen progress toward predetermined objectives and to recompense providers that meet such targets. It also collects, evaluates, and examines information from colleges and polytechnics, which is then used to calculate funding levels for the region [10]. The goal behind this research is to dissect the one-of-a-kind role the executives' data structure plays in

*Corresponding author e-mail: basel.ali@asu.edu.bh

Education the board, with a focus on tertiary organizations, and the role they play in preparing understudies for the activity advocated.

2. Literature Review

The application of management information systems in the organization achieves a set of benefits for the organization, and discussing the existence of these benefits confirms that the establishment's actual use of these systems will give it a competitive advantage in the way it carries out its activities and effectiveness, [5, 11] and thus achieves the goals it wants to achieve in all administrative levels and the fulfillment of its functions in planning and coordination [2, 12]. And, in order to carry out these responsibilities of organization and decision-making efficiently and effectively, it need information on a constant and permanent basis.

Information systems are one of the most important components of modern technology, which includes a set of important points with positive impacts on human life, according to a set of organizational effects of information systems that contribute to increasing the importance of information systems in our lives [13-16], as information systems enable and strengthen basic organizational capabilities. Furthermore, information systems support business processes that contribute to individual and group decision-making [15, 16], and one of the most important aspects of information systems is that they provide a set of practical and advanced innovations that improve and develop relationships with customers, suppliers, and partners, as well as companies and institutions [17, 18].

One of the most important aspects of the importance of information systems in our lives is the possibility that the use of information systems based on web networks can significantly reduce the costs [19] of communication between workers and employees on one side and companies and institutions on the other [20], in addition to improving supply chain or network coordination. Information systems contribute to the formation of a new and advanced set of organizational structures in a cost-effective manner [21], and information systems also have a number of positive impacts in the economy and society, as network-based information systems are a factor in the economic growth of international businesses and companies [2, 15, 16, 22]. There is a relationship between information systems and increasing productivity; the more information systems that are used, the higher the productivity [2, 14, 23]; and technologically, access to information systems via the Internet is required for full participation in modern society, with the Internet serving as a basic means of human communication and a repository of shared knowledge [24], and information systems are studied as a field. It is utilized in the development and research of theory, techniques, and systems for utilizing information technology to run and manage businesses and support their sales and marketing offers in the market, hence raising the proportion of sales on these offers.

Management of information systems The management of information systems is based on the planning of a set of basic resources that will be used in the implementation of information services to support its operations or to innovate by launching a set of new resources, as planning is one of the most important factors that contribute to the increasing importance of information systems in our lives [5, 25]. The formation of new and specific resources in a cohesive structure in order to provide a set of necessary information services, and some companies and institutions rely on specialized external information technology companies to provide some or all of their information services, and information systems rely on a well-designed infrastructure on a coherent basis. When new business or management initiatives develop, it is important to support responsive and dynamic change [22]. In order to deal with the initiatives and processes of strategic companies, the establishment of this infrastructure requires extensive planning and distinct implementation, and the information services of an organization or company are provided by an external company, an internal unit, or a combination of the two, as outsourcing of information services helps in Achieving a set of economic and administrative objectives such as cost savings, access to superior staff, and a focus on core competencies, and commercial companies depend on the worldwide Internet because of its infusion in commercial company operation and administration [26]. As a result, Internet networks need a secure information system in charge of the security of operating system resources and activities, where information security is also one of the most essential aspects in enhancing the value of information systems in modern society [27]. Extensive research in the area of MIS connected to educational institutions is conducted in order to identify the research gap and develop the conceptual framework for this study. [2, 28] Because of its productivity and suitability, the application of data innovation in educational administration has rapidly grown. The main rationale and usage of the board data frameworks (MIS) in the early stages of its development was to boost the productivity of school office activities. It was used to hold information on understudies and employees. The greatest worry was that the focus was on information segment and grouping rather than information movement or examination [23]. MIS has altered the school board in the areas of authority, fundamental leadership, staying work at hand, human asset the board, communication, obligation, and arranging. These frameworks may assist the school director in selecting the school's points, developing critical plans, allocating assets, and measuring personnel execution as well as authoritative accomplishment [29]. Often, firms fail to capitalize on any of the potential benefits of Management Information Systems (MIS). [5] said that today, the rapid expansion of IT and its major influence on the competitiveness of public and commercial businesses throughout the globe, as well as the worldwide drive to employ different types of information systems, especially Management Information System (MIS), has pushed

developed nations to follow suit. According to the findings, most firms are migrating toward a higher competitive value of MIS. As a consequence, MIS administrators adopt a more holistic approach to MIS, prioritizing problems affecting the whole organization above those affecting solely the MIS department.

[30] investigated the influence of management information system (sim) on aparatur performance and kuala village institutions. The study's findings revealed that the Management Information System (SIM) influenced the performance of apparatus and social institutions in Kuala Kilan Village, Batang Cenaku Subdistrict, Indragiri Hulu Regency; the computed t value was more than the t table ($4,875 > 2,03951$). Based on the data testing criteria, it can be observed that H_0 is rejected and H_a is approved, indicating that the Management Information System (SIM) impacts the Performance of Apparatus and Community Institutions to some extent.

[31] examined influence of the value of management information system applications in enhancing the performance of public institutions. Additionally, the findings indicate that (System and Information Quality) and (Organizational Service Quality) have the greatest and least impact on organizational performance, respectively. Similarly, the correlation coefficient between Organization Performance and each of the expected variables is positive and somewhat high, with the strongest association being between (Organization Performance) and (System and Information Quality). To ensure the university's management information system is implemented effectively and successfully, as well as to improve the organization's and employee's performance, it is recommended that the university's administration continuously upgrade the existing management information system and implement a training program for all administrative staff.

A substantial impact of MIS on school management and administration has been emphasized as a reduction in burden, good effects on time management, and a rise in report quality [32, 33]. During the early phases, the primary goal of software development and usage was to improve the quality of school office operations. Computers and technology were primarily used in educational institutions to store student and staff data [34].

[35] gathered a series of studies from various countries that illustrated important features of computerized school information and management systems, their implementation in various schools, the effects of this implementation, and potential implications for future research. Their studies provide the most comprehensive picture of ICT and school administration from the standpoint of MIS. However, it was clear from their research that the primary focus was on data input and collation, rather than data transfer or analysis. [36, 37] thought that MIS has altered school administration in the areas of leadership, decision-making, workload, human resource management, communication, accountability, and preparedness. Such systems will assist the school management in identifying the school's goals, developing strategic plans, allocating resources, and evaluating staff

performance and organizational effectiveness. [38] focused on the effect on MIS usage on school administration abilities. Their study looked at the function of assisting in bringing about such processes, as well as the consequences for the future. However, it was evident that the interaction between data collecting and collation and data usage was an important element to examine, since school administrators need significantly different research methods than instructor.

Research Gap

There have been no studies that examine academics' employment profiles, particular their educational qualifications and their MIS-related performance.

There are no studies on Al-Balqa University, which is one of Jordan's major institutions.

There has been little research on the association between MIS parameters and organizational performance.

Conceptual framework:

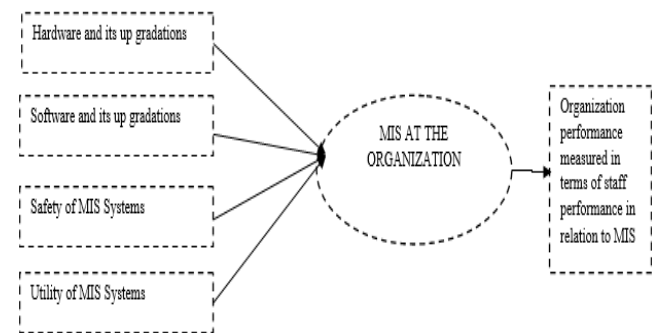


Figure 1. Model of the study

Statement of the problem

Jordan has experienced an increase in the usage of MIS, technology in the education sector during the previous 10-12 years. There is a perceived benefit to be used MIS, technology in the education industry since it improves Academicians' performance in presenting knowledge to pupils. Various studies have been conducted to determine the results of the installation and use of MIS technology in academic sectors. The elements that affect the better execution and exploitation of this technology are planned to be explored, and its effect on the performance of the institutions will be further examined.

Research Hypothesis

H1: There is a significant difference in MIS related performance based on job profiles (education or qualification).

H2: There is a significant association between MIS, technology factors and organization performance.

3. Methods used for data analysis:

Sample size: Population: Al-Balqa Applied University, has academic staff strength of 1469 employees and 43,000 students across Jordon as on 2018. This study will focus on the academic staff and their performance in relation to MIS

Determination of sample size: The sample size of the academic staff for the study is ascertained by using the sample size determination formula proposed by Cochran. The sample size is computed by assuming the finite population of academic staff at Balqa University; hence the formula for sample size of the finite population is given as follows:

$$n = \frac{\frac{z^2 * p(1-p)}{e^2}}{1 + \left(\frac{z^2 * p(1-p)}{e^2 N}\right)} = \frac{\frac{1.959964^2 * 0.5(1-0.5)}{0.075^2}}{1 + \left(\frac{1.959964^2 * 0.5(1-0.5)}{0.075^2 * 1469}\right)}$$

= 140 Academic staff (10 colleges*14Faculty members)

Data collection tools and techniques:

Data will be collected by designing a structured questionnaire, the questionnaire will be divided into three parts. PART A- Personal and job information – Multiple choice and open ended questions, PART B- Independent variables- Hardware and software facilities, Safety on MIS systems and utility or usability of MIS systems- Likert scale of agreement statements, PART C- Dependent variables- Performance of the staff through self-assessment statements

Statistical tools for data analysis:

The following statistical tests will be used

1. Determine the validity and reliability of the statements – Crobanch's Alpha
2. Study the impact of Independent variables on Dependent variables - Regression analysis
3. Study the difference MIS related performance based on job profiles (education or qualification) – ANOVA

4. Analysis and interpretations:

Reliability analysis: The crobanch's Alpha is used to assess the dependability and internal consistency of the data gathering tools. The test findings are exceptional because they exceed the anticipated requirements for excellence. The crobanch's alpha is 0.918, indicating that the questionnaire is trustworthy and consistent.

Demographic Profile: According to the demographic profile of the respondents, there are 49 male respondents, accounting for 70% of the total, and the remaining 30% are female. Age is a significant element determining the application of technology in any sector. The majority of 72

responders (51%) are between the ages of 35 and 45, with 25.7 percent being above 45. The academic qualifications of the replies are critical. A majority of 66 faculty members had obtained their Ph.D., and 14 academicians had finished their post-doctoral work. Teaching assistants make up a larger proportion of the sample. 37.1 percent of those polled are assistant professors. The bulk of faculty members (40 percent) have more than 9 years of experience. In the following sections, the respondents' biographical characteristics will be linked to their usage of MIS technology and their performance.

MIS dimensions of the organization- Descriptive statistics:

The organization's MIS success is determined by the elements that impact the MIS operating in the organization. The researcher utilized statements on a Likert scale, with 1 indicating strong disagreement and 5 indicating strong agreement. The descriptive statistics in which the mean is the most significant score describing the respondents' thoughts on the aspects of MIS at their institution.

TABLE 1. Descriptive statistics of factors influencing MIS in the Institutions.

Descriptive Statistics	N	Min	Max	Mean	S/D
University colleges' hardware and software are up to date.	140	1	5	3.10	1.169
This university's hardware is subject to standard protection by the infrastructure and Information Technology section.	140	1	5	3.06	1.141
A senior executive at the university monitors progress toward modernizing the gear used.	140	1	5	2.93	.953
University personnel maintain a continual effort of updating the software used.	140	1	5	3.17	1.076
The university's	140	1	5	3.00	1.090

personnel are trained to utilize cutting-edge communication technologies.					
At the university, programs are available to help with the development of communication between departments.	140	1	5	3.00	1.063
Employees in information technology at the institution provide security and privacy while dealing with information.	140	1	5	3.01	.955
The University's information technology section provides a non-access element for programs that are only available to authorized individuals.	140	1	5	3.14	1.231
The software utilized at the institution ensures that stored data is neither influenced or pilfered.	140	1	5	3.21	1.203
Users may easily be educated to operate technological instruments used in the institution for a variety of objectives.	140	1	5	3.20	1.150
Its program is simple to use for university workers.	140	1	5	3.04	1.028
Devices accessible at the University's Information	140	1	5	3.87	1.034

Technology Unit are straightforward to use, even for non-professionals.					
Valid N (list wise)	140				

Source: Primary data

The following table shows that all values in the mean scores are more than 3.00, indicating that faculty members feel that all aspects of hardware, software, safety, and usefulness are satisfactory at the institution.

Hypothesis testing

H1: There is significant, difference in MIS related performance based on job profiles (education or qualification).

Table 2. ANOVA Statistics for MIS related performance based on job profiles (education or qualification):

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
The information accessible on MIS is sufficient to execute the task	Between Groups	1.721	3	.574	.462	.709
	Within Groups	168.822	136	1.241		
	Total	170.543	139			
Information systems enhance decision-making operations inside the administrative system while also improving staff performance.	Between Groups	2.937	3	.979	1.292	.280
	Within Groups	103.034	136	.758		
	Total	105.971	139			
MIS is a driving force for change at the institution.	Between Groups	5.464	3	1.821	1.938	.126
	Within Groups	127.822	136	.940		
	Total	133.286	139			
The usage of electronic databases in an information system improves performance.	Between Groups	1.344	3	.448	.417	.741
	Within Groups	146.199	136	1.075		
	Total	147.543	139			
MIS allows for the maximum application of one's skills.	Between Groups	3.666	3	1.222	1.051	.372
	Within Groups	158.077	136	1.162		
	Total	161.743	139			

Because it includes all necessary information, MIS increases teaching quality.	Between Groups	2.616	3	.872	.853	.408
	Within Groups	139.126	136	1.023		
	Total	141.743	139			

Table 5. Model summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.659a	.534	.510	.748
a. Predictors: (Constant), MISH, MISS				

From the above table it can be summarized that the Significance value of all performance items is above 0.05. There is no need for post hoc tests. Therefore, it can be inferred that there is no difference in MIS related performance based on job profiles (education or qualification).

H2: There is a significant association between MIS, technology factors and organization performance

The stated hypothesis of significant association between MIS, technology factors and organization is tested by using simple correlation coefficient and fitting the linear regression model.

TABLE 3 Descriptive statistics:

Descriptive Statistics			
	Mean	Std. Deviation	N
PF	4.10	.974	140
MISH	3.78	.764	140
MISS	3.62	1.086	140

The following Table shows that the mean value of PF - Performance, MISH- MIS Hardware, and MISS- MIS Software is more than three, indicating that all three constructs are agreed upon by the personnel in the research region.

TABLE 4. Correlations

Correlations				
		PF	MISH	MISS
Pearson Correlation	PF	1.000	.642	.696
	MISH	.642	1.000	.291
	MISS	.696	.291	1.000
Sig. (1-tailed)	PF	.	.001	.000
	MISH	.001	.	.020
	MISS	.000	.020	.
N	PF	140	140	140
	MISH	140	140	140
	MISS	140	140	140

The Karl Pearson Correlation coefficient of PF - Performance, MISH- MIS Hardware, and MISS- MIS Software is shown in the table above. The correlation coefficient values of 0.642 and 0.696 demonstrate a positive association between the three mentioned dimensions, and the correlation coefficient is statistically significant since its p value is .000.

Table 3.3 shows the regression model summary for PF - Performance, MISH- MIS Hardware, and MISS- MIS Software. The regression statistics of R square and adjusted R square values are more than 0.5, indicating that the model is well-fitting.

Table 6. ANOVA

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	28.119	2	14.060	24.741	.000b
	Residual	77.852	137	0.568		
	Total	105.971	139			
a. Dependent Variable: PF						
b. Predictors: (Constant), MISH, MISS						

The regression model of relational psychological contract and organizational commitment is statistically significant because the model's F value is 24.741 with 2 and 137 degrees of freedom is statistically significant since the p value is 0.00.

Table 7. Co-efficient

ANOVAa						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	28.119	2	14.060	24.741	.000b
	Residual	77.852	137	0.568		
	Total	105.971	139			
a. Dependent Variable: PF						
b. Predictors: (Constant), MISH, MISS						

5. Conclusion

According to the findings, Jordanian colleges are strongly advised to develop an unmistakable methodology for the MIS data framework in order to boost its presence and benefit most from its available abilities. Jordanian college

top administrators are encouraged to share all relevant data and experiences that could lead to dramatically better execution. This should be done by setting up a common system with each other.

Jordanian universities are strongly encouraged to give additional funds or, at the very least, a more adjustable work schedule to people (both scholarly and non-scholarly representational) who are able to continue with their higher education, which would drive better implementation.

Jordanian colleges' boards should set up an internal database to make sure that representatives get real, correct, trustworthy, suitable, and completed data from each other. This could lead to better execution adequacy and effectiveness.

The current evaluation examined the impressions of academic people. Non-academic evaluation is also important in understanding the role of the MIS data frameworks in institution execution; hence, future studies should investigate their sentiment by leading a review or top-to-bottom meetings with key workers of Jordanian institutions.

The use of management information systems in the organization results in a number of advantages, and discussing the presence of these advantages demonstrates that the use of these systems will provide the company with a competitive edge. Information systems help to develop a new and sophisticated set of organizational structures in a cost-effective way, and they have a variety of good effects on the economy and society. Information systems is a topic of study that focuses on the creation and research of ideas, methodologies, and systems for leveraging information technology. The greater the usage of information systems, the greater the productivity; access to information systems through the Internet is technologically essential for full participation in contemporary society. People who manage information systems start by planning how they'll use a set of basic resources to provide information to people.

In the early phases of its development, the major logic and application of the board data frameworks (MIS) was to increase the productivity of school office functions. The most concerning aspect was that the emphasis was on information segmentation and categorization rather than information mobility or inspection. MIS has influenced the school board in the areas of authority, essential leadership, being focused on the task at hand, communication, accountability, and planning. An investigation was conducted to assess the function of data innovation in boosting the presentation competence of the Free Zones Corporation Jordan. The investigation generated the following results:

Improvements were received in all areas, with a disparity in progression rates. There is no critical relationship between the size of the venture, equipment, programming, and

workers in the field of data innovation and the profitability of institutional display sites. The impact of MIS on school administration and management has been stressed as a decrease in load, positive impact on time management, and an increase in report quality. An evaluation of teacher workload revealed that ICT assisted some staff members in managing workload concerns. Strong leadership, good planning, technical support, and strong networks were all seen as good things when it came to dealing with a lot of work.

Participating institutions faced obstacles such as poor acceptance or support from untrained employees, exploitation of ICT facilities, and concerns related to the stringent procedural criteria required. Computerized school management systems (MIS) improve the site and district administration, empower personnel at all levels, and enhance a school's openness to the community it serves. When MIS obtains accurate and up-to-date information from school administrators, it is possible to make effective and timely decisions. North et al. (2000) investigated the impact of the MIS use on school administration skills. Such systems will help school administrators figure out the school's goals, write strategic plans, allocate resources, and evaluate staff performance.

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