

INDUSTRIES AND SECTORS: ISSUES AND POLICIES

**THE RELATIONSHIP BETWEEN
INNOVATION DIFFUSION AND HUMAN
RESOURCE INFORMATION SYSTEM
(HRIS)**

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Abstract: The purpose of this study is to investigate the relationship between innovation diffusion and human resource information system (HRIS). The theoretical framework of this study is based on the previous literature discussing innovation and HRIS. Innovation was treated as an independent variable, whereas HRIS was dealt with as a dependent variable. A survey questionnaire was used and sent to the human resource executives and the human resource professionals working at the pharmaceutical sector in Jordan to collect the data of this study with a response rate of 85%.

It was found that there is a positive relationship between innovation diffusion and HRIS. More specifically, it was found that there is a relationship between relative advantage, compatibility, trialability and observability on the one hand and HRIS functions on the other. However, it was found that there is no relationship between complexity as a dimension of innovation diffusion and HRIS functions.

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Introduction

Organizations depend heavily on the performance of their human resources (HR) (Lipper and Swiercz, 2005). Accordingly, the use of information systems within organizations and their impact on human resource management within them has been given a great deal of attention over the past decade (e. g., Eddy, Stone, and Stone-Romero, 1999; Shrivastava and Shaw, 2003). Organizations try to increase their effectiveness by relying on their Human Resource Information System (HRIS) (Troshani, Jerram, and Gerrard, 2010).

Consequently the literature on HRIS and associated subjects has been growing (Troshani, Jerram, and Hill, 2011). For example, Heines and Petit (1997) discussed HRIS and the conditions necessary for its success within an

organization. Browning and his colleagues carried out a study in 2009 and discussed HRIS from another perspective and focused on its role in achieving a competitive advantage within organizations. Furthermore, Teo and his associates in 2007 focused on HRIS adoption, whereas, Dery et al. (2009) and Wiblen et al. (2010) in their study focused on the strategic role of human resources within organizations.

As mentioned before, one of the factors that can play a significant role in the success of organizations is their HRIS. However, human resource information system is difficult to adopt. Ashbaugh and Miranda (2002) commented that adopting HRIS within an organization is a challenging and costly process. They added that it might take a long time to start realizing its benefits within an organization. Nevertheless, little attention has been paid in the previous research to the adoption of human resource information systems within an organization (Troshani et al., 2011).

Human resource information system is considered to be an information technology (IT) which is resulted from technological innovations (Kassim, Ramayah, and Kurnia, 2012) that should be applied within organizations. Kassim and his associates added that innovation diffusion can be used as an indicator of the attitude towards using HRIS. Accordingly, organizations must be careful when implementing a new innovation such as human resource information systems. Innovation is defined as "an iterative process initiated by the perception of a new market and/or new service opportunity for a technological-based invention which leads to the development, production and marketing tasks striving for the commercial success of the invention" (OECD (1991) cited in Garcia and Calantone, 2002, p.112). Organizations that seek to maintain their competitiveness and economic success should strive for more innovation and seek new opportunities (Inauen and Schenker-Wicki, 2012). This was supported by Ortt and Van der Duin (2008) who commented that "understanding how to manage innovation successfully is crucially important in a time when innovation is an almost obligatory survival strategy ("innovate or die") (p. 522).

The goal of this study is to investigate the effect of innovation diffusion within organizations in the Pharmaceutical sector in Jordan, focusing on the HRIS within those organizations. This is done by discussing innovation and its key perceptions of diffusion as well as discussing HRIS and its key elements which will be discussed in the theoretical framework of this paper.

This paper is structured as follows: First, the paper discusses the literature concerning HRIS and innovation as well as it presents the theoretical framework and hypothesis studies. Then, the methodology of the study is described. Further analysis presents and discusses the empirical study. The last section of the paper provides conclusion and recommendations for future research directions.

Innovation

Organizations face tough competition that causes the life cycle of their competitive advantage to be short. Accordingly, they have started to care more about their innovation processes so to enhance their economic situation,

consequently, keep them a head of other competitors (Wheelen and Hunger, 2012). This was accompanied by the increased technological development which accelerated the process of gaining information, accordingly, the global availability of knowledge (Inauen and Schenker-Wicki, 2012).

Innovation is considered to be almost an obligatory survival strategy which organizations should understand and be able to manage successfully (Drucker, 1999). However, it is not an easy process to adopt. Innovation is a risky in that its failure can negatively affect organizations (Tellis and Golder, 1996). For this, the subject of innovation is one of the main subjects that has been investigated by many researchers in both social humanities and social sciences (Kassim et al., 2012).

Some of the earliest studies carried out by Schumpeter in 1934 and 1939 defined innovation as an important element of economic change which organizations use in increasingly tough competitive environment. Other researchers studied the factors that affect the degree of adoption of an innovation within organizations.

For example, Zuboff (1988) and Remenyi et al. (1991) discussed this issue and commented that automation, information, and transformation are considered to be one of the most important factors that affect the diffusion of innovation. Rogers carried out an earlier study in 1983 in which he defined innovation diffusion as “the process by which an innovation is communicated through certain channels over time among the members of a social system” (p.5). Rogers identified four factors that determine the diffusion process of an innovation. These factors are the characteristics of the innovation, the communication channels, the change agent effort, and the nature of the social system.

Furthermore, he talked about the diffusion of innovation as the process of gathering information and reducing uncertainty. According to Rogers, knowledge, persuasion, decision, implementation and confirmation are considered to be five stages that comprise this process. Additionally, he identified compatibility, relative advantage, complexity, trialability and observability as characteristics of innovation that affect and determine its diffusion within an organization. These factors are considered to be intrinsic characteristics of innovations that influence an individual’s decision to adopt or reject an innovation.

This study investigates the relationship between the perception of employees within the pharmaceutical sector in Jordan towards the diffusion of innovation and human resource information system functions. The focus of this study will be on the five factors that affect this perception. The following section discusses these five characteristics.

Relative advantage

This attribute refers to the perceived usefulness of an adoption of innovation (Davis, 1989). It is defined by Rogers as the extent to which an innovation is perceived to be better than the idea it takes the place of (2003). Kassim and his colleagues (2012) added that this element is perceived as by how much benefit

it is going to bring to the users. However, this benefit depends on the nature of innovation to be held within an organization. Rogers (1983) stated that this attribute is usually measured by productivity improvement, economic profitability, and relative benefits. Hence, Kassim and his associates (2012) commented that this attribute is positively related to its rate of diffusion.

Compatibility

Compatibility is how much an innovation has to be taken into an individual's life. It is the degree to which this attribute is well matched with what pre-exists within an organization regarding its culture, values, the need for potential adopter, and past experience (Rogers, 2003). An innovation is more likely to be adopted within an organization if it was compatible with its culture (Chaudhuri, 1994).

Complexity

Complexity is defined as how much the innovation is perceived as difficult to understand and implement within an organization (Rogers, 2003; Kassim et al., 2012). The higher the probability to understand and use a certain innovation idea, the higher the possibility it would to adopt such an idea. This was supported by Chaudhuri (1994) who commented that "If the innovation is less complex than existing products, then the rate of diffusion will be enhanced" (p.24).

Trialability

This attribute is necessary to reduce the uncertainty and ambiguity associated with adoption of an innovation (Kassim, et al., 2012). It is defined as the possibility of trying and experimenting with an innovation within a set of limits. The higher the probability of experimenting an idea of innovation before usage, the higher the possibility of it to be adopted (Chaudhuri, 1994; Kassim et al., 2012)

Observability

Observability is defined as the degree to which the results of innovations are visible to others (Rogers, 2003). Some results of an innovation are easy to recognize and some others are not (Rogers, 1962; Chaudhuri, 1994; Kassim et al., 2012).

Human resource information system

Organizations operate in a dynamic environment which is characterized as being uncertain and tough. One of the main factors behind such environment is the increased use of technology which requires organizations to invest a lot in

order to face and respond to such an environment. This was supported by Kassim and his associates (2012) who commented that “the most salient factor impacting organizations and employees today is technological change. This can be seen in areas such as computer-supported-work-at-home, overall changes in labor force skills, and changes in organizational structure, and organization of work” (p.604).

Using technology allows organizations to imitate others products and services which leads to shorten the life cycle of their competitive advantages (Wheelen and Hunger, 2012). This also forces organizations to invest in human resources. This was supported by Troshani et al. (2011) who commented that in today’s knowledge economy, organizational success depends heavily on the performance of their human resources (HR). The increased importance of human resources within organizations was also discussed by Snell et al. (2001) who stated that a new era has begun for the role of human resources evolving from a production factor to valuable and inimitable resources. Rodríguez and Ventura, (2003) added that the role has also shifted towards a significant contribution in the strategic management of the organization. Hence, this shift is attributed to HR technology, such as HRIS (Troshani et al., 2011).

HRIS is a system that is considered to be a part of an organization’s management information system. Its main purpose is to collect, analyze, and use the information necessary to help HR department to do its job properly. Most of the previous research on HRIS is defined as a system used to acquire, store, manipulate, analyze, retrieve, and disseminate information regarding the human resources within an organization (E. g., Kavanagh, Gueutal, and Tannenbaum, 1990; Lippert and Swiercz, 2005; Kassim et al., 2012). This has lead organizations to rely heavily on HRIS as it helps them to increase their HRM effectiveness(Ball, 2001; Troshani et al., 2010), to improve their administrative efficiency (Troshani et al., 2011; Kassim et al., 2012), improve organizational performance, and change the way they are managed (Katou and Budhwar, 2006).

Human resource information system is considered to be a part of the overall organizational information system which is created to help an organization to perform better. To this, Wiblen and his colleagues (2010) stated that HRIS can help organizations to improve their efficiency through faster and more accurate processing of information, and improved employee communication. They added that it can also improve the productivity. HRIS is made up of many elements that work together. A malfunction of one element causes the functions of the whole system to fail (Kassim et al., 2012).

Due to its importance, many previous researchers have discussed the issue of HRIS; however, they discussed it from many perspectives. For example, Heines and Petit (1997) investigated the factors and conditions that affect the successful implementation of human resource information system. Browning and his Colleagues (2009), on the other hand, discussed the role of HRIS in achieving competitive advantages within organizations. Dery et al. (2009) and Wiblen et al. (2010) agreed with Browning et al. (2009) and discussed the degree to which HRIS can enable the strategic focus of human

resources within organizations. However, recent studies have examined HRIS adoption within organizations (e. g., Teo Lim, and Fedric, 2007; Troshani et al., 2011). This study investigates HRIS from another perspective and discusses the issue of human resource information system within organization. It also investigates the relationship between innovation diffusion within organizations and HRIS functions within the same organizations.

As mentioned earlier, human resource information system is a part of the overall strategic vision of an organization. Much of the previous research has discussed this issue; however, they did not come out with a comprehensive model of HRIS (e.g., Heines and Petit, 1997; Simon and Werner, 1996). Nevertheless, Mayfield et al (2003) developed a comprehensive model of HRIS that identifies major HRIS attributes and their interdependence. They identified strategic integration, personnel development, communication and integration, record and compliance, human resource analysis, knowledge management, and forecasting and planning as seven main components of an HRIS model. They stated that that "these seven factors are integrated and linked to organizational outcome through the influence of strategic organizational vision" (p.144). Hence, this study will depend on Mayfield et al.'s model of HRIS and its seven suggested components that play a significant role in a fully functioning human resources information system (HRIS).

Strategic integration

Human resource departments play a significant role in the strategic direction of an organization. Human resource function is involved in both strategy formulation and strategy implementation. This was supported by Mayfield and his colleagues who stated that without exchanging information between the HRM department and the top management, managers would not be able to include personnel factors in their decision making process (2003). Furthermore, strategic integration between top managers and human resource people is a continuous process rather than a sequential interaction (Noe, Hollenbeck, Gerhart, and Wright, 2010).

Human resource analysis

Human resource planning is the process of deciding what positions are available within an organization and how to fill them (Dessler and Al Ariss, 2012). It is the process by which an organization determines whether its human resources are congruent with their overall vision and strategic goals (Mayfield, Mayfield, and Lunce, 2003). This was supported by DeCenzo and Robbins (2010) who stated that employment planning should be derived from an organization's strategic plan.

Forecasting and planning

Forecasting and planning within an organization is connected with its human resource analysis. It is the process of expecting organizational future human resources and the required skills to achieve its goals and objectives

(Mayfield et al., 2003). This was also discussed by Dessler and Al Ariss (2012) who commented that managers should consider several factors when forecasting personnel needs. In other words, they should forecast the revenues of a goal and then estimate the number of staff required to achieve it.

Personnel development

Personnel development is concerned with the process of formal education, job experience, and assessment of an employee's personality and abilities, to help them prepare for their future. It is the process that attempts to "improve current and future management performance by imparting knowledge, changing, attitudes, or increasing skills" (Dessler and Al Ariss, 2012, p. 204).

Record and compliance

Record and compliance is associated with the next factor (knowledge management). This component is important for meeting legal requirements which require some data retention. This was supported by Mayfield and his associates (2003) who commented that cooperation between record and compliance function on the one hand, and the knowledge management function, on the other hand, is important to fully benefit from the information contained in the records.

Knowledge management

Knowledge management plays a significant role in creating and maintaining a sustainable competitive advantage of an organization (Teece, 2004). It focuses on tacit and other undocumented forms of important organizational knowledge. Knowledge management acts like organizational memory that is necessary in maintaining high level of organizational performance (Mayfield et al., 2003). To this, Gavrilova and Andreeva (2012) stated that "human nature recurs throughout knowledge management literature as a serious barrier to full and efficient usage and creation of knowledge in an organization" (p.524).

Communication and integration

Communication is important to deliver the necessary information within an organization. Accordingly, mechanisms such as intranet are necessary to spread this information. Moreover, communication mechanisms should be integrated with other functions within an organization, consequently, achieving the overall goals and objectives that are connected with organizational vision and strategy (Mayfield et al., 2003).

Research framework

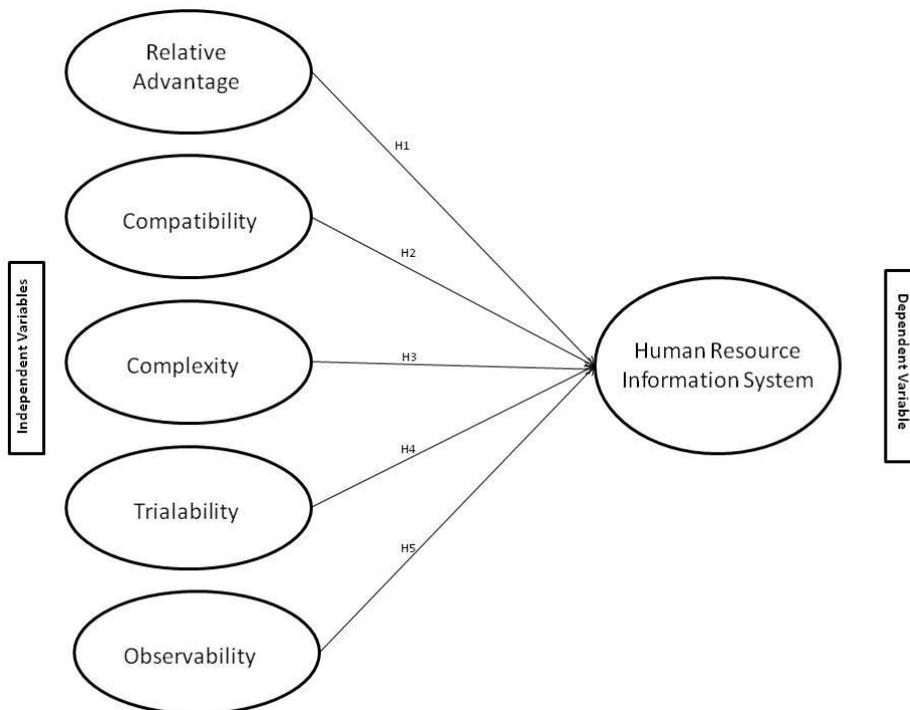
Organizations should have dynamic capabilities to actively respond to the challenges and changes within the external environment (Markova, 2012). Such capabilities are defined as "the firm's ability to integrate, build, and

reconfigure internal and external competences to address rapidly changing environment” (Teece et al., 1997, p.516). Human resource information system is one of the most valuable tools within an organization that can help it in quickly and adequately respond to the changes in the external environment.

Human resource information system is costly and crucial to the success of organizations, nevertheless, HRIS adoption has been paid little attention within organizations (Troshani et al., 2011) and even under researched (Blount and Castleman, 2009). The goal of this research is to study the relationship between innovation diffusion, on the one hand, and human resources information system, on the other hand. It is suggested by the researcher that HRIS will be more beneficial if organizations have positive attitudes towards the diffusion of innovation. For this, innovation diffusion is dealt with as the independent variable, whereas human resource information system is dealt with as the dependent variable.

Innovation as the independent variable will be measured using Rogers (1983) diffusion theory and adopted by Kassim et al. (2012) which includes five key perceptions about the characteristics of innovation. These perceptions are relative advantage, compatibility, complexity, trialability, and absorbability. Similarly, as introduced by Mayfield and his associates (2003) and adopted by Casico (2006) and Obeidat (2012) human resource information system (HRIS) consists of seven functions namely, strategic integration, forecasting and planning, performance development, human resources analysis, knowledge management, communication and integration, and records and compliance.

FIGURE 1 . RESEARCH FRAMEWORK



Looking at the above framework, this study tries to test the following main hypothesis:

There is a significant relationship between innovation diffusion and human resource information system functions

To answer this hypothesis, the following hypothesis will be tested:

H1: There is a significant relationship between relative advantage and human resource information system

H2: There is a significant relationship between compatibility and human resource information system

H3: There is a significant relationship between complexity and human resource information system

H4: There is a significant relationship between trialability and human resource information system

H5: There is a significant relationship between observability and human resource information system

Methodology

To test the hypotheses, depending on the review of previous literature and the pilot study tested in some organizations, a five-point Likert scale questionnaire was developed to collect the primary data of this study. To measure the dimensions of this research, fifty two questions were included in the questionnaire which was divided into three parts. The first part included questions regarding the characteristics of the sample, whereas the second part included questions regarding the human resource information system. The final part included questions to measure the dimensions regarding the innovation diffusion. This study was applied on the pharmaceutical sector in Jordan. The reason behind choosing this sector was because it is considered to be one of the few sectors in Jordan that uses HRIS. Additionally, access to this sector was relatively easy.

The study population comprises the human resource executives and human resource professionals working in the organizations within the pharmaceutical sector. It was agreed that the sample of this study should know what HRIS is. This was supported by Kassim et al. (2012) who commented that "to ensure meaningful data are collected, each respondent was required to acknowledge that he or she knew what HRIS was before completing the questionnaire" (p. 611). A letter of access was sent to the companies explaining to them the purpose of this study and asking their permission to collect data. After their approval, 180 questionnaires were sent by emails to the selected sample with authorized login information for the online survey. The respondents were given the freedom to either fill in the questionnaires online or print them out and send them by mail.

Only 156 questionnaires were returned, however, 3 were rejected due to errors in completing section in the questionnaires. Accordingly, a sample size of N= 153 was used in this study with a response rate of 85%.

Data analysis

As mentioned earlier, a questionnaire which was distributed to the human resource professionals within the pharmaceutical sector in Jordan was used to collect the data of this study. The Statistical Package for Social Sciences (SPSS) version 17 was used to analyze the data and test the research hypotheses.

Cronbach Alpha was used to measure the internal consistency of a test or a scale that describes the degree to which the items and the questions of the questionnaire measure the same concepts (Tavakol and Dennick, 2011). It is expressed in terms of numbers between 0 and 1. In this study, scale reliability was assessed using Cronbach's alpha coefficient. The appendix table 1 presents the Cronbach alpha coefficients for the different dimensions and items of the questionnaire. Many researches discussed this test and came out of many results regarding the accepted value of Cronbach Alpha. Nevertheless, they all agreed that the accepted value ranges from 0.70 to 0.95 (E. g., Nunnally and Bernstein, 1994; DeVellis, 2003). Indeed, it can be seen that the results range from 0.715 to 0.962. Therefore, all values exceed the recommended threshold 0.70, indicating good internal consistency among the items within each dimension, each variable, and the entire scale.

Hypothesis testing

It is readily seen that the higher VIF or the lower the tolerance index, the higher the variance of \hat{b}_i and the greater the chance of finding b_i insignificant. Before starting the process of testing the hypotheses, multicollinearity diagnosis was done using Variance Inflation Factor (VIF) and tolerance value. The tolerance of an independent variable -which is considered to be an additional method of measuring the effects of multicollinearity- ranges from zero to one. A VIF value of 5 or 10 and above and a tolerance of less than 0.20 indicate that variables are multicollinear (Chadha and Kapoor, 2009). As shown in the appendix table 2, it can be seen that VIF range between 2.320 and 3.701 values which are well-below five. On the other hand, the tolerance values range between 0.322 and 0.431 which are above 0.2. These factors indicate that there is no evidence of multicollinearity problem in the regression model. In addition to the VIF and tolerance values, a Correlation Matrix was computed the independent variable dimensions to check correlation between them as shown in the appendix Table 3. According to Sekaran and Bougie (2010), a value of 0.75 and above suggests high correlation between the variables. The results in the above table, are all below 0.75 and thus do not suggest high correlation between the variables. Therefore, these findings also show that there is no evidence of multicollinearity problem.

Multiple regression analysis was used to test the hypotheses of this study in which an HRIS was entered as the dependent variable and Innovation (Relative Advantage, Compatibility, Complexity, Trialability, and Observability) as the independent variables.

TABLE 1. MULTIPLE REGRESSION FOR THE HYPOTHESES

	R Square	F	Sig.	Beta	T	Sig.	Empirical Evidence
Relative Advantage				0.232	4.259	0.009	Supported
Compatibility				0.384	6.708	0.000	Supported
Complexity				0.019	0.299	0.766	Not Supported
Trialability	0.851	133.292	0.000	0.468	7.839	0.000	Supported
Observability				0.247	2.182	0.041	Supported

The above table shows that $F(5, 153) = 133.292$ and $p\text{-value} = 0.000$. Since the $p\text{-value}$ is smaller than the level of significance (0.05), the research model is accepted at $p < 0.05$ significance level. Hence, there is a statically significant impact of Innovation diffusion on HRIS functions. Hence, the positive effect of innovation diffusion on human resources information system functions was supported by several studies carried before (E. g., Tornatzky and Klein, 1982; Lean, Zailani, Ramayah, and Fernando, 2009; Sang, Lee, and Lee, 2010; Schaupp, Carter, and McBride, 2010; Van Slyke, Lou, Belanger, and Sridhar, 2010; Kassim et al., 2012)

Moreover, as shown in table1, the R Square's value of (0.851) indicates the proportion of the variance in the criterion variable which is accounted for by the model and shows that about 85% of the variance in HRIS has been significantly explained by Innovation. The fact that Innovation explained more than three quarters of the variance in HRIS may be due to the absence of other factor explaining the other half. This shows that innovation diffusion plays a significant role in the adoption of human resource information system within an organization; nevertheless, it is not the only factor that determines this diffusion.

The t and sig. (which is known as $p\text{-value}$) values, as shown in table 1, give a rough indication of the impact of each predictor variable (Kumar, Packer, and Koller, 2010). A big absolute t value and small p value suggests that a predictor variable is having a large impact on the criterion variable. The results show that Relative Advantage, Compatibility, and Trialability, have a significant impact on HRIS. Also, the standardized beta coefficient is a measure of the contribution of each predictor or how strongly each predictor variable influences the criterion variable (Kumar et al., 2010).

A large value indicates that a unit change in this predictor variable has a large effect on the criterion variable. The strongest predictor for HRIS is Trialability, achieving a β of 0.468, followed by Compatibility ($\beta=0.384$), and Relative Advantage ($\beta=0.232$).

The findings revealed that Trialability is the strongest or most important predictor of the decision of adopting an innovation within organizations, accordingly, an HRIS within them. This result agrees with the fact that pharmaceutical in Jordan operates in an Arabic culture which is characterized by high uncertainty avoidance (Daniels, Radebaugh, and Sullivan, 2013). Accordingly, people prefer to try the system before the decision

to actually adopt it is made so to reduce the uncertainty associated with it. Next section discusses the results of this study.

Discussion

As mentioned earlier, this study tries to investigate the relationship between innovation diffusion and the use of human resource information system functions. It was hypothesized that there is a significant relationship between the two dimensions. For this, five hypotheses were developed to examine this relationship. This section discusses the results of the hypotheses testing and compares them with the results of other researches related to the subject of this study.

Relative advantage: The first hypothesis assumes that there is a significant relationship between relative advantage and human resource information system functions. The results of this study support this hypothesis and a relationship was found between the relative advantage of innovation perceived by an organization's members and the decision to adopt a human resource information system within that organization. This result is inline with previous studies carried out by Tornatzky and Klein (1982), Lean et al. (2009), Sang et al. (2010), Schaupp et al., (2010), and Van Slyke et al. (2010). However, it contradicts with what was found by Kassim and his colleagues (2012) who found that there is no significant relationship between perceived relative advantage of technology and the adoption of that technology. Organizations are aware of the perceived benefits-costs trade off connected with the use of HRIS (Troshani et al., 2011). It can be argued that although HRIS is associated with many costs related to its implementation and use, its perceived benefits encourages organizations to adopt it.

Compatibility: The second hypothesis assumes that there is a significant relationship between compatibility and human resource information system functions. Previous studies carried out by Karahana et al. (1999), Gan (2003), Ojha et al., (2009), and Van Slyke et al., (2010) found that innovation is more likely to be adopted within organizations whenever it is compatible with the value system and job responsibilities of individuals. The result of this study is compatible with what was found in the previous research and support this hypothesis. The result of this hypothesis can be argued to the fact that the population of this study is the pharmaceutical sector operating in Jordan. Jordan is considered to be an Islamic country with conservative culture that affects the organizational culture (Daniels et al., 2013). Therefore, organizations in Jordan will never be able to adopt technology that does not go along with what people in such organizations believe in.

Complexity: The third hypothesis assumes that there is a significant relationship between complexity and human resource information system functions. The results of this study do not support this hypothesis and found that there is no significant relationship between the perceived complexity of innovation and human resources information system functions. The higher the complexity of an innovation, the higher the skills and efforts needed to implement such an innovation, consequently, the less chance to adopt it within organizations (Cooper and Zmud, 1990). The results of this study show

that organizations in Jordan do not adopt difficult to use HRIS and organizations look to adopt relatively easy to use human resource information systems. Such a result can be grouped with the result of the first hypothesis regarding the relative advantage of innovation. In another word, organizations might look at the complexity as a cost associated with the adoption of HRIS which might affect the decision of adoption of such a system. The result of this hypothesis go ahead with what were found in the studies carried out by Davis et al. (1989), Ramayah et al. (2003), Ojha et al. (2009), Van Slyke et al. (2010), and Kassim et al. (2012).

Trialability: The fourth hypothesis assumes that there is a significant relationship between trialability and human resource information system functions. The results of this study support this hypothesis and agreed with Rogers (1995) that people who have the ability to experiment an innovation are more likely to adopt it. Trying an innovation before using it reduces the uncertainty associated with it. This is compatible with the Jordanian culture which is characterized by having high uncertainty avoidance (Daniels et al., 2013). In such cultures, employees like to reduce the uncertainty associated with a certain element by calculating its consequences and outcomes before the final decision to implement it. Moreover, employees who try the system are more likely to develop a positive impression towards such a system in comparison to those whom they did not try (Kassim et al., 2012). Accordingly, employees of pharmaceutical in Jordan should try the HRIS before making the decision of whether to adopt it or not. The result of this hypothesis also supports what was found in the previous studies of Agarwal and Prasad (1997) and Kassim et al. (2012)

Observability: The fifth hypothesis assumes that there is a significant relationship between observability and human resource information system functions. As mentioned before, observability refers to the degree to which innovation is observable to individuals. The results of this study support this argument and found that the higher the visibility of HRIS to individuals within an organization, the lower the uncertainty related to it, the more the probability to adopt it. The findings of this hypothesis go ahead with the results of the previous hypothesis that when employees within an organization try an HRIS, it becomes more visible to them, the probability of adopting such a system becomes greater. This result is also compatible with the results of the previous research carried out by Karahana et al. (1999), Gan (2003), Kolodinsky et al. (2004), and Kassim et al. (2012).

Conclusion, implications, recommendations, and limitations

This study adds to the existing knowledge by enhancing the current understanding of innovation diffusion and its relationship with HRIS functions. It also proves that people's attitude towards innovation influences the extent use of HRIS. It was found that there is a significant relationship between innovation diffusion and human resource information system functions within the pharmaceutical sector in Jordan. The results of this study agree with what was found in the previous research. It was found that there is a relationship between the relative advantage perceived by respondents towards innovation and the human resource functions, consequently, the adoption of

such a system. It was also found that the higher the compatibility of an innovation with the social system within an organization, the higher the probability of the adoption of an HRIS within that organization. Additionally, it was resulted that organizations do not adopt a human resource information system if they perceive it is perceived as a complicated one. For this, organizations like to try and observe an innovation before making the final decision of whether to adopt it or not. The results of this study also shows that organizations in order to reduce the uncertainty associated with applying new things- like to try a human resource information system before taking the final decision of implementing it. This also goes ahead of the observability dimension in which this study showed that individuals who use the system themselves are more likely to use HRIS than those who have not.

The results of this study hold important implications of how to successfully implement an HRIS within organizations. The results imply that those who use human resource information system should be able to try and observe it before taking the final decision of using it or not. This encourages those who market innovation in organizations to allow users to try innovation and to allow them to realize the benefits and advantages associated with it. Furthermore, it is important to such people to realize that organizations prefer to implement systems that are easy to use as well as those which are compatible with their social systems.

Finally, the results of this study derived from data that were gathered from one sector in Jordan which is a limitation of this study. Moreover, only human resource professionals were included in this study. Additionally, only a quantitative method was used to collect this data which is also considered to be the second limitation of this study. It will be more credible and reliable if further studies are applied on more sectors in Jordan. Moreover, it will be credible and reliable if interviews - as a qualitative approach- are used as a second method to collect data.

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Appendix

TABLE 1. CRONBACH ALPHA COEFFICIENTS

	Cronbach alpha	No. of items
Innovation	0.894	21
Relative Advantage	0.949	4
Compatibility	0.860	4
Complexity	0.790	4
Trialability	0.831	4
Observability	0.715	5
Human Resource Information Systems	0.962	31

TABLE 2. MULTICOLLINEARITY

	Tolerance	VIF
Relative Advantage	0.431	2.320
Compatibility	0.390	2.562
Complexity	0.322	3.102
Trialability	0.358	2.792
Observability	0.399	3.701

TABLE 3 . CORRELATIONS BETWEEN CONSTRUCTS

Constructs	Relative advantage	Compatibility	Complexity	Trialability	Observability
Relative Advantage	1.000				
Compatibility	0.699	1.000			
Complexity	0.631	0.699	1.000		
Trialability	0.480	0.630	0.748	1.000	
Observability	0.519	0.613	0.480	0.472	1.000