The Influence of ERP Usage on Organizational Learning: An Empirical Investigation

Faisal Aburub*
MIS Department, University of Petra, Amman, Jordan
faburub@uop.edu.jo

Received: 24/Feb/2018 Revised: 22/Aug/2018 Accepted: 16/Sep/2018

Abstract

A number of different hotels have been seen to direct significant investment towards Enterprise Recourse Planning (ERP) systems with the aim of securing sound levels of organizational learning. As a strategic instrument, organizational learning has been recommended in the modern management arena as potentially able to achieve a competitive edge and as stabilizing the success of businesses. Learning, as an aim, is not only able to improve the skillset and knowledge of employees, but also achieving organizational growth and development, whilst also helping to build a dynamic learning organization. Organizational learning is especially important in modern-day firms, when staff might choose to leave or change their role owing to the view that knowledge-sharing could be detrimental to their own success. The present work seeks to examine the impact of ERP usage on organizational learning. A new research model has been presented, this model has been empirically investigated in the Jordanian hotel industry. 350 questionnaires were distributed across a total of 350 hotels. 317 questionnaires were returned. Structural equation modeling (AMOS 18) was used to analyze the data. The findings from the empirical findings emphasize that ERP usage has significant impact on organizational learning. In line with the study findings, various aspects of organizational learning, such as continuous learning, system perspective, openness and experimentation and transfer and integration are recognized as able to best encourage the use of ERP. Suggestions for future work and discussion on research limitations are also discussed.

Keywords: ERP Usage; Organizational Learning; Organizational Performance.

1. Introduction

With the significant developments being witnessed in IT, it has become a very important part of day-to-day life [1], [2]. In the present competitive and fast-paced competitive business setting, there is a need for organizations to ensure they are able to efficiently exploit present IT infrastructure [3]. With businesses demonstrating continued investment in ERP systems, such systems are expected to encourage and drive performance, whilst creating value in what is becoming a more and more competitive and aggressive business setting. Knowledge-sharing has been improved as a result of ERP, with the flow of information and communication made quicker. Furthermore, ERP systems are continuing to develop, thus presenting a number of challenges for people, enabling them to improve, learn and adapt. Moreover, ERP systems have also affected businesses and their operations, with Ağaoğlu et al. [1] recognizing that the majority of works carried out in the field of ERP have not been successful in presenting a clear overview of the situation as it stands, predominantly owing to the fact that studies in this arena focus on a limited number of advanced countries, including the UK and the USA.

A number of works suggest that the adoption of an ERP system achieve improvements across the operational performance of organizations [4], [5]. In this regard, BolíVar et al. [5] highlight ERP systems as facilitating organizations in the streamlining, integration and standardization of their process flows and data. Organizations make well-considered changes to their installations over time and leverage ERP information so as to achieve improvements in various arenas, including order management and inventory management. It is common for organizations to incorporate modules extending ERP system use beyond the organization, with the inclusion of customers and suppliers. This continuous approach to fine-tuning, developing and extending, and stabilizing ERP systems has been recognized as further enhancing the performance of organizations.

As a strategic instrument, organizational learning has been recommended in the modern management arena as potentially able to achieve a competitive edge and as stabilizing the success of businesses. Learning, as an aim, is not only able to improve the skillset and knowledge of employees, but also achieving organizational growth and development, whilst also helping to build a dynamic learning organization [6]. In this vein, it is noted by Brown and Suzan [7] that learning is an important factor in any firm owing to the fact it facilitates competitive edge to be both achieved and extend-ed. Essentially, learning may act as a means of creating and developing a number of different capabilities in the organization, thus encouraging businesses to achieve continuous improvement as opposed to focusing on different types of knowledge. Organizational learning needs to be sufficient in generating, acquiring, transferring and

* Corresponding Author

integrating new knowledge, in addition to making changes to existing behaviors so as to emphasize new knowledge in mind of enhancing performance [4].

A number of works have been carried out in order to examine the effects of the adoption of ERP in line with business performance [8], [9], [10], [11]. Furthermore, organizational learning is recognized as a fundamental approach to enhancing the business in various fields [11]. In the literature, there is a few studies investigate the role of ERP usage on achieving organizational learning. As such, this work seeks to analyze the link between ERP use and organizational learning in the specific arena of the hotel industry in the Middle East, and specifically in Jordan. This investigation is focused on exploring and accordingly providing insight into how an empirical study combining the two paradigms is able to relate and extend theories in such arenas.

Accordingly, the main purpose of this research is to explore the impact of ERP usage on organizational learning. This research has been investigated empirically using hotel sector in Jordan. The paper is structured as follows: the next section provides literature review, followed by research hypotheses. Fourth section presents research model followed by hypotheses testing. Last section presents discussion and conclusion section.

2. Literature Review

The ERP system may be recognized as a number of different integrated software modules and a central database, which encourage a firm to manage the effective and efficient utilization of resources, i.e. financial, human resources and materials, through the automation and incorporation of business processes, data-sharing across the firm, and facilitating information access in a real-time setting [11], [12]. ERP aims to provide a number of advantages across a spectrum, including enhance quality, enhanced efficiency, profitability through enhanced capability, and productivity, with the addition of accurate communication and timely information. Businesses direct investment towards ERP systems in mind of attaining a number of advantages, which might be witnessed through enhanced organizational productivity, including lower costs, efficient communication across functional areas, and shortened lead times [13]. Previous literature has sought to garner an understanding into the motivational factors underpinning ERP benefits. In this regard, five dimensions of ERP benefits have been presented in the work of Jerez-Gomez et al. [14], including operational, managerial, strategic, IT infrastructure and organizational, with ERP benefit concluded as an ongoing process with benefits achieved at different rates across various core processes. Moreover, it was determined in the work of Hair et al. [13] that overall ERP advantages was mediated as a result of various business-related factors. A number of other ERP system-related benefits include its complete integration across all organizational processes, decreases in data entry volumes, the potential of technology to be upgraded, portability to other systems, the application of best practices, and adaptability [15].

Furthermore, ERP is viewed as being a strategic instrument with the capacity to integrate, synchronize and streamline business processes and data into one individual system so as to achieve a competitive advantage in what may be an uncertain business environment [16].

ERP is recognized as being one of the most recent technologies of which businesses may be able to take advantage [17]. ERP systems may be adapted to a certain limit in line with the particular requirements of the firm. In this vein, ERP was recognized as one of the most fundamental of developments in the corporate utilization of technology during the 1990s [18], [19]. Nonetheless, a number of different ERP projects have proven unsuccessful and therefore unable to attain the outcomes sought. Due to the costs of ERP implementation projects being significant, it is fundamental that firms achieve project success and use it efficiently so as to attain benefits as quickly as possible.

It is clear that ERP systems provide a number of organizational advantages. However, the effects of ERP usage on organizational learning are not clear. This study aims to examine this field.

Organizational learning is especially important in modern-day firms, when staff might choose to leave or change their role owing to the view that knowledge-sharing could be detrimental to their own success. In the view of Chao [20], businesses commonly expect knowledge-creation and learning to be natural for individuals, with knowledge shared in ways to encourage and motivate learning in groups and across the firm. Organizational learning is a process by which organizations create routines and knowledge that guide its future behavior and behavior through encoding inferences from experience [20],[21]. Organizational learning is fundamental across the process of garnering a competitive edge [22]. Accordingly, there is a need to analyze the effects on organizational learning and achieving a competitive edge, particularly in regards IT on organizational learning. Furthermore, the capacity of a firm to learn faster than the competition can be the only sustainable competitive edge; at the same time, ICT are known to facilitate improved performance across business activities whilst also enhancing organizational learning and the quality of such.

In the view of Ağaoğlu et al. [1], the business demonstrates learning in two different ways, namely through existing firm members or otherwise through new members who possess knowledge unknown to the firm. Organizational learning can be improved upon through the development of existing skills or new ones. In this regard, it is viewed as fundamental that attributes with the potential to enable firms to understand, possess and use knowledge are actively sought out [23] owing to the fact that organizational learning is not a fundamental cognitive activity.

Organizational learning may be recognized as the potential of a firm to implement sound management practices, procedures, policies and structure that enable and encourage learning. Learning is viewed as critical in a

firm owing to its ability to facilitate the generation and development of a sustainable competitive edge. Essentially, learning can also act as a way of generating and extending a wide range of business capabilities, thus encouraging organizations to achieve ongoing improvement as opposed to focusing on particular forms of knowledge [3]. In the view of Levitt et al. [24], organizational learning may be recognized as the process through which organizations learn, creating chance so as to ensure outcomes can be maintained and improved. In this regard, five different factors of organizational learning are presented by Madanhire et al. [25], including experimentation, risk acceptance, interaction with the environment, dialogue, and participation in decision-making. Experimentation may be viewed as the degree to which suggestions and new ideas are taken into account. Risk-taking is considered to be the degree of tolerance to errors and uncertainty. Interaction with the external setting relates to the links with the external environment. Dialogue is the collective analysis of assumptions, certainties and processes. Participative decision-making may be linked with the extent of power possessed by employees in regards decision-making.

In the view of Madapusi and Derrick [26], organizational learning encompasses continuous changes in the behavior and cognition of employees and management. In an organization, individual members facilitate learning, with the individual processes then embedded in business-related functions. Accordingly, organizational learning occurs through individuals' social processes, encompassing the creation, retention and transference of knowledge. As a whole, individuals improve the ability of the firm to learn, meaning the firm needs to be open to their efforts and accordingly applying the most suitable mechanisms so as to facilitate, support and reward learning [27]. Lee [23] present the view that learning may be witnessed across three levels, namely group, individual and firm. The concept suggest that change is witnessed across all levels of learning, with change witnessed through the form of new routines and practices that facilitate and further support the capacity to utilize learning so as to enhance performance. As such, organizational learning may be seen to encompass seven individual but nonetheless linked aspects at the individual, group and organizational levels, namely continuous learning, team-based learning, inquiry and dialogue, embedded system, empowerment, system connection, and strategic leadership [28].

A number of actions have been presented by McGill et al. [29] as ensuring learning capability, including experimentation, continuous improvement, teamwork and group problem-solving. Further, Bhatti [4] have devised a tool centered on the measurement of organizational learning, including various elements, namely managerial commitment, systems perspective, openness and experimentation and transfer and integration. Managerial commitment may be recognized as the potential of the organization to develop and facilitate support, and leadership commitment to create and build knowledge across the firm. Dedication across learning suggests that management are able to provide additional re-sources, garner new options, and apply the changes required in order to facilitate learning across the firm. By demonstrating such behavior, management are able to successfully create and support a learning setting that facilitates the firm in surviving and achieving success.

The system perspective is focused on ensuring that everyone in the firm adopts a shared vision and a mutual identity, and further involves building relatives and linking members with one another through the exchange and sharing of information and knowledge [30]. Experimentation and openness in this regard relates to the extent to which a firm may be open to implementing new suggestions and ideas [30]. This involves devising a structure that promotes the presentation of new ideas and innovativeness. Transfer and integration relates to the extent to which ideas, innovations and knowledge may be transferred, on an internal bases, through communication channels in a firm [30]. The ability of distributing new ideas and knowledge across various departments and functions is fundamental to any firm's success. Furthermore, continuous learning includes efforts of an organization to provide learning opportunities for its staff [28].

3. The Effects of ERP Usage on Organizational Learning

There is a need for businesses to enhance their performance on an ongoing basis not only to ensure they survive but also so that they achieve success across the competitive field. Organizational performance has various meanings to different groups; therefore, conceptual difficulties and a lack of clarity exist in regards its measurement. Organisational performance may be recognised as the overall capacity to gather and process resources—both human and physical—so as to satisfy business goals. More specifically, organisational performance is seen to stem from businesses and is therefore measures in line with objectives and goals. At the present time, as a result of enhanced competition across firms, in addition to the focus on organisational transformation and change, all firms seek to achieve effective performance. Understanding those issues associated with organisations results in greater efficiency and performance. Overall, organizational performance is seen to encompass both financial and non-financial considerations [27].

Organizational performance can be recognised as the extent to which organisations have been successful in satisfying their objectives, with organizational performance able to be measured in regards business learning, profitability, or other financial benefits in the management of knowledge. Without the ability to measure success, management and employee enthusiasm will be non-existent [28]. Accordingly, various works have suggested different perspectives in regards the measurement of performance. Organisational performance may be seen to consider how well businesses attain their financial and market aims, with a number of different scholars considering the subjective views of

management to measure the positive results of organisations [31]. Others, in contrast, utilise objective data, such as return on assets [32].

Organisational learning is defined as the capability within an organization to maintain or improve performance based on experience [28]. According to Ojha et al. [33], the process of improving organization's actions through better understanding and knowledge. Learning is considered to be an essential aspect in any business owing to the fact it facilitates the generation and development of a sustainable competitive edge. In essence, learning may act as an approach to generating and extending upon a number of organisational capabilities, thus encouraging organisations to demonstrate ongoing improved as opposed to focusing on particular types of knowledge. Organisational learning has been recognised as a strategic component when aiming to secure a competitive edge that can be maintained over time and in enhancing performance across firms. Various works have demonstrated organisational learning as having a clear, positive and direct effect on the performance of firms; on the other hand, others emphasise that, as a result of their effect on different aspects, this learning influences organisational performance in an indirect manner.

A number of studies have been conducted in mind of exploring the effects of organisational learning in line with various elements of a firm, as in the cases of [1], [3], [5] and [6]. As an example, Argote [3] analysed the effects of organisational learning on the utilisation of ERP systems, and further considered user satisfaction, positing that organisational learning indirectly influences user satisfaction, whilst also directly influencing the adoption of ERP system. The work of Peddler et al. [34] provides the suggestion that organisational learning adopts a mediatory role in the link between knowledge engagement and management.

Organisational learning has been defined in the work of Gomez [15] as a process as opposed to an outcome, with the process witnessing firms drawing lessons from history and accordingly completing their own interpretation and assigning them into organisational routines. Organisational learning depends on the way in which ideas, information and knowledge are utilised by members of a firm [35]. In this vein, Pedller et al. [36] posit the view that those organisational members with a larger number of networks and relationships might demonstrate a better degree of acquisition when it comes to information and knowledge. Moreover, the scholars further emphasise that those members of the firm with greater communication skills have a greater degree of access to various resources. As discussed earlier, ERP systems are well positioned to attain valuable outcomes. In the view of Lara et al. [18], however, these advantages are not always clear for those organisations adopting ERP. Although prior works have analysed the effects of the use of ERP on firms' various elements, especially in the case of firms operating in the manufacturing industry, it remains that very little focus has been directed towards the effects of the use of ERP on organisational learning within the hotel industry. According to Siniša et al. [28], information technologies can be used to support employees to get learning continuously. Therefore, it is reasonable to develop the following hypothesis

H1: ERP Usage Positively Influences Continues Learning

The use of ERP gives a greater degree of access to information, and further enables firms to organize their data [28]. Moreover, ERP usage facilitates access to information in a time-efficient manner, with the system integration enabling access to rich information from a number of different portals [30]. This may support staff of an organization to adopt shared vison and mutual identity. Accordingly, the following hypothesis is proposed

H2: ERP Usage Positively Influences System Perspective

According to Madanhire et al. [25], those staff members with ERP usage are recognized as having a greater degree of access to the ideas, insights and resources of other organizational members from varying departments. Accordingly, ERP usage, when successful, may help employees to present new ideas and innovativeness. As such, the following hypothesis is devised:

H3: ERP Usage Positively Influences Openness and Experimentation

The adoption of ERP encourages the sharing of information amongst customers, other organizational partners, and suppliers [28]. Such usage encourages cross-functional coordination [30], with shared information across various firm departments potentially resulting in organizational learning. This assists a firm in the application of sound management practices, procedure, policies and structures that can enable and encourage learning. Thus, the following hypothesis is formulated:

H4: ERP Usage Positively Influences Transfer and Integration.

4. Research Model

In consideration to the literature discussed, the research model presented below is introduced. The hypotheses devised in this work are also discussed below.

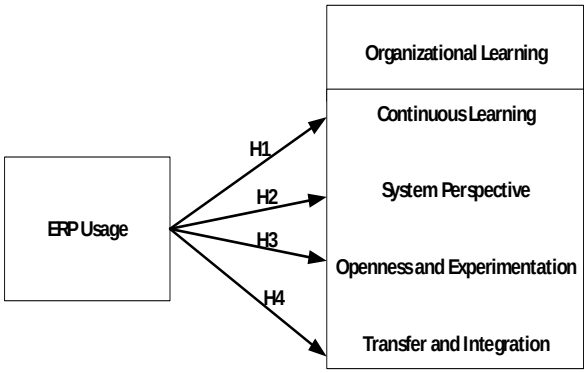

Fig. 1. Research Model

4.1 Research Methodology

In mind of exploring the impact of ERP usage on organizational learning, a research model has been devised. The model encompasses a total of five different elements, including ERP usage, continuous learning, systems perspective, openness and experimentation and transfer and integration, with each of these undergoing measurement and validation as follows: ERP usage measures were adapted from the work of Nwankpa and Yaman [30] and Fornell and Larcker [38], encompassing three items. The measures 'Systems Perspective', 'Openness and Experimentation' and 'Transfer and Integration' were incorporate in line with the work of Nwankpa and Yaman [30], whilst 'Continuous Learning' was adopted from Siniša et al. [28]. A total of four items were included in each of these measures, with the exception of 'System Perspective', which comprised 3 items. However, a number of measures underwent modification in line with the study context. All items were assessed using a five-point Likert scale. Appendix shows the items used to measure ERP usage and organizational learning.

This work warranted input from end users adopting the ERP systems across their hotels' activities, routine tasks and business processes. The present work gathered survey data through the application of a self-administered questionnaire, utilising a purposeful sample. Accordingly, Jordanian hotels that have adopted an ERP system were contacted, with data gathered from those business members utilising ERP systems within their work-related tasks and activities (hotels' managers). In total, 350 questionnaires were distributed across a total of 350 hotels; only a very small number (33) were excluded as a result of incomplete data. As such, a large number (317) provided the end volume of data for data analysis. The gender of the subjects were relatively evenly split: 56.6% male and 43.4% female. Participants' qualification was: 77% BCs, 19% MA, 4% PhD. Participants' experience: 22% less than 5 years, 61% 5-10 years, 17% greater than 10 years.

Across all of the constructs, factorial analysis was conducted. As suggested by Hair et al. [37], all item loadings were seen to exceed 0.60. Accordingly, the items are viewed as being representative of their constructs. When the Cronbach's Alpha is more than 0.70, reliability is seen to be achieved [37]. As can be seen in the Table 1, all constructs' reliabilities were seen to exceed 0.70; this means that all measures have an acceptable reliability level. Furthermore, through the use of average variance extracted (AVE), convergent validity was evaluated. The AVE of all constructs was seen to be greater than 0.50, as detailed in the table. Through the application of the Fornell-Larcker criterion, discriminant validly was assessed [38]. Moreover, as shown in the table below, the square root of each construct's AVE was found to exceed that of the correlations between the construct and all others. Accordingly, satisfactory levels of discriminant validity were demonstrated by the measurements. A relatively good fit was achieved through this conceptualization: Normed CMIN (CMIN/DF) (2.601), Root Mean Square Error of Approximation (RMSEA) (0.07), Incremental Fit Index (IFI) (0.959), (Tucker-Lewis Index) TLI (0.954) and Competitive Fit Index (CFI) (0.959).

Table 1. Measurements Validity and Reliability

	CR	AVE	TI	ERPU	CL	SP	OE
TI	0.931	0.694	**0.833**				
ERPU	0.817	0.528	0.312	**0.726**			
CL	0.914	0.605	0.530	0.390	**0.778**		
SP	0.934	0.741	0.230	0.426	0.402	**0.861**	
OE	0.884	0.656	0.504	0.316	0.347	0.229	**0.810**

TI: Transfer and Integration; ERPU: ERP Usage; CL: Continuous Learning; SP: System Perspective; OE: Openness and Experimentation;

5. Hypotheses Testing

In order to investigate the impact of use of ERP on organizational learning, AMOS 18 software was used. Fig 2 shows AMOS 18 proposed model.

It was found that ERP use has a positive influence on continuous learning, system perspective, openness and experimentation, transfer and integration. The four hypotheses are further sup-ported by the results: H1a (β=0.454, R2 = 0.388, p = 0.001); H1b (β=0.425, R2 = 0.411, p = 0.001); H1c (β=0.389, R2 = 0.344, p = 0.001); H1d ((β=0.402, R2 = 0.388, p = 0.001). Therefore, all hypotheses are accepted, as can be seen in Table 2.

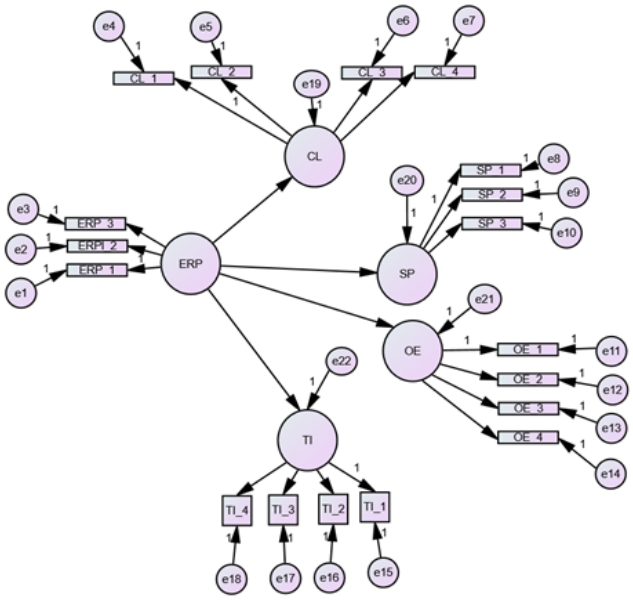

Fig. 2. Amos 18.0 proposed model

Table 2. Hypotheses Examining

Hypotheses	Path Coefficients	Significant Level	R2
H1: ERPU → CL	0.454	0.001	0.388
H1: ERPU → SP	0.425	0.001	0.411
H1: ERPU → OE	0.389	0.001	0.344
H1: ERPU → TI	0.402	0.001	0.388

6. Discussion and Conclusion

When considering prior works, this study analysed the relation of the use of ERP and organizational learning. The study model has undergone empirical analysis with

consideration to the Jordanian hotel sector, with the findings providing a number of valuable managerial and theoretical implications for both business professionals and researching academics.

First and foremost, the use of ERP has positive effect on continuous learning. This is explained, primarily, by the fact that the use of ERP provides integrated data [36] from various firm-related resources, whilst further enhancing access to data for improved learning processes. This, in the view of Lee et al. [22], further assists in enhancing ongoing learning opportunities for individuals. Furthermore, should employees be given continuous, sufficient information from various resources to allow them to complete their activities and tasks, they are then better positioned to enjoy their work and accordingly enhance their performance. This could potentially result in enhanced levels of organizational learning [15].

Secondly, the findings suggest that ERP usage influences system perspective. In the view of Argote [3] and Rajan et al. [39], the use of ERP has the capacity to link members with one another through exchanging information and knowledge. This results in firms progressing beyond the individual goals of employees and focuses more on adopting a shared, universal vision. Moreover, securing a system perspective provides an agreed upon action and language amongst those involved in the learning process, which subsequently leads to enhanced organizational learning [40].

Third, the findings have suggested that the use of ERP has both a positive and direct influence on experimentation and openness, with the researcher considering that the use of ERP might add to creating an environment that facilitates existing knowledge being called into question, thus enabling users to continuous renew, improve upon and widen organizational knowledge [40]. In this way, openness and experimentation are supported by the environment. In the view of Sadrzadehrafiei [41], these results in organizations being better positioned to be more flexibility in uncertain work settings and to demonstrate a greater degree of openness in regards learning best practices.

Lastly, as shown in the study findings, the use of ERP has a significant influence on transfer and integration, potentially owing to the use of ERP enhancing the capacity of firms to garner more information in greater detail, and to do so in real time; nonetheless, this has induced a significant distribution of information throughout the firm [15]. Moreover, transfer and integration is seen to be notably influential on organizational performance; when firms are able to distribute new ideas and knowledge across various boundaries and departments, they then might be able to achieve improvement in organizational performance [28].

This work sought to explore the impact of ERP usage on organizational learning. A new research model has been presented, this model has been empirically investigated in the Jordanian hotel industry. The findings from the empirical findings emphasise that ERP usage has significant impact on organizational learning.

In line with the study findings, various aspects of organizational learning, such as continuous learning, system perspective, openness and experimentation and transfer and integration are recognised as able to best encourage the use of ERP.

The findings have shown that the positive influence of the use of ERP on organizational learning in the Jordanian hotel industry. Therefore, hotels that already use ERP may provide members with support in the continuous process of learning, build an agreed vision and adopt a mutual identity, and build a structure that motivates and drives new ideas whilst embracing innovation and distributing ideas and knowledge across various hotel departments. Accordingly, hotel management needs to encourage organizational learning efforts across hotels to ensure the best outcomes of the use of ERP.

This study makes important theoretical and practical implications. This study shows the influence of ERP usage on organizational learning in Jordanian hotel sector, which has been mostly ignored by previous research. Although prior studies presented the importance of adoption of ERP on different areas of organizations, less is known about the impact of ERP usage on organizational learning. The empirical evidence reveals that ERP usage has positive influence on organizational learning. Therefore, this study pave the way for researches to conduct further investigation and understanding of IT role on achieving organizational learning.

Moreover, this study has key practical implications particularly for hotels' managers and executives who are seeking for utilizing ERP to achieve organization learning with hotel sector. Based on results of this study, mangers can understand that by increasing use of ERP in a hotel, this will lead to achieve organizational learning. In addition, practitioners should be aware that investing in training employees on ERP usage will contribute to increase opportunity of achieving organizational learning.

Despite the fact that this work provides various contributions, there are some limitations. Primarily, the suggested research model, with the inclusion of all relationships, has been examined in the Jordanian context, meaning subsequent works could focus on improving the generalizability of such findings through analyzing the hypothesized links with a sample based in other countries. Secondly, a limited number of factors with the potential to influence the use of ERP on organizational learning were considered. Although these aspects adopt a key role in terms of investigating the impact of ERP usage on organizational learning, other elements, including strategic leadership and empowerment, could also influence the impact of ERP usage on organizational learning. Accordingly, subsequent works should be carried out in mind of examining the influence of such elements. Fourth, this study is limited to hotel sector. More investigation could be performed on other sectors such as public sector. Furthermore, new study could be conducted to investigate the influence of using other

technologies and information systems such as e-commerce and web services on organizational learning.

Appendix

Items used to measure ERP usage construct

- Our hotel uses ERP system very intensively
- Our hotel uses ERP system very frequently
- Overall, our hotel uses ERP system a lot

Items used to measure Continuous Learning construct

- Our hotel enables employees to get required information at any time easily and quickly.
- Our hotel keeps an up-to-date database of employee skills.
- Our hotel creates systems to evaluate differences between current and expected performance
- Our hotel uses two-way communication on a regular basis, such as open meetings and suggestion systems

Items used to measure System Perspective construct

- All trained employees have information regarding hotel's objectives and goals.
- All units that make up our hotel (sections, departments, individuals and divisions work team) are aware of how they contribute to perform the all objectives and goals
- All sections that make up our hotel are unified working together in a coordinated method

Items used to measure Openness and Experimentation construct

- Our hotel encourages innovations and experimentation as an approach for business processes.
- Our hotel follows up activities of other hotels and is willing to adopt those techniques and activities that it may be interesting and useful
- Ideas and experience provided by external sources (training companies, consultants etc.) are vital tools for our hotel learning
- The culture of our hotel encourages opinion and expression as well as suggestions regarding the methods and procedures for activity performance

Items used to measure Transfer and Integration construct

- Failure and errors are always analyzed and discussed in our hotel at all level
- In our hotel, there are procedures and processes that offer employees the opportunity to talk about new activities, programs and ideas that may be beneficial to the hotel
- Our hotel has an instrument that allows what has been learnt in past situation to stay accessible to all employees
- Our hotel encourages cooperation, information distribution and teamwork

References

[1] Ağaoğlu, Mustafa, E. Serra Yurtkoru, and Aslı Küçükaslan Ekmekçi. "The effect of ERP implementation CSFs on business performance: an empirical study on users' perception." Procedia-Social and Behavioral Sciences, vol. 210, no. 22, pp. 35-42, 2015.

[2] Ahmad, M. Munir, and Ruben Pinedo Cuenca. "Critical success factors for ERP implementation in SMEs." Robotics and computer-integrated manufacturing, vol. 29, no.3, pp. 104-111, 2013.

[3] Argote, Linda. "Organizational learning research: Past, present and future." Management learning, vol.42, no. 4, pp. 439-446, 2011.

[4] Bhatti, "Critical success factors for the implementation of enterprise resource planning (ERP): empirical validation." The second international conference on innovation in information technology, 2005.

[5] BolíVar-Ramos, MaríA Teresa, VíCtor J. GarcíA-Morales, and EncarnacióN GarcíA-SáNchez. "Technological distinctive competencies and organizational learning: Effects on organizational innovation to improve firm performance," Journal of Engineering and Technology Management, vol. 29, no. 3, pp. 331-357, 2012.

[6] Bowen, L. Gary, Roderick A. Rose, and William B. Ware. "The reliability and validity of the school success profile learning organization measure." Evaluation and program planning, vol. 29, no.1, pp. 97-104, 2006.

[7] Brown, David H., and Susan He. "Patterns of ERP adoption and implementation in China and some implications." Electronic Markets, vol. 17, no.2, pp. 132-141, 2007.

[8] Chiva, Ricardo, Joaquin Alegre, and Rafael Lapiedra. "Measuring organisational learning capability among the workforce," International Journal of Manpower, vol. 28, no.3, pp. 224-242, 2007.

[9] Cook, Scott DN, and Dvora Yanow. "Culture and organizational learning," Journal of management inquiry, vol. 2, no. 4, pp. 373-390, 1993.

[10] Dong, John Qi, and Chia-Han Yang. "Information technology and organizational learning in knowledge alliances and networks: Evidence from US pharmaceutical industry," Information & Management, vol. 52, no. 1, pp. 111-122, 2015.

[11] Farhanghi, Ali Akbar, Abbas Abbaspour, and Reza Abachian Ghassemi. "The effect of information technology on organizational structure and firm performance: An analysis of Consultant Engineers Firms (CEF) in Iran," Procedia-Social and Behavioral Sciences, vol. 81, pp. 644-649, 2013.

[12] Goh, Swee C. "Improving organizational learning capability: lessons from two case studies," The learning organization, vol. 10, no. 4, pp. 216-227, 2003.

[13] Hair, R. E. Anderson, R. L. Tatham, and W. C. Black, Multivariate data analysis (5th ed.). New Jersey: Prentice-Hall, 2012.

[14] Jerez-Gomez, Pilar, José Céspedes-Lorente, and Ramón Valle-Cabrera. "Organizational learning capability: a proposal of measurement." Journal of business research, vol. 58, no. 6, pp. 715-725, 2005.

[15] Jerez-Gomez, Pilar, José Céspedes-Lorente, and Ramón Valle-Cabrera. "Organizational learning capability: a proposal of measurement." Journal of business research, vol. 58, no. 6, pp. 715-725, 2005.

[16] Kumar, Vinod, Bharat Maheshwari, and Uma Kumar. "An investigation of critical management issues in ERP implementation: emperical evidence from Canadian organizations." Technovation, vol. 23, no.10, pp. 793-807, 2003.

[17] Kwahk, Kee-Young, and Hyunchul Ahn. "Moderating effects of localization differences on ERP use: A socio-

technical systems perspective." Computers in Human Behavior, vol. 26, no. 2, pp. 186-198, 2010.
[18] Lara, Francisco J., and Andres Salas-Vallina. "Managerial competencies, innovation and engagement in SMEs: The mediating role of organisational learning." Journal of Business Research, vol. 79, no. 15, pp. 152-160, 2017.
[19] Laudon, Kenneth C., and Jane Price Laudon. Management information systems. Vol. 8. Prentice Hall, 2015.
[20] Chao, Y.C. Organizational learning and acquirer performance: How do serial acquirers learn from acquisition experience?. Asia Pacific Management Review, 23(3), pp.161-168, 2018.
[21] Wan, S. and Niu, Z. An e-learning recommendation approach based on the self-organization of learning resource. Knowledge-Based Systems, 160, pp.71-87,2018.
[22] Lee, Heeseok, and Byounggu Choi. "Knowledge management enablers, processes, and organizational performance: An integrative view and empirical examination." Journal of management information systems, vol. 20, no. 1, pp.179-228, 2013.
[23] Lee, "Relationship between the use of information technology (IT) and performances of human resources management (HRM)," Degree of Docotor of Business Administration, Alliant International University, San Diego, CA, 2008.
[24] Levitt, Barbara, and James G. March. "Organizational learning." Annual review of sociology vol. 14, no. 1, pp. 319-338, 1988.
[25] Madanhire, Ignatio, and Charles Mbohwa. "Enterprise resource planning (ERP) in improving operational efficiency: Case study." Procedia CIRP40, pp. 225-229, 2016.
[26] Madapusi, Arun, and Derrick D'Souza. "The influence of ERP system implementation on the operational performance of an organization." International Journal of Information Management, vol. 32, no.1, pp. 24-34, 2012.
[27] Marsick, Victoria J., and Karen E. Watkins. "Demonstrating the value of an organization's learning culture: the dimensions of the learning organization questionnaire." Advances in developing human resources, vol. 5, no .2, pp.132-151, 2003.
[28] Siniša Mitić, Milan Nikolić, Jelena Jankov, Jelena Vukonjanski, Edit Terek. "The impact of information technologies on communication satisfaction and organizational learning in companies in Serbia," Computers in Human Behavior, vol. 76, pp. 87-101, 2017.
[29] McGill, Michael E., John W. Slocum Jr, and David Lei. "Management practices in learning organizations." Organizational dynamics, vol. 21, no.1, pp. 5-17, 1992.
[30] Nwankpa, Joseph, and Yaman Roumani. "Understanding the link between organizational learning capability and ERP system usage: An empirical examination." Computers in Human Behavior, vol. 33, pp. 224-234, 2014.
[31] Motwani, Jaideep, Asli Yagmur Akbulut, and Vijay Nidumolu. "Successful implementation of ERP systems: a case study of an international automotive manufacturer," International Journal of Automotive Technology and Management, vol. 5, no.4, pp. 375-386, 2005.
[32] Motwani, Jaideep, et al. "Successful implementation of ERP projects: Evidence from two case studies." International Journal of Production Economics, vol. 75, no. 2, pp. 83-96, 2002.
[33] Ojha, D., Struckell, E., Acharya, C. and Patel, P.C. Supply chain organizational learning, exploration, exploitation, and firm performance: A creation-dispersion perspective. International Journal of Production Economics, 204, pp.70-82, 2018.
[34] Nwankpa, Joseph K., and Yaman Roumani. "The Influence of Organizational Trust and Organizational Mindfulness on ERP Systems Usage." CAIS, vol. 34, pp. 85-98, 2014.
[35] Nwankpa, Joseph K. "ERP system usage and benefit: A model of antecedents and outcomes." Computers in Human Behavior, vol. 45, pp. 335-344, 2015.
[36] Peddler, J. Burgoyne, and T. Boydell, The learning company, a strategy for sustainable development. London: McGraw-Hill, 1998.
[37] Hair Jr, J. F., W. C. Black, B. J. Babin, and R. E. Anderson. "Multivariate data analysis (Seventh, Pearson new international ed.)." Harlow: Pearson Education Limited 2014.
[38] Fornell, C., & Larcker, D. F. Evaluating structural equation models with unobservable variables and measurement error. Journal of marketing research, 39-50,
[39] Rajan, Christy Angeline, and Rupashree Baral. "Adoption of ERP system: An empirical study of factors influencing the usage of ERP and its impact on end user." IIMB Management Review, vol. 27, no. 2, pp. 105-117, 2015.
[40] Saadat, Vajiheh, and Zeynab Saadat. "Organizational learning as a key role of organizational success." Procedia-Social and Behavioral Sciences, vol. 230, pp. 219-225, 2016.
[41] Sadrzadehrafiei, Samira, et al. "The benefits of enterprise resource planning (ERP) system implementation in dry food packaging industry." Procedia Technology, vol. 11, pp. 220-226, 2013.

Faisal Aburub is currently an associative professor at MIS department in University of Petra, Amman, Jordan. He holds PhD degree in Information Systems from University of the West of England, UK. Aburub has more than 10 years of experience in application business process modelling concepts on different business environments. His research interests lie in ERP systems, organizational agility, and bridging the gap between business and system models.