The role of Employees' Empowerment as an intermediary variable between Knowledge Management and Information Systems on Employees' Performance

Abstract

Purpose: The purpose of this research is to investigate the interrelationships among Knowledge Management (KM), Information Systems (IS), and Employees' Empowerment (EE) on Employees' Performance (EP).

Design: Accordingly, a structural model is developed that delineates the interactions among these constructs and explores the mediating effect of employees' empowerment on the relationship between KM, IS and employees' performance. A questionnaire-based survey was designed to test the aforementioned model based on dataset of 287 employees' Pharmaceutical industries in Jordan.

Results: The model and posited hypotheses were tested using structural equation modeling analysis. The results indicated that KM and IS positively and significantly affect EE, in which the latter impact EP as well. However, neither KM nor IS proved to be positively related to EP. Additionally, EE positively and significantly mediated the relationship between KM and EP; besides the relationship between IS and EP.

Originality: This is one of the few studies which investigate the interrelationships among Knowledge Management (KM), Information Systems (IS), and Employees' Empowerment (EE) on Employees' Performance (EP), and the first to test the model on companies in the pharmaceutical industries in Jordan.

Keywords: Knowledge Management; Information Systems; Employees' Empowerment; Employees' Performance.

1. Introduction

The changing circumstances of the organizations these days; either political, cultural, social, or economical circumstances, are the result of many sequential changes due to the knowledge explosion and information and communication revolution (Hsu and Sabherwal, 2012; Kasasbeh 2015), the increased internal and external competition resulted in more challenges and difficulties for the organizations to keep up with these changes and adopting to them (Sweis et al., 2011; Krylova et al., 2016), all these events forced the organizations to respond to the changes creatively and to find modern and innovative ways and then they became obliged to make basic changes in their management styles; through finding creative individuals and provide the required and suitable tools that help creating new methods and modern work techniques and quick administrative solutions to face these challenges (Mughraj, 2015). The creative individual

is considered as a fortune better than the materialistic fortune, and even the investment in developing the human element is one of the most successful investments, in addition to that, the human resource is one of the most important factors that help in the sustainability of the organizations by achieving the sustainable competitive advantage as a result of his creative abilities, skills, and tacit or explicit knowledge (Hawajrh and Al-Mahasneh, 2015; Inkinen, 2016). Thus, the trend of the organizations toward innovation shouldn't be restricted to introducing the modern tools and techniques, but the management should be convinced that the employees can innovate and create solutions for the problems they face (Mughraj, 2015). Information systems are considered as a main part of the success of the modern organizations in light of competition and quick change and uncertainty, that gave the information systems a very vital role in the success and efficiency of any organization, and in the completion of the administrative tasks efficiently and effectively (O'Brien and Marakas, 2011), it also helps in cooperation and coordination between the members of the organization and between different organizations, this requires efficient design and management of these systems (Gil, 2009). Knowledge management is considered as the most important competitive advantage that the organizations are seeking to acquire and use, this resource is very important for the organizations in light of the huge development in communication and information, thus, the knowledge management became an important power for the success of business, in addition, such knowledge should be integrated in the strategies of the organization in order to respond to the environmental changes (Ababneh and Hatamleh, 2013; Giampaoli et al., 2017).

While human interest, management, direction and motivation have become more important than other areas related to money, technology, and organizational structures (Khansharifan et al., 2015), that's why from the human related subjects emerged the Employees' Empowerment (EE), as a modern management concept and one of the most promising (Khansharifan et al., 2015). Employees' Empowerment (EE) means giving the employees the powers and responsibilities, and encourage them to participate in decision making and enrich them with the confidence and freedom to perform in their own way without direct involvement of the management, mainly it strengthens the relationship between the management and the employees, help encouraging the employees and enhance them to participate in decision making, and break the ice between the management and the employees, that makes the attention paid to empowerment a basic element in the success of the organizations (Awamleh, 2013). The purpose of this research is to investigate the interrelationships among Knowledge Management (KM), Information Systems (IS), and Employees' Empowerment (EE) on Employees' Performance (EP). The study also aims at studying the impact of information systems and knowledge management on the employees' performance by using Employees' Empowerment as a mediating variable.

The rest of this paper is organized as follows. It begins with the relevant literature and previous studies about knowledge management processes, information system (efficiency and effectiveness), employees' empowerment and employees' performance, as well as other previous studies that link information management and information system with employees'

empowerment, and link knowledge management and information system with employee performance, and knowledge management and information system with employees' empowerment and impact, employees' performance. Then, the methodology in which the research theoretical model, hypotheses, population and sample, data collection, and analysis methods, and the validity and reliability of the study are presented. It then followed by testing the proposed hypotheses in the data analysis section. The discussion and conclusion are then provided and areas for future research are also addressed.

2. Literature Review

2.1. Knowledge Management

The world is going through a very developed stage by changing from the industrial era to the knowledge era, and thus the organizations realized the importance of the information as a stock in their human resources, and the organization then started to thinking of the methods to make the better use of the knowledge in creating qualified human elements able to innovate and excel (Shih et al., 2016). Knowledge is considered as one of the most valuable assets in the modern organizations, it became one of the most important production factors with the human resources and the capital, and it is the main engine for economic growth and the catalyst for technology development and production enhancement, knowledge create the innovation and then transform it into processes and products (Maruf and Zhou, 2015). The main goal of knowledge management is to provide knowledge for the organization on a permanent basis and make it a practical attitude that serves the goals of the organization (Masa'deh et al., 2017; Soto-Acosta et al., 2016). Knowledge management is a process that includes creating the knowledge, finding it, and passing it in a consistent manner and learns to use it to achieve the goals. And it is organized knowledge management by creating it, collecting it, purifying it, and spreading it among the employees (Ababneh and Hatamleh, 2013; Masa'deh, 2016).

Crossman indicated that the main goal of knowledge management is to provide knowledge for the organization on a permanent basis and make it a practical attitude that serve the goals of the organization in order to achieve efficiency and effectiveness through planning and organizing the cognitive efforts, in order to achieve the strategic and operational objectives of the organization (Crossman et al., 1999; Almajali et al., 2016). Ardin thinks that the knowledge management differs according to the approach used for studying it, the documents approach and the technical approach assure the sustainability operations, increasing the current knowledge, its impact, its use, and reuse. In addition, the social organizational approach and the added value approach assure the creation of new knowledge, and according to these approaches, four basic knowledge management processes were defined; creation of knowledge, sharing, storing knowledge, and application knowledge (Ardin, 2012). Based on the studies of some researchers (Al-Zou'bi and Al-Zaidy, 2012; Kasasbeh, 2015), these approaches were used in this study since these operations are the most common among the knowledge management processes (Obeidat et al.,

2016) especially because the creation, storing, sharing, and application knowledge don't happen accidently, but it happen in light of defining the required knowledge and its goals. Knowledge creation includes the interaction between the tacit and explicit knowledge, results in the finding, deriving, and creation of new knowledge inside the organization to provide the different kinds of knowledge for the future decisions. Fernandez and Sabherwal defined knowledge creation as "the process of retrieving either explicit or tacit knowledge that resides within people, artifacts, or organizational entities. Also, the knowledge being captured might reside outside the organizational boundaries including consultants, competitors, customers, suppliers, and prior employers of the organization's new employees (Fernandez and Sabherwal, 2010). Knowledge creation, starts with an idea presented by the knowledge makers, through acquiring and innovation, and is one of the important keys for the organization on the long run, in addition to the competition in creation new ideas and developing new operations (Kasasbeh, 2015), Al-Zou'bi and Al-Zaidy (2012) also indicated that knowledge creation means the innovation by the participation of the supportive working groups to create a new information capital in new practices and issues, that helps in defining and solving the problems in a continuous innovative manner. Knowledge storage includes all activities that keeps the knowledge and allows it to stay in the systems, storing it, and renewing it to be retrieved easily by the users (Al-Ali, 2013). Knowledge storage can happen in many ways like when each individual in the organization records everything happens to him and all the new information, one from the administration collects and stores the information to make it available for everybody, or when the members of the organization give all their new information for a management member to analyze, purify and document the information (Ababneh and Hatamleh, 2013). Knowledge sharing aims to transfer the explicit and tacit knowledge to other individuals, and this transfer becomes effective if the receiver understood the information and became able to use it. The knowledge sharing indicates the social interaction, that involves skills, experiences, and knowledge exchange among the employees in the department or the organization (Bouraghda and Dris, 2015). Awad and Ghaziri defined the knowledge sharing as a continuous and mutual interaction among the individuals and work groups inside the organization, and between the organization and the beneficiaries. Knowledge sharing and exchange occurs through joint work, communication, learning through work, training, face-to-face discussions, and informal sessions, or through documents exchange, especially since the modern technology ensures the availability of the knowledge when needed (Awad and Ghaziri, 2004). However, acquiring, storing, and sharing the knowledge is not enough, what is important is to transform it into practical application. The success of any organization in knowledge management depends on the ratio of the applied knowledge to the whole information (Dalkir, 2005). Knowledge must be applied in problem solving because it is the main goal of knowledge management process through applying it in the organizational activities and processes like human resources management, decision making, and services and goods quality improvement (Sweis et al., 2011). Application knowledge requires setting the organization's environment to reach the maximum benefit. Like management leadership, knowledge management requires an exceptional pattern in leadership where it focuses on

openness, mutual trust, communication with others to achieve the highest level of productivity in the organization. Information technology which is represented in providing advanced business network, data bases, tools, and software that facilitate the knowledge management processes in the organization, in addition to the most suitable organizational structures for knowledge management that is flexible and adoptable, easy to communicate, and has a quick response to changes by adopting the horizontal organizational structure (Ababneh and Hatamleh, 2013; Lopez et al., 2004).

2.2. Information Systems

The development and growth of information systems and the spreading of its applications became the vital source of business for the organizations, not just a source of information, and without the management information systems there will be no sustainability in the business organizations. Management information systems are defined as the computer based information systems that make the information available for all users according to their needs, and provide the management of the organization with past, current, and future predicted information that help them in decision making (Raymond and George, 2007). Stair and George defined information systems as a set of interrelated component that collect, manipulate, store and disseminate data and information, and provide a feedback mechanism to meet an objective (Stair and George, 2012). Macleod believes that there is a procedural definition of the information systems as it consist of a group of formal and informal systems that provide the management with past, current, and predictive information, either in an oral form, written, or visual, for the internal operations in the organization or for the surrounding environment, in order to support the managers in the high managerial levels, by providing accurate information in the suitable timeframe to help accomplish the work and make the decisions (Al-Kshali and Al-Qutob, 2007).

In the current circumstances of the business environment, the organizations can't continue without the information systems, it is the tool for the mutual relation to facilitate the communication between the organization and the surrounding environment, in addition to activating the horizontal and vertical communication channels between the managerial levels and units within the organization. It also helps in setting the circumstances for decision making by providing the information in the right time and in the form that improves the quality (Al-Adwan et al., 2015; Al-Batayneh, 2013; Allahawiah et al., 2013; Laudon and Laudon, 2012).

2.2.1. Efficiency and Effectiveness of Information Systems

The successful information system became an inseparable approach for the business organizations and an important pillar for the management of the organization, enhancing the organization's competitive ability and creating chances through which the organizations try to find new market shares. Thus, the benefits of the information systems for the activities and processes became clear in helping achieving the goals in sustainability, growth, and profitability (O'Brien and Marakas, 2011). For any information system to succeed, it should be at high quality

and achieve the beneficiary's goals and requirements in a way that covers all the required work procedures currently and in the future, and the right manner and without mistakes, under the condition that the moral and physical returns be more than the total cost (Yassin, 2012). The efficiency and effectiveness of the information systems is the degree of achieving the goals they were designed for in the least amount of the available resources, it was also defined as the contribution of the information system in achieving organizational goals, like its effect on the performance of the organization, and others, using the available resources (Khreisat, 2009).

The efficiency of information systems: the ability of the system to achieve the defined goals according to predefined standards. Yassin clarified that efficiency is achieving the defined goals with the least use of resources. Efficiency focuses on the maximum benefit from the available resources with the least cost. Thus, the efficiency of the information system depends on two main indicators; the availability of the tangible and intangible resources, and the ways of using these resources to achieve goals (Yassin, 2012).

Effectiveness of information systems: which is defined as doing the right things, thus it is related to the correctness of the decision. In order to achieve the effectiveness, three main factors should be integrated; individuals, structure, and information (Al-Kshali and Al-Qutob, 2007). Many basic approaches can give guidance to determine the effectiveness of information systems; the goal approach, which is used mostly, and it defines effectiveness as the ability of the system to achieve the goals. The resources approach defines effectiveness in the frame of the system's position to the outer environment, where the effectiveness of the information systems indicates their ability to gain unique resources, where the inputs come in the place of the outputs in importance. The third approach which the satisfaction of the users where effectiveness is linked to the benefit of the users, where it is defined by the degree of beneficiaries' needs and expectations satisfaction by the system. The operations' approach looks at the effectiveness of the information system as a reward for the internal correctness of the system, and the right internal procedures and operations (Al-Tai, 2009; Tong and Yab, 1996).

Jawad and Alani (2008), Malkawi and Alsalem (2004) indicated that the indicators for measuring the efficiency and effectiveness of the information system are defined by the final beneficiary satisfaction, the size of usage, goals achievement, higher management support, time and cost effects, and training and documentation. Where Al-Tai (2009) defined a group of characteristics through which we can measure the efficiency of the system; the value of the information, beneficiary's individual performance, organization's performance, system usage, and beneficiary satisfaction, and he indicated that the beneficiary satisfaction is one of the most used indicators because it reflects on the other characteristics like organization's performance and individual performance, and that increases the value of the information provided by the system.

2.3. Employees' Empowerment (EE)

The need for changing the administrative work styles became more urgent especially with the beginning of the millennium; this need resulted from the accelerating technology development and information explosion (Shih and Tsai, 2016). The modern organizations also started seeking to change their management of human resources by following the strategies that focus on human resources which appeared through the development of managerial ideology, in a way that goes with the changes in order to gain the loyalty and affiliation of the individuals to achieve the organization's goals (Meyerson and Dewettinck, 2012). In addition, the competitive environment of the organization increased the speed and average in which organizations require the innovation in order to sustain and enhance its competitive position. The managers of modern organizations should keen to develop the abilities of employees in problem solving and participation in decision making (Meyerson and Dewettinck, 2012). Employees' empowerment is one of the ways that increase the organization's ability in improving, developing, and using the talents of the employees, and it is considered as a tool to enhance the employees in formulating their innovative ideas. Employees' empowerment can be defined as providing the employees with the information and power and the required resources to achieve the organization's goals (Meyerson and Dewettinck, 2012). Mohamadeya indicated that employees' empowerment increases the employees' motivation to work by delegating the powers to the lower levels in the organization (Mohamadeya, 2016), while Abou Elnaga and Imran consider it as a transfer of power and responsibility, and inviting the employees to share the information and knowledge provided by the organization through its database, and participate in problem analysis and decision making, and consequently the employee will be responsible for the equality of the activities he decided, and this will support the transfer of the power from the managers to the employees rationally (Abou Elnaga and Imran, 2014).

Employees' empowerment can be effective in reducing the work pressure, it helps the individuals to deal with the conditions that require a high effort, because it provides them with important resources like; independency, participation in decision making, and competency, it also leads to having a positive effect for the roles of the employees (Abou Elnaga and Imran, 2014). Savery and Luks (2001), indicated the positive effect of employees' empowerment on the self confidence of the employee, and that it gives the employees a sense of what they offer to their organization, which increases the productivity. Employees' empowerment can also be considered as a tool to enhance the ability of organizational change and employees' participation, it also opens the door for trying the innovative abilities of the employees, gives them flexibility, independency, and increase the employees' self respect.

Delegation of Authority, giving up on the powers to the employees to perform certain duties or the process when the manager gives some of his powers for the employees who have the required experience and give them the required space for performing these duties, and they should be accountable for their actions (Al-Jammal et al., 2015).

Participation in Decisions, when the management gives the chance for the employees to take their decisions without restrictions or laws that reduce their participation, in order to reach the best employment of their capacities and enhance their morale (Al-Jammal et al., 2015).

2.4. Employees' Performance (EP)

The concept of Employees' Performance (EP) is one of the concepts that gained lots of attention by the researchers in the field of management sciences, and that was because of the importance of the concept for the individual and the organization. Employees' performance is defined as behavioral responses reflect what the employee learned or was trained on, and it is the product of the mental and psychological abilities, (Siljanen, 2010) thinks that the employees' performance is the interaction of the employees' behaviors, and that behavior is determined by the interaction of the employee's efforts and abilities in the organization, as it represents the ability of the employee to achieve the goal of his job, and it is the result which the employee achieve when he does any job in the organization (Kianto et al., 2016). But we should differentiate between the behavior and accomplishment; the behavior is the work that the employee does in the organization, but the accomplishment is the impact or results left after the work stops, while the performance is the interaction between behavior and accomplishment, it is the sum of the results and behaviors achieved together (Indermun and SaheedBayat, 2013).

Edgar and Geare (2005) think that there are four main elements for the process of performance management including determining the expectations where the managers and the employees determined the work to be performed, where to perform it, how to perform it, and what are the expected results of impact of this performance. There are also the direction and returning the effect which are informal meetings between the management and the employees to evaluate the performance and how to enhance it. Preparation of the employees and training them, introducing them to the evaluation criteria, and prepare them to meet the goals set in performance plan that they participated in. in addition to the follow up that depends on the psychological and information support provided by the manager to the employee, and these are formal meetings to discuss the expectations met and how to enhance them, and how to solve the problems that faced the performance. And at the end the reward according to the performance where the managers make the decision to amend the reward and give the suitable compensation for the employees after the evaluation of performance (Edgar and Geare, 2005; Massaro et al., 2016).

2.5. Knowledge Management, Information Systems, Employees' Empowerment, Employees' Performance

2.5.1. Knowledge Management and Employees' Performance

Knowledge is one of the most important resources of the organization, because it lies within the minds of its employees, clients, suppliers, documents, and routines, it is the result of data processing that was transformed into information and became knowledge after they were

understood, applied repeatedly, and practiced during the work until they became rooted in the mind of the individual as a mental state that is shown clearly through the experiences, skills and cleverness of the employees (Fernandez and Sabherwal, 2010). In addition to that, knowledge management is considered one of the main pillars that the organizations seek to apply and one of the best ways they go through to enhance the performance, by rehabilitating, educating and training the work forces on knowledge management, organizations also are looking for collecting, store, spread over all administrative levels, and develop the information in order to invest in having new knowledge, and employ the currently possessed knowledge with the maximum capacity and efficiency to reach the excellence in performance (Shih et al., 2016). Jaradat et al. (2011) indicated that the impact of knowledge management on the employees is done by affecting the one's learning, and learning is the rational or constant change in behavior, and it is the process that allows the individual to gain information and skills through his interaction with the surrounding social and cultural systems.

2.5.2. Knowledge Management and Employees' Empowerment (EE)

Davenport clarified that in the future the competition will be on attracting the skills and capacities that are called the knowledge employees. In order to keep them, the management should be aware that the bureaucracy isn't appropriate for the knowledge employees. They like to perform without strict control and without strict procedures and formal work systems. The bureaucratic environment can be expelling for those employees, because they will not have the freedom in thinking and the independency in innovation and creation (Davenport, 2001). It is known that free thinking, trying, experiencing, failure, innovation, and creation are in the core of the knowledge employee work, and here we see the importance of the knowledge as a main pillar in employees' empowerment and granting them the freedom in actions and participation (Ardin, 2012). This is natural, because with the increased experience of the individual, and the increased skills and knowledge, comes bigger ability to perform the tasks with efficiency and competency, and more independency (Haghighi et al., 2014).

2.5.3. Information Systems and Employees' Performance (EP)

It is a certainty that information is the natural input for the decision making process, thus, having a basic base for the data and information that is characterized by accuracy and accurate classification and easy calling might help a lot in putting strong basis for setting the alternatives and choosing from them (Al-Arabi, 2012). The information systems and technologies used by the organizations in collecting, analyzing, and presenting the information are faster and more competent, thus, all the operations and tasks in the business organizations stated depending basically on the technology and modern information systems and the techniques they provide that are able to ease the work, and it also provide specialized information for all sectors, and help in making good decisions in the right time which is reflected on the employees' performance and the goals to be achieved (Ahrabi and Darestani, 2016).

Al-Jabouri (2003) and Al-Qadah (2007), clarified that the relationship between information systems and employees' performance are characterized by the following:

- To a high extent, it improved the Employees' Performance (EP). By passing doing many routine works which led to more speed, accuracy, and efficiency in completing the tasks.
- Affected the employees' morale toward increasing their loyalty and belonging to the organization through the opportunities it provides to viewing the information easily, which enhances their participation in decision making.
- Reduced the work burden on the managers, and the time saved can be used for planning and drawing policies for the organization, which increased the efficiency and effectiveness of the higher management.

2.5.4. Information Systems and Employees' Empowerment (EE)

Empowerment is linked to information systems and technologies in light of the modern global changes, where restructuring those organizations became urgent, in addition to training the leaders and human resources to use the modern information systems in performing the tasks according to the modern procedures (Tahir and Mehdi, 2011). Information systems contribute to Employees' Empowerment in two views; first, Innovative solutions for organizational problems requiring (need) to accept and do responsibility by employees under the proper conditions. So, the organizations have to consider open culture and give its employees a good space to decide and act and managers learn to abandon their "ruling" roles. Emerging IS and IT can support this direction by providing information that is required to build the trust of employees in management. IS can keep staff fully informed of the company's performance results sales, profits) and competitors' performance, the company's plans and goals and sensitive issues such as sell-off options and possibilities of down-sizing (Qudah and Melhem, 2011). On the other hand, information system is essential element in empowerment employee because they provide the information employee need to make decision ,the employee might also be empowered to developed or use their own personal information system, and addition information system assist the traditional organizational to short its structure and decrease the layers help to reduce the number of management levels, or layers, in structure, this type of structure often called a flat organization structure, empower employee at lower levels to make decision and solve problem without needing permission from midlevel manger, empowerment gives employee and their manger more responsibility and authority to make decision, take action and have more control over their jobs (Laudon and Laudon, 2012; Stair and George, 2012).

2.5.5. Employees' Empowerment (EE) and Employees' Performance (EP)

Simard and Rice (2007), indicated that the excellence in the performance can occur by encouraging the employees, provide them with the resources, and delegate the powers to them,

granting them the freedom includes avoiding the over control, and give them the chance to share their opinions, take their decisions, and do their work. Thus, we can see that when the indicators of employees' empowerment are enhanced, the organization will be finest, because the employee will be more loyal to the organization, and puts all his efforts to serve it (Meyerson and Dewettinck, 2012). Shih and Tasi (2016) added that the empowerment aims at satisfying the employees toward their jobs, their organizations, and then make them to perform better, that is also applicable on the moral and psychological status. Empowerment is also considered an administrative strategy used to reach high efficiency and increased effectiveness.

3. Theoretical Framework and Hypotheses Development

3.1. Research Framework

This research is based on the proposed framework (Fig. 1). The framework considers the effect of Information Systems, Knowledge Management on employees' empowerment and employees' performance.

<Figure 1: Research model>

H1: There is a positive effect knowledge management on employees' empowerment.

H2: There is a positive effect of information systems on employees' empowerment.

H3: There is a positive effect of knowledge management on employees' performance.

H4: There is a positive effect of information systems on employees' performance.

H5: There is a positive effect of employees' empowerment on employees' performance.

H6: Employees' empowerment positively mediates the relationship between knowledge management and employees' performance.

H7: Employees' empowerment positively mediates the relationship between information systems and employees' performance.

4. Methodology

4.1. Survey

In order to achieve the study goals that aim at measuring the impact of management information systems with its dimensions (efficiency and effectiveness of information systems) and

knowledge management with its dimensions (creating the knowledge, storing the knowledge, sharing the knowledge, and applying the knowledge) on the employees' performance, in addition to the impact of information systems and knowledge management on the employees' performance with the mediator variable, employees' empowerment of human resources, in Pharmaceutical industries in Jordan. In order to achieve the main goal of the study, the questionnaire was used as a main tool to collect data regarding the independent variables; information systems (efficiency and effectiveness of information systems) and knowledge management (knowledge creation, storing, sharing, and applying), and the dependent variable (employees' performance), and the mediator variable employees' empowerment. The questionnaire was developed according to the administrative literature related to the study subject, respondent answered all item on five point Likert-scale ranging from "1" of "strongly disagree" to "5" of "strongly agree".

In order to show the direct impact of the independent variables on the dependent variable, and the indirect impact of the independent variables on the dependent variable in the presence of the mediator variable. The primary study tool (the questionnaire) consisted of four parts, where the first part contained the demographic information (gender, education level, position, and years of experience). The second part contained the paragraphs that measure the dimensions of the independent variables, knowledge management, where it contained four dimensions (knowledge creation, application, storing, and sharing); this part was designed according to the studies of Kasasbeh (2015), Ababneh and Hatamleh (2013), Giampaoli et al. (2017), Sweis et al. (2011), in addition to the dimensions of information systems (efficiency and effectiveness), this part was designed according to the studies of Al-Kshali and Al-Qutob (2007). The third part included measuring the mediator variable which is the employees' empowerment and its dimensions (delegation of authority and participation in decisions) and was designed based on the studies of Al-Mbaideen and Altarawnah (2011), Mohamadeya (2016), and Mughraj (2015). The fourth part included the dependent variable (employees' performance) and was designed based on the study of Al-Bahussin and El-Garaih (2015).

Before final distribution of the questionnaire, it was pre-tested with 4 faculty members and then pilot tested with 20 potential participants in order to provide validity and reliability of the items being measured.

4.2. Study Sample

Data were collected from 300 employees working in Pharmaceutical industries at all levels using a convenience sampling technique. Thirteen questionnaires were eliminated and 287 were considered for final analysis. Out of the 287 participants, there were 160 (55.7) Male with the majority hold Bachelor degree (70 %), and 161 (56.1) had less than 5 years or less experience in their job.

<Table 1. Description of the respondents' demographic profiles>

4.3. Research Results

Construct validity was assessed using exploratory and confirmatory factor analyses. First, exploratory factor analysis was performed with promax rotation method and principal component analysis. We entered all the question items simultaneously. Due to the large number of items, many items showed cross-loadings and were deleted. Additionally, some items showed factor loadings less than 0.40 and were also deleted. Finally, we got four distinct factors as was initially expected (i.e. Knowledge Management (KM); Information Systems (IS); Employees' Empowerment (EE); and Employees' Performance (EP)). Eigenvalues for the four factors were greater than 1.0. Cronbach's α-coefficient was applied to test the reliability of the constructs. The reliability of the constructs including the overall constructs of knowledge management, information systems, employees' empowerment and employees' performance was satisfactory with $\alpha > 0.60$ indicating acceptable internal consistency (Hair et al., 2010). Next, confirmatory factor analysis (CFA) was applied based on the output of EFA using Amos 20. We had to further delete some question items with loadings less than 0.50 (Hair et al., 2010) to improve model fit indices (i.e. EF3=0.273; EF4=0.322; EK4=0.336; DA2=0.178; DA3=0.166; BV2=0.272). The fit indices of the final model using first order constructs showed satisfactory levels (X2 = 503.336; d.f. = 269; X2/d.f. =1.871; GFI = 0.921; CFI = 0.932; NFI = 0.903; NNFI = 0.925; RMR = 0.048 and RMSEA = 0.041). The normed chi-square of 1.871 was below the maximum value of 3.0 (Bollen, 1989). Goodness-of-fit index (GFI), comparative fit index (CFI), normed-fit index (NFI) and non-normed fit index (NNFI) were higher than the recommended minimum value of 0.90 (Garver and Mentzer, 1999). Root mean square residual (RMR) was 0.048 and root mean square error of approximation (RMSEA) was 0.041 implying satisfactory level of unidimensionality and convergent validity (Garver and Mentzer, 1999; Hu and Bentler, 1999).

Furthermore, the standardized coefficients for all the question items were higher than twice of their standard errors, providing additional support for convergent validity (Anderson and Gerbing, 1988). Besides, the factor loadings of all the items were greater than 0.50. In addition, average variance extracted (AVE) values for all the measurement scales were higher than 0.50 providing additional evidence of convergent validity (Fornell and Larcker, 1981). The composite reliability of all the scales was greater than 0.70 providing a satisfactory level of reliability (Fornell and Larcker, 1981; Garver and Mentzer, 1999).

CFA analyses were repeated using second order factors of knowledge management and information system. The final model fit indices using second order constructs (employees' empowerment and employees' performance) fitted the data well (X2 = 461.595; d.f. = 243; X2/d.f. = 1.899; GFI = 0.932; CFI = 0.945; NFI = 0.912; NNFI = 0.937; RMR = 0.041 and RMSEA = 0.038). These indices indicated an acceptable level of unidimensionality and

convergent validity. Also, the standardized coefficients of all the constructs were higher than twice of their standard errors, providing evidence of convergent validity (Anderson and Gerbing, 1988). Moreover, all the factor loadings were higher than 0.50. Likewise, average variance extracted (AVE) values for all the constructs exceeded 0.50 supporting the convergent validity (Fornell and Larcker, 1981). The composite reliability of the two second order constructs exceeded 0.70 indicating sufficient levels of reliability (Fornell and Larcker, 1981; Garver and Mentzer, 1999). Table 2 shows the standardized factor loadings of EFA and CFA, Cronbach's alpha values and composite reliability of the first and second order constructs.

<Table 2: Reliability and validity of the constructs>

Discriminant validity was assessed by ensuring that the square root of each AVE value is greater than the absolute correlation value between that scale and other scales. All first and second order constructs met this criterion providing sufficient evidence of discriminant validity (Fornell and Larcker, 1981). In addition, The AVE value for each construct was higher than maximum shared squared variance (MSV) and average shared squared variance (ASV) values providing further evidence of discriminant validity (Hair et al., 2010). Table 3 reports discriminant validity results for first order constructs and Table 4 reports the results of the final model with second order constructs.

<Table 3: Means, standard deviations, AVE, MSV, ASV and correlation matrix of first order constructs>

<Table 4: Means, standard deviations, AVE, MSV, ASV and correlation matrix of second order constructs>

Structural equation modeling using AMOS 22 was performed to test the study hypotheses. SEM allows simultaneous testing of all hypotheses including direct and indirect effects. Additionally, SEM has the option of applying bootstrapping re-sampling approach to test the mediating effect. Bootstrapping is superior to the approach described by Baron and Kenny (1986) as normal distribution assumption of the indirect effect is not required and the accuracy of the results is not affected by the sample size (Hayes, 2009). As recommended by Hayes (2013), we selected 5,000 bootstrap samples with 99% bias-corrected confidence intervals. An alternative hypothesis regarding the mediating effect is accepted if the lower and upper bounds of confidence intervals

do not contain zero. This implies that the indirect effect is not zero with 99% confidence level. If the two bounds contain zero, then the alternative hypothesis is rejected (Hayes, 2013).

The results of the direct effects show that Knowledge Management is positively and significantly related to Employees' Empowerment ($\beta = 0.338$, $P < 0.000$), therefore hypothesis H1 is supported. Also, Information Systems is positively and significantly related to Employees' Empowerment ($\beta = 0.325$, $P < 0.000$), so hypothesis H2 is also supported. The direct effect of Employees' Empowerment on Employees' Performance is also positive and significant ($\beta = 0.314$, $P < 0.000$), therefore hypothesis H5 is supported. However, H3 and H4 were not supported ($\beta = 0.042$; $\beta = 0.104$) respectively. As for the mediating effect, the bootstrapping results show that the standardized indirect effect of Knowledge Management on Employees' Performance through Employees' Empowerment is 0.214 with $P < 0.000$. Thus, hypothesis H6 is supported. Also, hypothesis H7 is supported as the standardized indirect effect of Information Systems on Employees' Performance through Employees' Empowerment is 0.212 with $P < 0.000$. Further, the coefficient of determination (R^2) for Employees' Empowerment and Employees' Performance were 0.46 and 0.17 respectively, which indicates that the model does moderately account for the variation of the proposed model. Table 5 below provides summary of the tested hypotheses.

<Table 5: Summary of results>

5. Discussions and Conclusions

The results of the study support the first hypothesis, were it found a positive impact for knowledge management on employees' empowerment, and these results agree with the study of (Haghighi et al., 2014), where the results of this study showed a positive relation between the knowledge management operations and functional empowerment in Iran Airways, especially after applying the knowledge, where knowledge management plays a vital role in the success of the organization. This study also agrees with the study of (Khodabakhshi et al., 2013) which found a fruitful relation between knowledge management and functional empowerment, where the knowledge management facilitates the cooperation among employees and makes them able to increase their knowledge and skills. It also agrees with the study of (Somayyeh and Morteza, 2015) that showed a statistical relation between knowledge management and the dimensions of functional empowerment; self efficacy, self confidence, sense of belonging. It also showed that the staff shall carry out their duties well and have the skills and abilities required and the objectives of the organization is well known .the tool that can be helpful in this area to managers is knowledge management process and therefore it is empowerment. It also agrees with the study

of (Fardin, 2012) and the study of (Harandi and Motlagh, 2014), they all assured the presence of direct impact for the dimensions of knowledge management on the Employee empowerment.

The study also assured the presence of a positive impact between information systems and employees' empowerment, and this clarifies the vital role of information systems in delivering the information for the employees which facilitate the power delegation and decision participation, in this area it is supported by the study of (Al-Raja and Alomiam, 2013) which found a positive relation between information systems and functional empowerment in the governmental sector in Jordan (Municipality of Amman), but it indicated that despite of the impact of information systems on all the dimensions of empowerment, it didn't reach a high degree of effect. The study also agreed with the study of (Qudah and Melhem, 2011) which aimed at clarifying the impact of information systems on functional empowerment in the private schools in Irbid, and found a positive impact for the components of information systems (tools, software, databases) on functional empowerment.

The study didn't support the third hypothesis, where it found that there is no positive impact between the knowledge management and employees' performance, and this doesn't necessarily mean that the management don't know the importance of knowledge, but the management depends more on other tools to enhance employees' performance, in addition to the way they manage knowledge especially the way they apply it. The results also don't agree with the study of (Al-Ghunaim, 2013) which found that the higher use of knowledge management gives higher performance, and it came after creation of knowledge in the impact on the performance where the interaction between the employees helps in solving work problems. And that the organization has the ability to transfer the implicit knowledge in the minds of the employees to explicit knowledge by sharing and experience exchange. It also didn't agree with the study of (Gholami et al., 2013) which showed that the knowledge management processes have a positive impact and are statistically significant, where they indicated that the improvement in the practices of knowledge management (the most effective after spreading the knowledge) may play a vital role in improving the productivity, employees' performance, employees' creativity, and employees' work relations which is reflected on the performance of the organization as a whole.

The study also showed that there is no positive impact between information systems and employees' performance, and this may be explained by the fact that the company uses information systems in a tradition way to achieve the daily routine work, and certainly, this is not reflected on achieving the work in the required efficiency, and this may be because the company done follow the developments in the information systems specially the tools of analyzing the data, which help the employees to achieve their work professionally, help them to innovate, and collect the data about the surrounding work circumstances. The results also don't agree with the study of (Abu Kareem, 2013) that aimed at knowing the relation between information systems and the employees' administrative performance, and showed that the devices come in the first place in improving the performance, and then the users, then software, and the last were databases. The organizations should improve their infrastructure of information systems to go

with the modern tools and technologies, and the administrative policies of the organizations should direct the management information systems toward improving the performance to enhance the efficiency and effectiveness. The results also don't agree with the study of (Ahrabi and Darestani, 2016) which indicated a positive impact between the information systems and the employees' performance, and that the organization which uses the modern information systems helps the managers to reach the information regarding the financial performance quickly, in addition to helping in increasing the satisfaction of the employees which increase their performance more than the organizations that don't use the modern information systems.

The results support the fifth hypothesis that suggests a positive impact for the employees' empowerment on the employees' performance, and in this regard it agrees with the study of (Nzuve and Bakari, 2012). employees' empowerment may affect the performance in two different ways; first by determining the goals, where every employee will be aware of what to be done (and clarify his tasks) and this will reflect on the overall structure of the organization, afterwards the employees will be able to make their own decisions, and then they will be experienced in decision making with the time passes. The second way is that empowerment means accountability, which means freedom in decision making, and that, will put all the employees under accountability and they will perform more efficiently and effectively. It also agrees with the study of (Shih and Tsai, 2016) that found that the benefits of functional empowerment may help in changing the employees' views and gain more efficiency.

Despite all of that, the results of the study are positive and agree with the sixth hypothesis where there is a positive impact of the knowledge management on the performance through the mediator variable of employees' empowerment, the results are also supporting the seventh hypothesis that suggests a statistically significant effect between the information systems and performance through the mediator variable. Although the knowledge management and information systems don't have a positive impact on performance, but with the presence of employees' empowerment, these important assets became effective in increasing the performance through the best use of the employees' energies by the fruitful information they provide, either implicit or explicit, and by sharing these information with the employees using the information systems. This assures that employees' empowerment is one of the most important guarantees for the sustainability of the organization, because applying the empowerment has many benefits at all levels and increases the commitment of the employees to more responsibilities, and unleashes them to activate their innovative abilities and give them the power to go on.

5.1. Managerial Implications

The pharmaceutical industries in Jordan is pioneering, with a high investment opportunities, and high competitive advantage, and it needs more development and trust from the distributing companies which depends on the imported medicines some times. The results of the study pointed to some recommendations for the managers in the dataset of 287 employees' of Pharmaceutical industries in Jordan should look at empowerment as one of the priorities to be

developed in the company through some procedures that will enhance the empowerment for the employees, like; spread the concept of employees' empowerment among the employees by enhancing their organizational values, delegate the powers to them, and make them participate in decision making, and support the cooperation and mutual trust to enhance the empowerment.

The empowerment supporting environment should be reinforced by the cooperation between different departments and information sharing through an efficient information system that deliver the information in the right time to every employee according to his needs, enhances the communication, and provide tools to develop the employees' skills, encourage the initiatives, and give them the space to determine their own style to achieve the job. Working on eliminating the obstacles that prevent the information from reaching the individuals in the administrative and production departments, by giving the employees the complete freedom in their own knowledge and in applying this knowledge, and that will allow them to understand the importance of the information and find the way to best apply it. More attention to applying knowledge management by participating in the internal and external information networks, build the capacities of the employees and increase their abilities to use these networks, and focus on attracting the specialists in knowledge management to use their experiences in developing the cognitive processes in the Pharmaceutical industries in Jordan. Facilitate finding, transferring, spreading, exchanging the information and use the electronic information resources and the valuable available information to help developing their abilities to go with the development in the competitive business environment.

5.2. Future Research Directions

To sum ups, the goal of the study is to test a comprehensive and experimental model to study the relation between knowledge management, information systems, and employees' performance in the presence of employees' empowerment as a mediator variable. The study presented some results that agree with previous studies in this area, where it found an impact for knowledge management and information systems on employees' empowerment. But the results had some unexpected results also; where it showed that knowledge management and information systems have no impact on the employees' performance, and this doesn't agree with many previous studies in this area. But, these intangible assets, knowledge management and information systems, have indirect impact on the performance with the presence of employees' empowerment as a mediator variable. Thus, the study will give a clear view on the relation between knowledge management, information systems, and employees' empowerment when they all help increasing the employees' performance in the organization.

References

Ababneh, R., and Hatamleh, M. (2013). The Role of Organizational Culture in Supporting Knowledge Management in Public Hospitals in Jordan. *Jordan Journal of Business Administration*, 9(4), 651-670.

Abou Elnaga, A., and Imran, A. (2014). The Impact of Employee Empowerment on Job Satisfaction Theoretical Study, American Journal of Research Communication. *American Journal of Research Communication*, 2(1), 13-26.

Ahrabi, S.Z., and Darestani, S. A. (2016). Studying the Role of Management Information Systems in Improving Organizational Performance (Case Study: National Oil Rich Regions Company). *International Academic Journal of Business Management*, 3(10), 1-11.

Al-Adwan .S, Al-Wandawi, A., and Al-Shaibi, H. (2015). The Impact of Technological Capabilities on Organization's Success on Cellular Telecommunications Companies in Jordan. *Dirasat, Administrative Sciences*, 42(1), 147-160.

Al-Ali, R.M.A. (2013). *The Relationship between Knowledge Management Processes, Organizational Innovation and its Effect on Organizational Performance: An Applied Study at the ICT (Information and Communication Technology) Sector in Jordan.* Unpublished Master's Thesis, Middle East University, Jordan.

Al-Arabi, A. (2012). The Impact of the Use of Information Technology on the Performance of Employees in local Government Agencies. *Albahath Journal*, 10(1), 321-332.

Al-Bahussin, S.A., and El-Garaih, W. (2015). The Impact of Human Resource Management Practices Organizational Culture, Organizational Innovation and Knowledge Management on Organizational Performance in Large Saudi Organizations: Structural Equation Modeling with Conceptual Framework. *International Journal of Business and Management*, 8(22), 1-19.

Al-Batayneh, M. T. (2013). The Effect of Technology Transfer Process on Functional Performance in Irbid Government Electricity Com. Ltd. Case Study. *Dirasat, Administrative Sciences, Jordan University*, 40(2), 442-456.

Al-Jammal, H., Al-Khasawne, A., and Hamadat, M. (2015). The Impact of the Delegation of Authority on Employees' Performance at Great Irbid Municipality: Case Study. *International Journal of Human Resource Studies*, 5(3), 48-68.

Al-Kshali, S.J., and Al-Qutob, M. (2007). Effectiveness of Management Information Systems and Their Impact on Crisis Management: Field Study on Jordanian Industrial Companies. *Dirasat: Administrative Sciences*, 3(1), 24-45.

Almajali, D.A., Masa'deh, R. and Tarhini, A. (2016). Antecedents of ERP systems implementation success: a study on Jordanian healthcare sector. *Journal of Enterprise Information Management*, 29 (4), 16-29.

Al-Raja, M.N., and Alomiam, N.R. (2013). The Effect of Information Technology in Empowerment Public Sector Employees: A Field Study. *Interdisciplinary Journal of Contemporary Research in Business*, 5(1), 805-815.

Al-Zou'bi, K.Y., and Al-Zaidy, Z.H. (2012). The Impact of Management Information Systems (MIS) on Knowledge Management Processes (KMP) as Perceived by the Employees Working in the Centers of Ministries in Jordan. *Jordan Journal of Business Administration*, 8(4), 55-80.

Allahawiah, S., Al-Mobaideen, H., and AL-Nawaiseh, K. (2013). The Impact of Information Technology on Knowledge Management Processes: An Empirical Study in the Arab Potash Company. *International Business Research*, 6(1), 235-252.

Anderson, J.C., and Gerbing, D.W. (1988). Structural Equation Modeling in Practice: A Review and Recommended Two-Step Approach. *Psychological Bulletin*, 103(2), 411-423.

Ardin, H. F. (2012). Evaluation of Relationship between Knowledge Management and Human Resources Empowerment. *Advances in Environmental Biology*, 6(7), 1969-1978.

Awad, E.M., and Ghaziri, H. M. (2004). *Knowledge Management*. New Jersey: Pearson Education International –Prentice Hall.

Awamleh, N. A. (2013). Enhancing Employees Performance via Empowerment: A Field Survey. *Asian Journal of Business Management*, 5(3), 313-319.

Baron, R., and Kenny, D. (1986). The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations. *Journal of Personality and Social Psychology*, 51(6), 1173-1182.

Bollen, K.A. (1989). *Structural Equations with Latent Variables*. New York: John Wiley & Sons, Inc.

Bouraghda, H.T., and Dris, N.B. (2015). The Impact of Knowledge Sharing on the Human Resources Performance: A Case Study of TV and NR's Production Unit of Condor Company in Algeria. *Jordan Journal of Business Administration* , 11(4), 841-868

Crossman, M.M., Lane, H.W., and White, R.E. (1999). An Organizational Learning Framework: from Intuition to Institution. *Academy of Management Review*, 24(1), 522-537.

Dalkir, K. (2005). *Knowledge Management in Theory and Practice*. Oxford: Elsevier Butterworth–Heinemann.

Davenport, D. H. (2001). Knowledge Work and the Future of Management, Chapter in a Book, *The Future of Leadership*, Jossy-Bass, CA. pp. 67- 77.

Edgar, F., and Geare, A. (2005). HRM Practice and Employee Attitudes: Different Measures – Different Results. *Personnel Review*, 34 (5), 534-549.

Fardin, H.G. (2012). Evaluation of Empowerment of Human Resources and Effectiveness. *Journal of Basic and Applied Scientific Research*, 2(10), 9998-10006.

Fernandez, I.B., and Sabherwal, R. (2010). *Knowledge Management Systems and Processes*. M.E. Sharpe, Armonk, New York.

Fornell, C., and Larcker, D.F. (1981). Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, 18(1), 39-50.

Garver, M.S., and Mentzer, J.T. (1999). Logistics Research Methods: Employing Structural Equation Modelling to Test for Construct Validity. *Journal of Business Logistics*, 20(1), 33-57.

Gholami, M.H., Asli, M.N., NazariShirkouhi, S., and Noruzy, A. (2013). Investigating the Influence of Knowledge Management Practices on Organizational Performance: An Empirical Study. *Acta Polytechnica Hungarica*, 10(2), 205-216.

Giampaoli Gil, D. N. (2009). Management Information Systems and Strategic Performances: The Role of Top Team Composition. *International Journal of Information Management*, 29, 104-110.

Haghighi, M.A., Tabarsa, G.A., and Kameli, B. (2014). Investigation the Relationship between Knowledge Management Processes and Empowerment of Human Resources. *Global Journal of Management Studies and Researches*, 1(2), 122-130.

Hair, J., Black, W., Babin, B., and Anderson, R. (2010). *Multivariate Data Analysis*. Prentice Hall, Inc., Upper Saddle River, NJ.

Harandi, M.J., and Motlagh, A.N. (2014). Studying the Relationship Between Knowledge Management and Employee Empowerment, Case Study. *Computer Research Center of Islamic Sciences*, 2(3), 221-228.

Hawajrh, K., and Al-Mahasneh, M. (2015). The Impact of Intellectual Capital (Human and Social Capital) on Business Performance: Field Study in the Pharmaceutical Industry of Jordan. *Dirasat: Administrative Sciences*, 41(1), 19-43.

Hayes, A. (2013). *Introduction to Mediation, Moderation, and Conditional Process Analysis*. The Guilford Press, New York.

Hayes, A. (2009). Beyond Baron and Kenny: Statistical Mediation Analysis in the New Millennium. *Communication Monographs*, 76(4), 408-420.

Hsu, C., and Sabherwal, R. (2012). Relationship between Intellectual Capital and Knowledge Management: An Empirical Investigation. *Decision Sciences*, 43(3), 489-524.

Hu, L., and Bentler, P.M. (1999). Cutoff Criteria for Fit Indices in Covariance Structure Analysis: Conventional Criteria versus New Alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1-55.

Indermun, M.V., and SaheedBayat, M. (2013). The Job Satisfaction Employee Performance Relationship: A Theoretical Perspective. *International Journal of Innovative Research in Management*, 11(2), 1-9.

Inkinen, H. (2016). Review of empirical research on knowledge management practices and firm performance. *Journal of knowledge management*, 20(2), 230-257.

Jaradat, N., Almaani, A. E., and Alsaleh, A. R. (2011). *Knowledge Managemen*. Ithraa Publishing & Distribution, Amman, Jordan.

Kasasbeh, W. (2015). The Impact of Knowledge Management in the Development of a Culture of Excellence: An Empirical Study of the Commercial Banks Operating in the City of Tabuk. *Dirasat: Administrative Sciences*, 42(2), 267-287.

Khansharifan, A., Omran, M.S., and Askarzadeh, H. (2015). Investigating the Relationship between Knowledge Management and Employee Empowerment (Case study: Education Organization of Bojnourd City). *MAGNT Research Report*, 3(2), 502-512.

Khodabakhshi, F., Sajad, N.K., and Shiargar, M. (2013). The Impact of Knowledge Management on Innovation with the Mediating Role of Empowerment. *Life Science Journal*, 10(2), 1385-1390.

Kianto, A., Vanhala, M., & Heilmann, P. (2016). The impact of knowledge management on job satisfaction. *Journal of Knowledge Management*, 20(4), 621-636.

Krylova, K. O., Krylova, K. O., Vera, D., Vera, D., Crossan, M., & Crossan, M. (2016). Knowledge transfer in knowledge-intensive organizations: the crucial role of improvisation in transferring and protecting knowledge. *Journal of Knowledge Management*, 20(5), 1045-1064.

Laudon, K., and Laudon, J.P. (2012). *Management Information Systems*. 12th ed., Pearson Prentice Hall, New Jersey.

Lopez, S.P, Peon, J.M.M., and Ordas, C.J.V. (2004). Managing Knowledge: The Link Between Culture and Organizational Learning. *Journal of Knowledge Management*, 8(6), 93-104.

Malkawi, N., Alsalem, M. (2004). Effect of Structural Characteristics on the Effectiveness of Information Systems. Jordanian Journal of Applied Sciences, 11(7), 161-184.

Maruf, H., and Zhou, S. N. (2015). Knowledge Management in Global Organization. *International Business Research*, 8(6), 165-173.

Masa'deh, R. Shannak, R., Maqableh, M., & Tarhini, A. (2017). The Impact of Knowledge Management on Job Performance in Higher Education: The Case of the University of Jordan. *Journal of Enterprise Information Management*, *30*(2), 244-262.
Masa'deh, R. (2016). The Role of Knowledge Management Infrastructure in Enhancing Job Satisfaction at Aqaba Five Star Hotels in Jordan. *Communications and Network*, 8(1), 219-240.

Massaro, M., Handley, K., Bagnoli, C., & Dumay, J. (2016). Knowledge management in small and medium enterprises: a structured literature review. *Journal of Knowledge Management*, 20(2), 258-291.

Meyerson, G., and Dewettinck, B. (2012). Effect of Empowerment on Employees Performance. *Advanced Research in Economic and Management Sciences (AREMS),* 12(2), 40-46.

Mohamadeya, O.J. (2016). *The Effect of Functional Empowerment on the Creativity Behaviour of the Employees in the Jordan Tourism Board: Case Study*, Unpublished Master's Thesis, Middle East University, Jordan.

Mughraj, Q. (2015). *Impact of Employee Empowerment on Organizational Creativity: A field Study*. Unpublished Master's Thesis, Mohammad Khader University, Baskra, Algeria.

Nzuve, S.N.M., and Bakari, T. H. (2012). The Relationship between Empowerment and Performance in the City Council of Nairobi. *Problems of Management in the 21st Century*, 5, 83-98.

O'Brien, J., and Marakas, G. (2011). *Management Information Systems* (10th ed.). New York: McGraw, Hill Irwin.

Obeidat, B.Y., Al-Suradi, M.M., Masa'deh, R., and Tarhini, A. (2016). The Impact of Knowledge Management on Innovation: An Empirical Study on Jordanian Consultancy Firms. *Management Research Review*, 39(10), 1214-1238.

Parhizgar, M., and Kiarazm, A. (2015). The Effect of Organizational Factors on Knowledge Management Process. *Dirasat, Administrative Sciences*, 42(2), 667-680.

Qudah, S., and Melhem, Y. (2011). Impact of Information and Information Technology on Empowerment of Employees Private School Sector in Northern Region in Jordan. *Journal of Emerging Trends in Economics and Management Sciences (JETEMS*), 2(2), 40-48.

Raymond, M., and George, S.P. (2007). *Management Information Systems*, New Jersey: Prentice Hall, 10th ed.

Savery, L.K., and Luks, J.A. (2001). The Relationship between Empowerment, Job Satisfaction and Reported Stress Levels: Some Australian Evidence. *Leadership & Organization Development Journal*, 22(3), 97-104.

Shih, W. L., & Tsai, C. Y. (2016). The effects of knowledge management capabilities on perceived school effectiveness in career and technical education. *Journal of Knowledge Management*, 20(6), 1373-1392.

Siljanen, M. (2010). *An Employee Perspective to Performance Measurement and Management*: *A Public Sector Case Study,* Lappeenranta University of Technology, Russia.

Simard, C., and Rice, R.E. (2007). The Practice Gap: Barriers to the Diffusion of Best Practices. In Day, R. & McInerney, C. R. (Eds.). (2007). *Re-thinking knowledge Management: From Knowledge Management to Knowledge Processes.* Berlin: Springer-Verlag.

Somayyeh, S., and Morteza, P. (2015). Investigation the Role of Knowledge Management in Staff Empowerment (Case Study: General Department of Education, Western Azerbaijan Province). *International Journal of Review in Life Sciences,* Vol.5, No. 4, pp. 163-168.

Soto-Acosta, P., Soto-Acosta, P., Cegarra-Navarro, J. G., & Cegarra-Navarro, J. G. (2016). New ICTs for Knowledge Management in Organizations. *Journal of Knowledge Management*, 20(3), 417-422.

Stair, R.M., and George, S. P. (2012). *Principles of Information Systems*, Course Technology, Cengage Learning, (10th ed.), Joe Sabatino, Boston, MA, USA.

Sweis, R., Fellag, R., Bugjati, M., and Abu – Hammad, J. (2011). Knowledge Management Processes and Effect on Achieving Competitive Advantages: A Case Study of Jordan Telecom Group "Orange". *Dirasat, Administrative Sciences*, 7(4), 511-526.

Tong, J., and Yap, C. (1996). Information System Effectiveness, A Users Satisfaction Approach. *Information Processing and Management*, 32(5), 601-610.

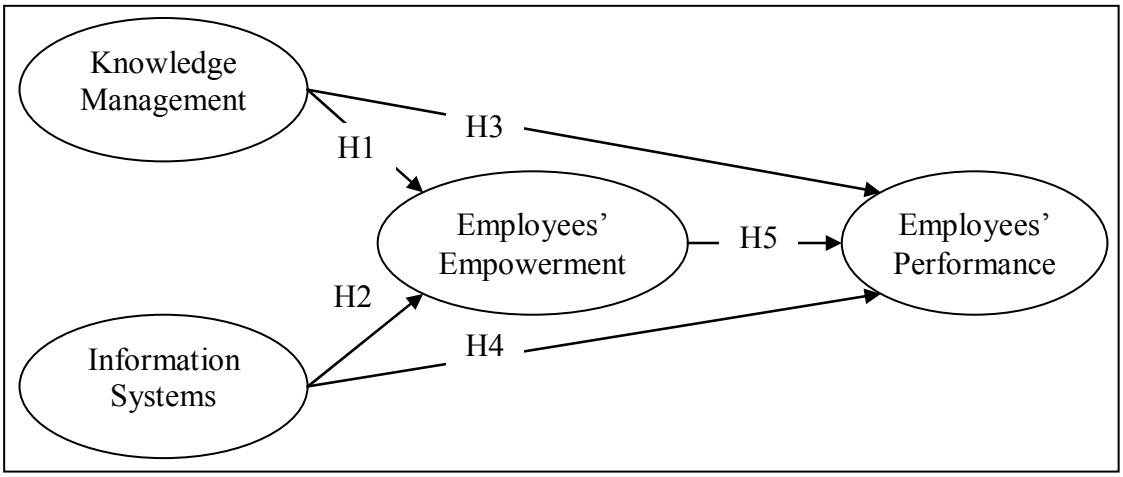

Figure 1: the proposed research model

Table 1. Description of the respondents' demographic profiles

Category	**Category**	**Frequency**	**Percentage %**
Gender	Males	160	55.7
	Female	127	44.3
Qualification	High school or less	27	9.4
	Bachelor	203	70.0
	Postgraduate studies	60	20.6
Position	Middle level management	149	67.6
	Low level management	93	32.4
Years of experience	Less than 5 years	161	56.1
	5 – less than 10 years	76	26.5
	10 – less than 15 years	33	11.4
	More than 15 years	16	5.6

Table 2: Reliability and validity of the constructs

Construct	Item number	Loadings EFA	Loadings CFA	Cronbach's alpha	Composite reliability
KM: Knowledge Generation (KG)				0.860	0.867
	KG1	0.854	0.968		
	KG2	0.644	0.750		
	KG3	0.602	0.638		
KM: Knowledge Storage (KS)				0.789	0.811
	KS1	0.881	0.975		
	KS2	0.501	0.521		
	KS3	0.528	0.692		
KM: Sharing Knowledge (SK)				0.907	0.921
	SK1	0.821	0.849		
	SK2	0.705	0.753		
	SK3	0.841	0.928		
KM: Applying Knowledge (AK)				0.865	0.889
	AK1	0.875	0.918		
	AK2	0.835	0.901		
	AK3	0.561	0.598		
IS: The Efficiency of Information Systems (EF)				0.829	0.856
	EF1	0.675	0.720		
	EF2	0.473	0.507		
IS: The Effectiveness of Information Systems (EK)				0.874	0.924
	EK1	0.792	0.910		
	EK2	0.872	0.846		
	EK3	0.506	0.692		
EE: Delegation of Authority (DA)[a]				0.756	0.798
	DA1[b]	0.502	0.597		
	DA4[b]	0.488	0.504		
EE: Participation in Decisions (PD)[a]				0.699	0.756
	PD1[b]	0.599	0.660		
	PD2[b]	0.511	0.533		
	PD3[b]	0.812	0.882		
	PD4[b]	0.512	0.544		
EP: Employees' Behaviour (BV)[a]				0.652	0.819
	BV1[b]	0.552	0.596		
	BV3[b]	0.516	0.575		
	BV4[b]	0.521	0.544		
EP: Employees' Personality (PS)[a]				0.895	0.909
	PS1[b]	0.898	0.950		
	PS2[b]	0.813	0.840		
	PS3[b]	0.743	0.884		
	PS4[b]	0.621	0.642		
EP: Employees' Results (RS)[a]				0.839	0.886
	RS1[b]	0.612	0.649		
	RS2[b]	0.832	0.886		
	RS3[b]	0.772	0.791		
	RS4[b]	0.798	0.941		

Table 3. Means, standard deviations, AVE, MSV, ASV and correlation matrix of first order constructs

Construct	Mean	SD	AVE	MSV	ASV	1	2	3	4	5	6
1. KG	3.819	1.113	0.578	0.335	0.213	0.760					
2. KS	3.229	0.728	0.589	0.324	0.274	0.545	0.767				
3. SK	3.620	1.154	0.642	0.322	0.198	0.512	0.431	0.801			
4. AK	3.436	0.941	0.621	0.311	0.207	0.532	0.382	0.561	0.788		
5. EF	3.856	0.673	0.559	0.318	0.167	0.436	0.441	0.479	0.487	0.773	
6. EK	3.329	0.744	0.601	0.276	0.116	0.321	0.378	0.327	0.298	0.302	0.775

Notes: Square root of AVE is on the diagonal

Table 4. Means, standard deviations, AVE, MSV, ASV and correlation matrix of second order constructs

Construct	Mean	SD	AVE	MSV	ASV	1	2	3	4	5
1. DA	3.339	0.562	0.613	0.312	0.233	0.782				
2. PD	3.428	0.551	0.624	0.343	0.221	0.447	0.789			
3. BV	3.126	0.501	0.549	0.298	0.219	0.431	0.541	0.740		
4. PS	3.169	0.703	0.541	0.325	0.226	0.389	0.547	0.521	0.735	
5. RS	3.275	0.553	0.576	0.382	0.195	0.399	0.438	0.349	0.369	0.758

Notes: Square root of AVE is on the diagonal

Table 5. Summary of results

Hypothesis	Path	Standardized effect	Result
H1	KM→EE	0.338***	Supported
H2	IS→EE	0.325***	Supported
H3	KM→EP	0.042	Not Supported
H4	IS→EP	0.104	Not Supported
H5	EE→EP	0.314***	Supported
H6	KM→EE→EP	0.214**(indirect effect)	Supported
H7	IS→EE→EP	0.212**(indirect effect)	Supported

Notes: ***p < 0.001; **p < 0.01; KM: Knowledge Management, IS: Information Systems, EE: Employees' Empowerment, EP: Employees' Performance

Biographical Details

Shadi Habis Abualoush is an Assistant Professor of business administration/ Management Information Systems in the faculty of administrative science and finance at Irbid National University . He gained his PhD from Jenan University of Lebanon in 2014. Dr abualoush has been published several papers in the area of information systems and management at the high ranked journals and participated in distinguished conferences and training courses in Europe. His current research interests include knowledge management, management information system, business intelligence (data mining and data warehouse.

Abdallah Mishael Obeidat is an Assistant Professor of Management Information Systems and business administration the University of Jadara in Jordan . He gained his PhD from Jenan University of Lebanon in 2014 , and MSc in MIS from The Arab Academy For Banking & Financial Sciences, Jordan, His current research interests include knowledge management, knowledge sharing, management information system, E- commerce. Obeidat has published more than 20 papers in information systems and Business.

Dr. Ali Tarhini is an Assistant Professor at the College of Economics and Political Science, Information Systems Department, Sultan Qaboos University. He holds a PhD in Information Systems from Brunel University London, UK, and MSc in E-commerce from University of Essex, UK. His research interests include Knowledge Management, Social Media, ICT in information systems (Technology adoption and diffusion), cross-cultural issues in IS (at individual and national culture, cross-cultural studies). Ali has published more than 50 articles in leading academic journals including Computers in Human Behavior, Information Technology & people, Journal of Enterprise Information Management, Journal of Management Development, Management Research Review, British Journal of Educational Technology, Interactive Learning Environments.

Dr Ra'ed Mas'deh is an Associate Professor of Management Information Systems at the University of Jordan. His work focuses on IT-Business Strategic Alignment, Strategic Use of Technology in the Public Sectors, Knowledge Management Capabilities, Sustainable Innovation and IT-based Competitive Advantage, Quantitative Methods, and Structural Equation Modeling.

Dr. Ali Al-Badi is an Assistant Professor of Information Systems/Computer Science at Sultan Qaboos University, Muscat, Sultanate of Oman. He received his education in Oman, Kingdom of Saudi Arabia, UK and USA. Ali has more than 20 years of practical and academic experience in Information Technology. After graduation, from Reading University, UK, he worked in the Center for Information Systems (CIS), Sultan Qaboos University. He has held different positions in the Center, where he gained most of his practical experience working on and overseeing different IT projects. From Sep, 2007 – March 2011 Ali held the CIS Director's position, sharing his time between managing the Center and performing his academic duties. Currently Ali is the HOD of the Information Systems Department at College of Economics and Political Science. Furthermore, Ali contributed to 15 different IT focused committees both at the University and national level. Furthermore, Dr. Ali has also been active in research. He has published 67 journal and conference papers, and he is a member in several international conferences program and scientific committees.