

# Human Resource Information Systems in Jordanian Universities

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## Abstract

The main purposes of this study are to explore the extent to which public Jordanian universities have adopted Human Resource Information System (HRIS) and to examine the current HRIS uses, benefits and barriers in these universities. A structured questionnaire was constructed based on other previous studies, it also pre-tested, modified and translated to capture data from HRIS users in Jordanian universities. The main findings of this study revealed that the quick response and access to information were the main benefits of HRIS implementation. While, the insufficient financial support; difficulty in changing the organization's culture and lack of commitment from top managers were the main HRIS implementation barriers. The present study provides some insights into the performance and applications of HRIS in Jordanian universities that could help Human Resource Management (HRM) practitioners to get a better understanding of the current HRIS uses, benefits and problems, which in turn, will improve the effectiveness of HRIS in Jordanian universities.

**Keywords:** Human Resource Management, Human Resource Information systems, Jordanian universities

## 1. Introduction

Human Resource Information System (HRIS) is a concept concerning the utilization of Information Technology (IT) development and characteristics for effective managing of the Human Resource Management (HRM) functions and applications. HRIS is considered as a systematic procedure for collecting, storing, maintaining, and recovering data required by the organizations about their human resources, personnel activities and organizational characteristics (Kovach *et al.*, 2002). Kovach and Cathcart (1999) argue that HRIS varies among organizations in relation to their size; it can be informal as the payroll records and time cards in a small organization. For the huge organizations corporate success depend on the coordinated strategic management and integration of the company's HR and IT.

HRIS has different uses and benefits; good improved HRIS helps organization generally in managing all HR information. It also helps in recoding and analyzing employees and organizational information and documents, such as employee handbooks, emergency evacuation procedures, and safety procedure (Fletcher, 2005; Lee, 2008; Ball, 2001; Martinsons, 1994). HRIS has administration benefits as well including enrollment, position changes and personal information updating completely integrated with payroll and the other financial software and accounting systems in organization (Martinsons, 1994; Fletcher, 2005; Lee, 2008; Ball, 2001). Therefore, literature shows that HRIS has been used in many organization to support their daily HRM operations (Ball, 2001; Barron *et al.*, 2004; Hussain *et al.*, 2007; Ngai and Wat, 2006; Delorme and Arcand, 2010). However, HRIS should not be used only for administrative daily purposes but also for strategic decision-making purposes.

In the context of Jordanian organizations, personnel/ HRM and the types of IT their practitioners use have largely been neglected. In addition, the application of HRIS in Jordanian organizations confronts many problems and challenges as it is applied recently in Jordanian organizations. thus, this study seeks to achieve many important objectives. First it aims to explore the issues surrounding the uses and benefits of HRIS; second to examine the extent to which Jordanian universities have implemented or adopted HRIS; third to explore the current uses, benefits and barriers to HRIS implementation; fourth to examine statistically whether or not do HRIS benefits and barriers vary among Jordanian universities. Therefore, it could be argued that this study is

expected to contribute to the knowledge at practical level by helping HR\personnel practitioners to have a better understanding of the current benefits, uses, and barriers of HRIS implementation in Jordanian universities so that they could better manage HRIS in the future. In addition, this study is expected to fill the gap in HRM\HRIS literature through an empirical survey of the implementation of HRIS in Jordanian universities where there is truly needs for more research works to be conducted in these issues (Altarawneh, 2009; 2010).

## 2. Literature Review

### 2.1 HRIS Importance and Benefits

The emergence of Strategic HRM (SHRM) approach has created a real need for information about HR. Therefore; HR practitioners were encouraging to innovate in their IT usage, arguing that resulting new roles for the HR\personnel department as information center; internal consultant; changing agent; service provider; cost manager; business partner; facilitator; and consultant (Ball,2001). And regardless of some contradictory evidence (Hall and Torrington, 1998) suggestions of an increase in the strategic influence of HRM and continued shift of HR practices to the line (IES/IPD, 1997) implies an imperative roles for HRIS in sustaining the HR department and increasing its importance to the organization (Ball,2001).

The literature shows a variance in the analysis of HRIS usage with at least two extremes of use (Ball, 2001). In this regards, Kovach and Cathcart, (1999) and Kovach *et al.* (2002) argue that HRIS information could be used for administrative purposes that reduce costs and time; HRIS is used according to them also for more analytical decision support. Furthermore, Martinsons (1994) identified different type of HRIS usages based on its degree of sophistication. He classified payroll and benefits administration, keeping of employee and absence records electronically as unsophisticated HRIS usage; he also describes this as simple-minded automation. On the other hand, Martinsons (1994) characterized the usage of HRIS in recruitment and selection, Training and Development (T&D), HR planning and performance appraisal as sophisticated, as the generated information is important and used to provide support for important HRM decisions.

Practically, organizations are hesitated to apply HRIS unless they are convinced of the benefits that this would bring to their organizations (Ngai and Wat, 2006). The most common benefits of HRIS include improved accuracy, the provision of timely and quick access to information, and the saving of costs (Teze, 1973; Will and Hammond, 1981; Lederer, 1984; Ngai and Wat, 2006). In a similar vein, Beckers and Bsath (2002) five reasons, which justify why organizations should use HRIS. These reasons related to the facts that HRIS helps organizations: 1) to increase competitiveness by developing and enhancing HR procedures and activities; 2) to generate or create a greater and a range of many HRM reports; 3) to shift the role of HRM from transactions to (SHRM); and 4) to reengineer the whole HRM\personnel department\section of organizations. Moreover, HRIS can be used to support strategic decision making, to evaluate programs or policies, or to support daily operating concerns (Kundu *et al.*, 2007).

In the context of higher education institutions, Rawat (2008) states that the efficiency and effectiveness – quality of an HRIS will enable universities to format a profile of their staff – their strengths and weaknesses, so they will know what they have in the personnel sense. Accordingly, they will be able to structure appropriate development promotion training and recruitment. Therefore, then, right people will be in the right place at right time-quality human resource and personnel management.

Rawat (2008) also argues that nowadays higher education institutions face a significant task; improving learning environments at the same time, reducing administrative operating cost. Moreover, the ability to effectively budget for and managing different types of employees, recruiting and retaining skilled members requires full integration of HR data with student information systems. Therefore, with so many demands, higher education institutions need a powerful business solution that will help them managing student, graduates and employment information and financial data. Therefore, application of HRIS system in higher education institutions provide the utmost updateability use of resources, speed, compatibility, updateability, accessibility, data integrity, privacy and security (Rawat, 2008)

### 2.2 HRIS Implementation Barriers

The literature of HRIS implementation shows that many organizations have problems when implementing new technologies including HRIS, due to many barriers. These barriers include: 1) lack of sufficient capital and skills (Ngai and Wat, 2006). 2) cost of setting up and maintaining HRIS (Bekers and Bsath, 2002). 3) a lack of money; 4) a lack top management support and commitment. 5) a lack of HR knowledge by system designers; 6) the lack of applications for HR users (Kovach and Cathcart, 1999). 7) A lack of qualified HRIS staff; lack of a HRIS budget;

8) a lack of cooperation with other departments; 9) the lack of information technology support (Institute of Management and Administration, 2002).

The relationship between organizational size and HRIS usage acknowledge by many scholars. For example, Ball (2001) justifies the low-level usage of HRIS output by HR practitioners by organizational size, HRIS time in use, organization culture and strategy, and IT skills. In addition, Thaler-Carter (1998) argues that there are two primary differences between small and large organizations acquiring a HRIS: the cost and the risk. He argues that small organizations do not need a complex sophisticated HRIS as larger organizations need, and in many times small organizations would not be able to afford the complex organization resource planning systems. Risk is more persistent since small organizations may find it more difficult to absorb downtime, training required, time and problems related with adopting new software (Ball, 2001).

### 2.3 Previous Studies in HRIS

The literature shows many previous related studies in HRIS; however, most of them were theoretical (Ngai and Wat, 2006). In addition, all the revealed studies were conducted in the context of developed countries' organizations and sites. Ngai and Wat in (2006) conducted a survey of the implementation of HRIS in Hong Kong organizations, they found that the greatest benefits to the implementation of HRIS was the quick response and access to information that it brought while the greatest barrier was the insufficient financial support. In addition, Ngai and Wat (2006) reported many other previous related studies conducted in HRIS implementation. For example, a study of Martinson's in (1994) aimed to compare the degree and sophistication in the use of IT between Canada and Hong Kong; he found that the use of HRIS was less widespread in Hong Kong than do in Canada, while IT for HRM was applied in Hong Kong than in Canada. Ball in (2001) conducted a survey aimed to explore the uses of SHIR in smaller UK organizations; she found that smaller organizations are less likely to use HRIS.

Moreover, Burbach and Dundon conducted a study in (2005) aimed to assess the strategic potential of HRIS to facilitate people management activities in 520 organizations in the Republic of Ireland. They found that foreign owned large organizations adopt HRIS largely than smaller Irish owned organizations. They also found that HRIS technologies are used for administrative rather than strategic decision-making purposes.. Another recent study conducted by Delorme and Arcand in (2010) aimed to elaborate on the development of the roles and responsibilities of HR practitioners from a traditional perspective to a strategic perspective found that the introduction of new technologies in the organization affect the way HR professionals accomplish their tasks within the HR department and the rest of the organization. Krishnan and Singh (2006) study aimed to explore the issues and barriers faced by nine Indian organizations in implementing and managing HRIS. The main HRIS problems were HR department lack of knowledge about HRIS and lack of importance given to HR department in the organizations. Another concern is the level of cooperation required across various functions and divisions of the organization for proper implementation of HRIS is also lacking.

It could be argued that all of these studies focused on the status of HRIS and its uses and implementation, however, little research has been conducted to examine the benefits and barriers of HRIS implementation. Importantly, nothing has been found related to HRIS in Middle East organizations including Jordanian organizations. Thus, this study is a timely and important one as it examines the status of HRIS in Jordanian organizations, where no previous studies conducted before.

## 3. Methodology

### 3.1 Sample and Study Population

Jordan is a small Arab country located in the Middle East. It occupies a strategic geographical location northwest of Saudi Arabia, to the north by Syria, to the east by Iraq and by Israel and West Bank in the west. In spite of popular the perception of the Middle East region, Jordan has no oil and few natural resources. The country is potentially highly vulnerable to external shocks, given its size and natural resource endowment. Despite this fact, Jordan ranks well on the Global competitiveness index and its 2008 ranking is 46 out of the 134 countries reported on (Fischer *et al.*, 2009).

Although it has scarce natural resources, Jordan has some competitive advantageous factors, which include the following (REACH, 2000, Al-Jaghoub and Wetrup, 2003, Department of statistics, 2006, and Jordan, the official site of the Jordanian E-Government, 2008):

- Educated hard working human resources
- Enlightened leadership

- High youth rate of the population, which is 51.7%
- Supportive friends around the world

Education has been declared a priority of Jordanian government for a number of years. The government put massive efforts on education as the way by which it develops its HR; the primary country resource. However, the government's good intentions in the area of education were constrained with the hard country's financial circumstances, a rapidly changing labour force, and the demographic problem of a youthful population. Education has become widely available to all Jordanian people. There are seven public and 18 private universities spread throughout Jordanian cities (2010 university web ranking). The population of this study includes all HRIS users in all Jordanian public universities. The decision was made to include the whole population rather than a representative sample, since the population was small; it includes just (230) HRIS users who worked in the targeted universities during the survey.

### 3.2 Research Method

A self-administered structured questionnaire constructed based on other related previous studies particularly on Ngai and Wat in (2006) and Ball (2001), was used to examine the adoption of HRIS in Jordanian universities. However, the questionnaire was pre-tested, modified, translated into Arabic and used to capture data on a cross-section of HRIS users in the Jordanian universities. The questionnaire was also, pilot-tested by some of HRM practitioners, academicians and HRIS consultants at Al-Hussein Bin Talal and Mu'tah universities. Based on the comments from the pilot-test, the questionnaire was modified and a final questionnaire was developed then distributed. The details items and scales are presented fully in the following points:

1. **General information:** this section included general questions about the surveyed universities, participant's profile, and the profiles HRIS usage. It included questions related to the university name; size; participant's job title; academic qualification; work experiences; and age. It also asked whether the university has a particular department for HRM; whether the university has adopted HRIS yet, if yes, for how long, and whether HRIS have a particular budget or not.
2. **HRIS applications:** this scale contained 15 HRIS applications and asked participants to indicate the extent to which do their universities apply HRIS on those activities. Responses ranged from 1= to a large extent to 4= not applied or used at all.
3. **HRIS barriers:** items used to measure HRIS barriers were adapted from Ngai and Wat (2006) to fit the study context, and were used elsewhere. In total, eleven barriers were measured on a five points Likert scale where responses ranged from 5= strongly disagree to 1= strongly agree. Each item asked the participants to indicate their agreement about the existence of the measured HRIS barriers in their universities.
4. **HRIS benefits:** this scale included eleven items used to measure HRIS benefits, it were also adapted from Ngai and Wat (2006). Five points Likert scale were used with responses ranged from 5= strongly disagree to 1= strongly agree. Each item asked participants to indicate their agreement about the measured HRIS benefits from their point of views.

### 3.3 Procedures

A survey questionnaire should include a covering letter explaining the purposes of the study, assuring the confidentiality of responses, and directions on how to complete the questions (Sunders *et al.*, 2009). The present study followed this approach, since the covering letter of the questionnaire included general instructions, a statement assuring confidentiality and demographical section. The first author personally distributed (230) self-administrated structured questionnaires to HRIS users in the surveyed universities during four months. She explained the objectives of the study in order to establish trust as has been suggested by Sunders *et al.* (2009). Respondents were free to choose to hand back the questionnaire to her or via the post. Therefore, 230 questionnaires were distributed and 174 were returned with an effective response rate of 75.65%.

## 4. Findings

### 4.1 General Descriptive Results

#### 4.1.1 Participants' Profile

Table 1 presents the profile of the study participants. Of the 174 HRIS users participated in the survey, 59% declared that they use a computer in their daily work hours in relation to HR activities. Roughly, 47% of them had a bachelor's degree, 26 had master degrees, and interestingly 12 of them had PhD degrees. 62 % had more

than five year of work experiences with an average age of 35 years, that is to say participants were middle-aged and highly educated people.

#### 4.1.2 Universities' Profile

Table 2 shows the profile of the surveyed universities. Of the 174 participants, 20% were from Jordan university, 13% from Al-Yarmouk university, 12% were from Science and Technology university and just about 6% were from Al-Hussein bin Talal university, 7.7% were from Al-Tafila Technical university and 10% were from Mu'tah university. Almost 76% said that they belonged to a university that employs more than 1000 employees, in other words large university.

#### 4.1.3 HRIS Usage Profiles

Table 2 provides HRIS usage profiles. Almost 77.3% of the participants declared that their universities had a separate HR department/division or unit. However, just 30.5% indicated that HR departments in their universities employed 21 or more employees. 30 % indicated that their HR departments employed between (11-20) employees. Moreover, 59% indicated that their universities had adopted HRIS; half of them said that they had implemented HRIS for more than five years ago.

Participants were also asked to indicate the extent to which do their universities use some HRIS applications. The results shown in Table 3, indicate that the major HRIS application is to provide general information about current workforce (mean=1.43). However, they indicated a moderate use for HRIS in absence monitoring, payroll services, and employment leave.

#### 4.2 HRIS Implementation Benefits

Table 4 shows the mean ratings of the benefits achievable through the implementation of HRIS. The perception of benefits was rated on a five-point scale; with 5 being "strongly disagree" and 1 being "strongly agree". Based on the responses, benefits with a mean rating are all less than 3 on the five-point scale. As it shown in Table 4 quick response and access to information was the main perceived benefits that had the lowest mean score of 1.58. This agrees with the opinion of some researchers, who also found that HRIS provides timely and quick access to information (Lederer, 1984; Tetz, 1973; Ngai and Wat, 2006). While, the highest mean scores were achieved by reducing paperwork and streamlining HR processes at 1.92 and 2.26, indicating that from the participants point of views HRIS do not help in reducing the paperwork or in streamlining HR processes. As it shown in Table 4, participants agreed on all of the listed HRIS benefits.

#### 4.3 Barriers to the Adoption of HRIS

Participants' perception of HRIS implementation barriers was investigated by asking them to rate each of ten potential barriers shown in Table 5. The results shown in Table 5 indicate the mean ratings of the HRIS implementation barriers rated on a five-point scale, with 5 being "strongly disagree" and 1 being "strongly agree". Based on their responses, barriers with a mean rating are all less than 3 on the five-point scale indicating participants' agreements on HRIS implementation barriers. However, Table 5 shows that the greatest barrier to the adoption of HRIS was the insufficient financial support at mean score of 1.53, followed by difficulty in changing the organization's culture of doing work 1.69. On the other hand, the potential barrier inadequate knowledge in implementing the system had the highest mean score (3.32) suggested that there was no problem related to knowledge needed to implement HRIS, this could be explained by the results showed that HRIS user were well educated.

#### 4.4 HRIS Perceived Benefits and Barriers among Universities

One of the study objectives was to assess differences among Jordanian universities in terms of perceived HRIS benefits and barriers. This has been done based on which university participants worked in (sorting name of the university); university size and time that HRIS has been used in the university. Considering the fact that there is no universally accepted definition of a small and medium-sized enterprise (Ngai and Wat, 2006), this study defined a small-sized organization as one that has 1-49 employees and a medium-sized one as one that has 50-500 employees, while the large that employs more than 1000 employees.

To assess the differences among universities in term of the perceived HRIS benefits and barriers based on their size, one-way analysis of variance (ANOVA) test was applied to compare the means of the participants' perceived HRIS implementation benefits and barriers and determine if there were any significant differences among small, medium, and large universities. As it shown in Table 6, there were no significant differences among universities in terms of perceived HRIS benefits and barriers based on their size.

Moreover, ANOVA test was used to measure the differences among the universities in term of the perceived HRIS benefits and barriers based on their sorting (name). The results shown in Table 7 indicated slightly significant differences among universities in terms of the perceived benefits and barriers based on what university participants worked in. The results suggest that universities were varied in the following challenges: lack of expertise in IT, inadequate knowledge in implementing the system, lack of commitment from top managers, no suitable HRIS or software, difficulty in changing the organization's culture, employees fearful of changing the way they do things, not perceived as an advantage at all. In addition, they were varied in the following benefits: improving data control, reducing data reentry and data may be used immediately, allowing for fewer errors, standardizing programmes and procedures, tracking and controlling the different HR functions.

However, the results showed that there was no significant differences among universities on the following aspects: insufficient financial support, lack of commitment and involvement by all employees; quick responses and access to information; streamlining HR processes; reducing paperwork; reducing manpower; helping to make more informed informal decisions; improving employment services.

Kruskal-Wallis Test was applied to examine whether HRIS perceived benefits and barriers varied among universities in relation to the time HRIS has been in place. As it shown in Table 8, the results suggested that there were significant differences among universities in relation to the years of HRIS implementation on the following challenges: lack of expertise in IT, inadequate knowledge in implementing the system, no suitable HRIS or software and no differences among universities on the other challenges and benefits. That is to say, the time of HRIS implementation explained differences among universities in the above challenges and benefits, and by time the situation could be different.

## 5. Discussion

The main purposes of this study are to explore the extent to which public Jordanian universities have adopted HRIS and to examine the current HRIS implementation uses, benefits, applications and barriers in these universities. The results presented in Table 1 indicated that HRIS users; the people who apply HRIS in Jordanian universities were middle-aged and highly educated people with more than five years work experiences. This could be explained by the fact mentioned previously that in Jordan education is highly valued and appreciated in Jordanian society, as the government has promoted the value of education as the way for a better respectable live.

Interestingly, the majority of the participants indicated that their universities had a separate HR\personnel department\division that employed more than 11 members of staff. Add to this the finding that all of the surveyed universities employed 1000 or more employees. These findings suggest that in spite of the size of the surveyed universities, which was large for all of them, HR\personnel departments\sections in these universities were medium to small. This could question their roles, activities and functions, as it is expected that as the organizations becoming larger, HRM\personnel departments\sections' functions and activities should become more complex and sophisticated therefore, much bigger.

Importantly, the majority of participants indicated that HRIS were adopted for general employment information, absence monitoring and payroll services. As with previous studies, the purposes to which HRIS are applied are for the computerization of different HRM activities rather than for decision-support (Ball, 2001; Kovach and Cathcart, 1999; Kovach *et al.*, 2002; Ngai and Wat, 2006; Hussain *et al.*, 2007; Delorme and Arcand, 2010). The findings presented in Tables 2 and 3 regarding to HRIS usage profiles highlight the fact that although there were a good investment in HRIS as the majority of the universities have adopted HRIS, the current uses of HRIS were modest and for some simple routine administrative purposes. That means that there is no actual utilization for HRIS software, which as mentioned in the literature could help in saving cost, increasing competitiveness and shifting the role of HRM from transactions to SHRM. In this context, Ball (2001); Ngai and Wat (2006) and Kovach *et al.*(2002) argue that HRIS should not only designed to automate HRM activities to gain administrative advantages rather it should be also used for decision making and to provide strategic advantages for organizations.

Identifying the current achievable HRIS benefits and challenges were one of the primary objectives for this study. Based on the statistical results shown in Tables 4 the major benefits of HRIS implementation were its quick response and the access it provides to employment information. While, reducing paperwork and streamlining HR processes were the less perceived benefits of HRIS implementation. In addition, the results presented in Table 4 suggest that participants agreed on all of the listed HRIS benefits. Based on the above-mentioned findings it could be argued HRIS does not help in reducing the paperwork and in streamlining HR processes in Jordanian surveyed universities. However, important to say those participants' responses on the perceived HRIS benefits

may reflect their personal opinions or point of views on HRIS benefits not the actual achievable HRIS in their organizations.

The findings presented in Table 5 suggest that the greatest barriers to the implementation of HRIS were insufficient financial support; difficulty in changing the organization's culture; lack of commitment from top managers. That could be explained by the facts that most of Jordanian universities confront financial crisis in general and they face a lack of budget, money to design and develop HRIS or any other HRM applications. The other important factors that need to be highlighted and that could affect negatively most of managerial activities, including the implementation of HRIS in Arab organizations, are the social-cultural factors, which shape the way people think, act and behave (Altarawneh, 2005; 2009; 2010). Therefore, in order to promote the smooth adoption of HRIS in universities, it is necessary first to ensure the financial and non-financial support to set up a HRIS, a managerial commitment, compulsion and control are required to ensure a complete adoption of HRIS.

Moreover, the support of top management is one of the most important factors for successful implementation of HRIS (Kovach and Cathcart, 1999). Top management takes primary responsibility for providing sufficient financial support and adequate resources for building a successful HRIS. The lack of financial support and adequate resources will inevitably lead to failure. A comprehensive HRIS requires a sizeable budget to implement and maintain. If top managements do not understand how the HRIS bring the benefits to the organization, they will not be willing to allocate valuable resources, time and efforts of implementation (Ngai and Wat, 2006).

The fourth objective of the study was to compare differences among universities in terms of HRIS perceived benefits and barriers based on university's size, sorting, and time that HRIS being in use. Interestingly, the study found no significant differences among universities on the perceived benefits and barriers of implementing HRIS by university size. One explanation for this is that all the participated universities were employed more than 1000 employees. That is to say, all of them were large organizations. However, statistical significant differences were found based on the university sorting as it shown in Table 7, it was found that most of the perceived benefits and barriers varied significantly by the university sorting or name.

One explanation for the above finding is that regardless of the size of the university, there are many other classifications variables that make Jordanian universities different, such as number of students; university's age; financial and non financial resources; organizational culture; and the location of the university. Instead of targeting all of these variables the study, use one question: what is the university you work in? This question supposes to include all of above-mentioned variables. Interestingly, the results suggested that universities were varied in the following challenges: lack of expertise in IT, inadequate knowledge in implementing the system, lack of commitment from top managers, no suitable HRIS or software, difficulty in changing the organization's culture, employees fearful of changing the way they do things, not perceived as an advantage at all. In addition, they were varied in the following benefits: improving data control, reducing data reentry and data may be used immediately, allowing for fewer errors, standardizing programmes and procedures, tracking and controlling the different HR functions. Importantly, the revealed findings from Table 7 suggest that all universities suffered from low financial support for HRIS; since it is a costly software. In addition, all suffer from lack of commitment and involvement by all employees and managers.

## 6. Conclusions

Based on the above-discussed findings, three outstanding conclusions can be made. First, despite the investment of HRIS in the surveyed Jordanian universities, HRIS in Jordanian universities is adopted to automate HRM activities in order to obtain some general administrative routine purposes. Namely, for employment information, absence monitoring and payroll services, rather than for decision making to provide strategic advantages and benefits for organizations. Second, the major benefits of HRIS are its quick response and the access it provides to information. Third, insufficient financial support; difficulty in changing the organization's culture; lack of commitment from top managers were the main barriers to HRIS implementation.

The present study has many important implications for HR practitioners and top managers in the surveyed universities. First, this study is expected to be helpful to the managers in planning to and implementing HRIS where extensive attentions need be given to the applications of HRIS, to be focused on aspects required for supporting decision making process, rather than being just for some administrative applications. Second, HR managers should play a proactive role to support HRIS implementation in their organizations. They should convince top managers and other line managers of the importance of HRIS implementation, so that time and budget required for implementing HRIS could be gained. They also have to allocate time and budget to train people on how to use and leverage the uses of HRIS, and on how to gain competitive advantage through HRIS.

Third, top managers need to be convinced by the values and the strategic benefits of HRIS in order to grant the required financial and non-financial support for HRIS implementation. That of course, implies further promotional efforts as well as, an action plan conducted by HRM staff to demonstrate the real advantages of using HRIS if top management is to become aware of the benefits that can be achieved from implementing HRIS.

Academically, the present study has important implications for studies aimed to understanding HRM, HRIS implementation in developing countries. However, explanations of several findings above indicate importance of contextual factors within organization and its environment. By highlighting the significance of several contextual factors, this study also hopes to expand the focus of HRIS.

This study provides some insights into the implementation of HRIS by Jordanian public universities which should help HR practitioners acquire a better understanding of the current HRIS implementation status, applications, benefits, and barriers. Further research should address the status HRIS in the private Jordanian universities and or in other Jordanian sectors where there is a real need for much work to be conducted in many issues related to HRM and HRIS.

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Table 1. Profile of the study participants

		Frequencies	Percent
Using computers related to HR activities during work hours	Yes	130	59.1
	No	44	20.0
	Total	174	79.1
Education	Less than high school	6	2.7
	High school	13	5.9
	Bachelor B.A	102	46.4
	Master	26	11.8
	PhD	12	5.5
	Diploma	15	6.8
	Total	174	79.1
Work experience	4 years or less	34	15.5
	5-9 years	48	21.8
	10-14 years	45	20.5
	15-19 years	40	18.2
	More than 20 years	7	3.2
	Total	174	79.1

Table 2. HRIS usage profile

		Frequencies	Percent
University	Al-Hussein bin Talal	13	5.9
	Tafila Technical	17	7.7
	Mu'tah	22	10.0
	Jordan	44	20.0
	Yarmouk	30	13.6
	Al-Hashemite	21	9.5
	Science and Technology	27	12.3
	Total	174	79.1
Number of employees	200-499	3	1.4
	500-999	3	1.4
	More than 1000	168	76.4
	Total	174	79.1
Has a separate HR department or division	Yes	170	77.3
	No	4	1.8
	Total	174	79.1
Number of employees in HR department	5 or Less	2	.9
	6-10	38	17.3
	11-15	26	11.8
	16-20	41	18.6
	21 or More	67	30.5
	Total	174	79.1

Table 3. The major applications used in HRIS

HR applications	N	Mean	Std. Deviation	Rank
Current employees information (files)	174	1.43	.907	1
absence monitoring	172	1.57	.810	2
Payment and salary	172	1.59	.878	3
Employment leave	174	1.63	.827	4
Disciplining procedures	173	2.12	1.058	5
Job analysis and work design	174	2.42	.841	6
Promotion	174	2.50	1.527	7
Staffing	174	2.52	1.106	8
HR planning	172	2.74	.861	9
Transfer	169	2.78	.974	10
Performance appraisal and review	173	2.86	.904	11
Training and development	173	2.88	.884	12
Compensation	171	2.89	.917	13
HR job budgets	168	2.93	.873	14
Employment reward	172	2.99	1.068	15

1= to a large extent, 4= not applied or used at all.

Table 4. Mean ratings of the benefits achievable through the adoption of HRIS

	N	Mean	Std. Deviation	Ranking
Quick responses and access to information	170	1.58	.840	1
Improving data control	170	1.63	.869	2
Reducing data reentry and data may be used immediately	170	1.65	.887	3
Allowing for fewer errors	170	1.68	.887	4
Improving employment services	173	1.71	.863	5
Reducing manpower	170	1.74	.901	6
Tracking and controlling the different HR function	171	1.74	.883	7
Helping to make more informed informal decisions	172	1.84	.881	8
Standardizing programmes and procedures	169	1.90	.992	9
Reducing paperwork	174	1.92	.850	10
Streamlining HR processes	170	2.26	.952	11

5= strongly disagree, 1= strongly agree

Table 5. Mean ratings of the greatest barrier to the adoption of HRIS

	N	Mean	Std. Deviation	Ranking
Insufficient financial support	171	1.53	.777	1
Difficulty in changing the organization's culture	171	1.69	.978	2
A lot of paper work that is difficult to computerize	171	2.12	1.219	3
No suitable HRIS or software	171	2.18	1.146	4
Lack of commitment from top managers	172	2.39	1.304	5
Lack of commitment and involvement by all employees	172	3.14	1.239	6
Fearful of changing the way they do things	173	3.15	1.262	7
Lack of expertise in IT	174	3.24	1.258	8
Not perceived as an advantage at all	174	3.25	1.279	9
Inadequate knowledge in implementing the system	174	3.32	1.262	10

5= strongly disagree, 1= strongly agree

Table 6. ANOVA test for difference among universities based on size

		Sum of Squares	df	Mean Square	F	Sig.
Insufficient financial support	Between Groups	.898	2	.449	.742	.478
	Within Groups	101.733	168	.606		
	Total	102.632	170			
Lack of expertise in IT	Between Groups	7.344	2	3.672	2.356	.098
	Within Groups	266.518	171	1.559		
	Total	273.862	173			
Inadequate knowledge in implementing the system	Between Groups	10.764	2	5.382	3.475	.033
	Within Groups	264.851	171	1.549		
	Total	275.615	173			
Lack of commitment from top managers	Between Groups	7.602	2	3.801	2.267	.107
	Within Groups	283.299	169	1.676		
	Total	290.901	171			
No suitable HRIS or software	Between Groups	.810	2	.405	.306	.737
	Within Groups	222.570	168	1.325		
	Total	223.380	170			
Difficulty in changing the organization's culture	Between Groups	4.246	2	2.123	2.253	.108
	Within Groups	158.327	168	.942		
	Total	162.573	170			
Employees Fearful of changing the way they do things	Between Groups	4.128	2	2.064	1.300	.275
	Within Groups	269.964	170	1.588		
	Total	274.092	172			
Not perceived as an advantage at all	Between Groups	.397	2	.199	.120	.887
	Within Groups	282.476	171	1.652		
	Total	282.874	173			
Lack of commitment and involvement by all employees	Between Groups	.733	2	.367	.293	.747
	Within Groups	214.071	171	1.252		
	Total	214.805	173			
A lot of paper work that is difficult to computerize	Between Groups	.750	2	.375	.242	.785
	Within Groups	261.902	169	1.550		
	Total	262.651	171			
Quick responses and access to information	Between Groups	1.542	2	.771	1.093	.338
	Within Groups	117.805	167	.705		
	Total	119.347	169			
Improving data control	Between Groups	1.759	2	.879	1.166	.314
	Within Groups	125.894	167	.754		
	Total	127.653	169			
Reducing data reentry and data may be used immediately	Between Groups	.301	2	.151	.190	.827
	Within Groups	132.522	167	.794		
	Total	132.824	169			
Streamlining HR processes	Between Groups	.029	2	.015	.016	.984
	Within Groups	153.059	167	.917		
	Total	153.088	169			
Allowing for fewer errors	Between Groups	1.294	2	.647	.821	.442
	Within Groups	131.553	167	.788		
	Total	132.847	169			
Standardizing programmes and procedures	Between Groups	4.611	2	2.306	2.382	.096

	Within Groups	160.679	166	.968		
	Total	165.290	168			
Reducing paperwork	Between Groups	9.832	2	4.916	7.307	.001
	Within Groups	115.042	171	.673		
	Total	124.874	173			
Reducing manpower	Between Groups	3.476	2	1.738	2.172	.117
	Within Groups	133.612	167	.800		
	Total	137.088	169			
Tracking and controlling the different HR function	Between Groups	2.618	2	1.309	1.691	.188
	Within Groups	130.061	168	.774		
	Total	132.678	170			
Helping to make more informed informal decisions	Between Groups	.153	2	.077	.098	.907
	Within Groups	132.608	169	.785		
	Total	132.762	171			
Improving employment services	Between Groups	1.602	2	.801	1.078	.343
	Within Groups	126.363	170	.743		
	Total	127.965	172			

Table 7. ANOVA test for difference among universities based on university sorting

		Sum of Squares	df	Mean Square	F	Sig.
Insufficient financial support	Between Groups	.835	6	.139	.224	.969
	Within Groups	101.797	164	.621		
	Total	102.632	170			
Lack of expertise in IT	Between Groups	73.878	6	12.313	10.282	.000
	Within Groups	199.984	167	1.198		
	Total	273.862	173			
Inadequate knowledge in implementing the system	Between Groups	52.522	6	8.754	6.553	.000
	Within Groups	223.093	167	1.336		
	Total	275.615	173			
Lack of commitment from top managers	Between Groups	34.046	6	5.674	3.645	.002
	Within Groups	256.856	165	1.557		
	Total	290.901	171			
No suitable HRIS or software	Between Groups	51.298	6	8.550	8.148	.000
	Within Groups	172.082	164	1.049		
	Total	223.380	170			
Difficulty in changing the organization's culture	Between Groups	21.975	6	3.662	4.272	.001
	Within Groups	140.598	164	.857		
	Total	162.573	170			
Employees Fearful of changing the way they do things	Between Groups	26.983	6	4.497	3.021	.008
	Within Groups	247.109	166	1.489		
	Total	274.092	172			
Not perceived as an advantage at all	Between Groups	63.057	6	10.510	7.984	.000
	Within Groups	219.816	167	1.316		
	Total	282.874	173			
Lack of commitment and involvement by all employees	Between Groups	10.524	6	1.754	1.434	.204

	Within Groups	204.281	167	1.223		
	Total	214.805	173			
A lot of paper work that is difficult to computerize	Between Groups	24.022	6	4.004	2.768	.014
	Within Groups	238.629	165	1.446		
	Total					
Quick responses and access to information	Between Groups	6.301	6	1.050	1.514	.177
	Within Groups	113.046	163	.694		
	Total	119.347	169			
Improving data control	Between Groups	12.017	6	2.003	2.823	.012
	Within Groups	115.636	163	.709		
	Total	127.653	169			
Reducing data reentry and data may be used immediately	Between Groups	12.111	6	2.018	2.726	.015
	Within Groups	120.713	163	.741		
	Total	132.824	169			
Streamlining HR processes	Between Groups	2.338	6	.390	.421	.864
	Within Groups	150.750	163	.925		
	Total	153.088	169			
Allowing for fewer errors	Between Groups	13.314	6	2.219	3.026	.008
	Within Groups	119.533	163	.733		
	Total	132.847	169			
Standardizing programmes and procedures	Between Groups	21.033	6	3.506	3.937	.001
	Within Groups	144.257	162	.890		
	Total	165.290	168			
Reducing paperwork	Between Groups	2.208	6	.368	.501	.807
	Within Groups	122.665	167	.735		
	Total	124.874	173			
Reducing manpower	Between Groups	9.151	6	1.525	1.943	.077
	Within Groups	127.937	163	.785		
	Total	137.088	169			
Tracking and controlling the different HR function	Between Groups	16.506	6	2.751	3.884	.001
	Within Groups	116.172	164	.708		
	Total	132.678	170			
Helping to make more informed informal decisions	Between Groups	9.326	6	1.554	2.078	.058
	Within Groups	123.436	165	.748		
	Total	132.762	171			
Improving employment services	Between Groups	6.254	6	1.042	1.422	.209
	Within Groups	121.711	166	.733		
	Total	127.965	172			

Table 8. Kruskal-Wallis Test for difference based on HRIS time in use

	Chi-Square	df	Asymp. Sig
Insufficient financial support	4.326	3	.228
Lack of expertise in IT	22.494	3	.000
Inadequate knowledge in implementing the system	18.421	3	.000
Lack of commitment from top managers	2.664	3	.446
No suitable HRIS or software	11.891	3	.008
Difficulty in changing the organization's culture	.685	3	.877
Employees Fearful of changing the way they do things	2.200	3	.532
Not perceived as an advantage at all	5.342	3	.148
Lack of commitment and involvement by all employees	4.027	3	.259
A lot of paper work that is difficult to computerize	4.879	3	.181
Quick responses and access to information	1.302	3	.729
Improving data control	1.489	3	.685
Reducing data reentry and data may be used immediately	2.385	3	.496
Streamlining HR processes	.703	3	.872
Allowing for fewer errors	1.857	3	.603
Standardizing programmes and procedures	1.688	3	.640
Reducing paperwork	2.360	3	.501
Reducing manpower	2.763	3	.430
Tracking and controlling the different HR function	6.514	3	.089
Helping to make more informed informal decisions	2.215	3	.529