

The Impact of Enterprise Resource Planning Systems on Project Management Performance in Jordanian Hospitals

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Abstract. Project management is to improve quality, reduce cost and delivery time of a project, and one of the ways to achieve this purpose is through an effective organization's resource planning systems. However, Enterprise Resource Planning system is an example of a planning system that have the fundamental benefit of achieving this aim since it is a centralized databased system with various functional modules. Thus, the purpose of this study is to examine the impact of organization's resource planning on project management in Jordanian hospitals. Primary data of 273 respondents working in four MoH hospitals in Jordan was applied. By using Pearson correlation and multiple regression were carried out using Statistical Package for Social Sciences (SPSS) v22 to analyze the data, the results show that there is a positive significant relationship between organizations resource planning systems and project management. This study suggests that the use of an organization's resource planning systems such as ERP system in Jordanian hospitals improve project management in Jordanian hospitals because it has the built-in industry-specific common practices that facilitate best practices, reduce cost, enhance efficiencies and decreases the potential for project failures.

Keywords: Project Management, Enterprise Resource Planning, Healthcare Sector, Jordanian Hospitals, Business Intelligence

1. Introduction

Organization's resource planning system or systems could be a group of or a solution software integrating functions of business and data into one single system and shared within an organization (Alsharari, 2022; Seo, 2013). An instance is the Enterprise Resource Planning (ERP) that is invented from the production and manufacturing planning systems applied by the manufacturing industry. However, the scope of ERP has been expanded in the 1990's to include some "back-office" functions, which include production planning, finance, and human resources (Swartz & Orgill, 2001). In addition, other business extensions have been incorporated in ERP in recent years, such as customer relationship management and supply chain management for more feasibility (F. Alnaser et al., 2023). The main objective of ERP is based on increasing operating efficiency through improvement of business processes and reduction of costs (Madanhire & Mbohwa, 2016). ERP give room for communications among different departments with varied necessities through the share of same information in one single system, which implies that ERP improve cooperation and relationship among organization's business units (Majeed & Rupasinghe, 2017). Also, ERP normalizes procedures and data in an organization with the best practices. The organization also simplifies data flow among different business parts through creation of one-transaction system (Aslam et al., 2022). Standardizing and integrating data and processes give rooms to organization the opportunity of unifying administrative activities, improving the capability of deploying functionality of new information system, and reduction of costs of maintaining information system (Curry et al., 2019).

The advantages of ERP has led it to be the backbone of organizations' business intelligence through providing managers a unified assessment of business processes (Stjepić et al., 2019). One of the intentions of ERP is on easy adaptation to new business demands. The incessant technological improvement and the growing ERP complexity necessitate regular upgrade of systems by organizations (Barth & Koch, 2019). Most based vendors of ERP offer the chance to update processes and fit in with the apparent best practices so as to quickly meet up with the changing business environment and improve the competitiveness of the organization (Seethamraju, 2015). However, one of the sector that ERP is paramount to is the healthcare sector due to its complexity nature which include large number of departments and patient care systems (Saxena & McDonagh, 2019). Prior researches have stressed that there is a positive relationship between investment in information system and the productivity of healthcare service (Grossman, 2017). This is because Implementation of an information system has increased the reliability on the healthcare system

By assisting in improving its management, diagnosis of diseases and other services (Awotunde et al., 2022).

The use of ERP in healthcare sector is a huge integration of system with the ability of supporting the needed information of the healthcare system which covers the management patient, auxiliary, clinical, finance, research and projects (Almajali et al., 2016). Also, the use of ERP in healthcare has led to improvement in quality of patient care, health services management and material management process (Fiaz et al., 2018). On the other hand, project management is a professional and systematic specialization which is different from other traditional management due to the characteristic of projects of being temporary, limited, unique, innovative, and multidisciplinary in nature (Meredith et al., 2017) and it is broadly accepted that it needs its own techniques and tools (Kerzner, 2017). Therefore, project management provides organization the opportunity to be effective, efficient, and competitive in a complex, unstable, and dynamic environment (Gyemang & Emeagwali, 2020). A systematic project management comprises of toolkits, models and methods which can be seen as the successive application of structured procedures aim at the institutionalization of standardized practices (Ćirić et al., 2016; Halim et al., 2023). With the use of well-implemented and well-structured procedures, the store and transfer of individual or organizational capabilities over time, space and context can be facilitated. Thus, project management make organizations to be less susceptible to losing the tacit knowledge stored in different individual memories (Mohajan, 2016).

The study gap is manifested based on the importance and advantages of using an enterprise resource planning (ERP) system in any organization such as the healthcare sector, it is assumed that an effective ERP system will help achieve and improve the success of project management in the healthcare sector (Garefalakis et al., 2016). Especially since the health sector in Jordan is considered one of the sensitive sectors, which suffers from many pressures, especially after the Corona pandemic (Ghareeb et al., 2021). The Jordanian health sector suffers from many challenges from a financial point of view, as an investment that requires a huge financial flow, in addition to Jordan receiving many refugees, this sector has increased, which generated challenges and burdens (Doocy et al., 2016), which reinforces the study problem. However, there are dearth of empirical studies that have examine this specifically in the context of Jordan healthcare sector where there is rapid growth, and the application of project management is becoming a vital issue due to the implementation of modern projects (Mustafa & Alzubi, 2020). Thus, the aim of this study is to examine the impact of organization's resource planning systems proxy by ERP system on project management in healthcare sector focusing on public hospitals in Jordan. The rest of this paper is prearranged as follows. Next section elaborates on the literature review; the third section explained the methodology; the fourth section provides results and discussions on the findings; the fifth section focused on conclusion with provision of implications, limitations and suggestions for future studies.

2. Literature Review

Most of the past studies on project management concentrate on the success of a project management. These studies have been able to ascertain that many factors contribute to the success of a project, and also as stated A similar argument is given by Kerzner, (2017) that project success remains a poorly understood concept and concluded that projects are often undertaken without defining how the success of these projects will be judged. As a result of the difficulties associated with conceptualizing project success, it remains subjective and variable from one person or group to another. That which is not defined cannot be measured, and that which cannot be measured cannot be monitored, controlled, or improved.

Regarding ERP system and project management, there have been a dearth of study on the relationship between ERP system and project management on healthcare sector. Few studies on ERP system focused on its benefits and implementation. For instance, Rouhani & Mehri, (2018) examined the benefits of ERP through a survey and defined 31 empowering benefits for this enterprise system based on a review of the literature and classification of the benefits into four categories, including informative, communicative, growth and learning, and strategic benefits. The findings showed that the communicative, strategic, and empowering advantages are important benefits. A survey of 30 SMEs in the Republic of Macedonia was undertaken by Tasevska et al., (2014). The findings demonstrated that SMEs utilized common project planning techniques despite not considering planning to be a distinct phase of ERP deployment. Taking into mind the success of the ERP deployments, this study indicated that the majority of representatives see the project as beneficial in terms of client satisfaction and perceived quality metrics. Using several techniques, When Cucciniello et al., (2016) compared the adoption and implementation of identical medical record systems at two different hospitals, they discovered that doing so improved information quality, data sharing, and cost effectiveness for healthcare organizations..

Past studies on project management focused on the relationship between project management and project success or project performance. The study of, Ajmal et al., (2017) examined the relationship between project management systems and project success in United Arab Emirates and found that there is a positive significant effect of project management systems on project success. In addition, Carvalho & Rabechini Junior, (2015) investigate the relationship between project management performance and project success in three countries (namely, Chile, Brazil, and Argentina) using three

years' data from 1387 projects collected through a longitudinal field survey and applied structural equation modelling for analysis. The findings show that their effective project management positively influence their project success. Furthermore, Umulisa et al., (2015) examine the effects of project resource planning practices on project performance in Rwanda. Using a mixed data (quantitative and qualitative data), with a sample of 120 respondents and analyzed through SPSS. The findings show that project resource planning practices positively has influence on project performance. This previous study showed that there is a relationship between ERP system and project management. However, there are very limited studies on the relationship between ERP system and project management (Tasevska et al., 2014).

2.1. Organization's resource planning system & project management

For projects to be executed effectively and efficiently, an organization's resource planning system (ERP) and project management must work together. ERP systems, which stand for enterprise resource planning, are fundamentally comprehensive software programs made to manage many aspects of an organization's operations, including finance, human resources, procurement, inventories, and manufacturing (AboAbdo et al., 2019; Yaseen, 2022). These systems centralize data, automate procedures, and give organizations real-time visibility into their resources and operations. The goal of project management, on the other hand, is to achieve particular objectives within predetermined restrictions like time, budget, and scope. It is an organized approach to planning, executing, monitoring, and managing projects. The possibility for integration and collaboration between these two crucial facets of organizational management is what gives them their synergistic relationship (Masa'deh et al., 2017). Project management and ERP system integration can take place at a number of crucial stages in an organization's process (Toumeh et al., 2023). For instance, ERP systems can provide project managers with real-time data on resource availability, which includes information about workers, equipment, and supplies (Sheik & Sulphrey, 2020). Furthermore, ERP systems can be used to manage project budgets effectively, ensuring that project financials are consistent with the organization's overall financial statistics (Ahmad et al., 2021; Ameen et al., 2018). ERP systems also speed up the purchasing process, ensuring the prompt availability of supplies and materials and preventing potential project delays (Monk & Wagner, 2012). Project managers can also easily access human resources information from ERP systems to assign qualified workers to different projects (Hustad & Olsen, 2013). Project management and ERP systems can work together to great advantage. This integration improves resource allocation efficiency by successfully reducing over allocation and underutilization of priceless resources (Amini & Abukari, 2020). Additionally, it aids in more precise financial tracking by enabling project managers to keep track of project costs in real-time and compare them to projected expenditures, giving them more power over project finances.

However, it is crucial to recognize the difficulties and factors involved in integrating project management and ERP (Haddara et al., 2022). As erroneous or inconsistent data can diminish the advantages of integration, it is crucial to ensure data accuracy and consistency across ERP and project management systems (Mahar et al., 2020). To help employees adapt to integrated systems and procedures, firms must establish strong change management methods. The ERP system must be able to accommodate the varying needs of various projects and project sizes, making scalability a crucial consideration (Ranjan et al., 2016). Project delays are further decreased by the streamlined procurement procedures made possible by ERP integration, which guarantees that materials and supplies are accessible when needed. Additionally, by promoting better coordination and cooperation amongst project teams, departments, and stakeholders, this integration promotes enhanced collaboration, ultimately leading to more fruitful project outputs. the beneficial interaction between enterprise resource planning systems and project management, highlighting how integration can improve resource management, financial control, and project success as a whole. While integration has many benefits, businesses must solve issues with data quality, change management, and scalability in order to fully realize this synergy's potential. Based on the above, the following

hypothesis was proposed

H1: Organization's resource planning system has positive effect on project management in Jordanian hospitals.

H2: ERP as an organization's resource planning system has effect on project management in Jordanian hospitals.

2.2. healthcare sector in Jordan

Like many other nations, Jordan's healthcare system encounters a number of particular difficulties that affect how it is seen generally and how successful it is (Alghizzawi et al., 2023). The stress on the healthcare system brought on by a growing population and an influx of migrants is one of the major problems (Rahi et al., 2020). Jordan has taken in a sizable number of refugees from nearby nations like Syria and Iraq, which has put tremendous strain on its healthcare system. The popular view of the healthcare system has been negatively impacted by this strain, which frequently leads to congested hospitals and clinics, resource constraints, and lengthier wait times for medical services (Doocy et al., 2016). The cost of healthcare presents another difficulty. Although Jordan has made progress in ensuring that everyone has access to healthcare, many people still struggle to pay for medical care, prescription drugs, and insurance payments (Alghizzawi et al., 2019). Because of the high cost of healthcare, some people may delay obtaining treatment, which could eventually result in more serious health issues. This problem emphasizes the requirement for continual initiatives to provide healthcare access and affordability for all (Katoue et al., 2022). Concerns exist over healthcare standards and quality as well. In Jordan's healthcare institutions, there have been instances of medical blunders and problems with patient safety. These occurrences may decrease public confidence in the healthcare system and cast doubt on the general standard of care. Addressing these issues is essential for enhancing public perception of the healthcare industry and maintaining patients' wellbeing (Khater et al., 2015). Greater funding is also required for health education and preventive healthcare. Long-term healthcare costs can be decreased by encouraging better lifestyles and illness prevention. But for Jordan to achieve these objectives, there must be coordinated efforts in public health initiatives and education (A. S. Alnaser et al., 2020).

The opinion of the effectiveness and quality of Jordan's healthcare system is shaped by a number of defining traits. A dual healthcare system, which provides both public and private healthcare services, is one significant feature. Residents have options thanks to this duality, but it also makes healthcare more inequitable in terms of access and standard of service. Although the private sector frequently provides more sophisticated and specialized services, it can be prohibitively expensive for many, which results in unequal access to healthcare (Rasmi et al., 2018). Jordan's healthcare system is distinguished by a comparatively high degree of medical knowledge and skilled medical personnel. The fact that many Jordanian medical professionals have studied and trained overseas helps to explain why the nation is known for having top-notch healthcare. This competence frequently draws patients from nearby nations in need of specialist care, enhancing Jordan's reputation as a regional healthcare hub (Katoue et al., 2022). Although Jordan's healthcare system has made tremendous strides in expanding access to medical care, it still faces a number of difficulties relating to capacity, cost, quality, and a lack of qualified staff. For the healthcare industry to be seen favorably by the public and for all citizens to have access to high-quality and inexpensive healthcare services, these issues must be resolved. The dual system, high degree of medical competence, emphasis on medical travel, and strong pharmaceutical sector all define Jordan's healthcare system. Due to population increase and the presence of refugees, these qualities lead to both good opinions of the industry and access and resource issues.

3. Methodology

3.1. Design of Questionnaire

Data collection uses the questionnaire survey tool. The research tool is composed of three components. The use and impact of ERP systems are covered in the first section; project management in healthcare is covered in the second section; and demographic factors are covered in the third section. The first section of the questionnaire is based on five impact variables: individual impact, system quality impact, organizational impact, information quality impact, and overall impact of using ERP in a healthcare setting, with six items each (Chan et al., 2008). The second parts of questionnaire deal with the project management in healthcare. The measurement of this variable is combination of two items each from project management leadership, project management staff, project Success (Self-developed), project management performance, and project management key performance indicators (Kerzner, 2017; Meredith et al., 2017), making up ten items. Closed-ended in this study, questionnaires on a Likert scale ranging from 1 to 5 are employed. Strongly disagreeing is indicated by a number between 1 and 5, whereas agreeing is indicated by a number between 4 and 3. The responder's name, position within the company, and any relevant experience are included in the final section, which deals with demographic information about the respondent (medical staff).

3.2. Data Collection

The target population of this study was healthcare providers and administrators who worked at 4 accredited Ministry of Health (MoH) hospitals in Jordan. A list of all the targeted staff members was obtained from the department of human resources at each of the selected hospitals. A total of 400 questionnaires were administered, but 302 were retrieved. In the process of entering the data, 273 questionnaires were found to be completed, making up 68.25% of the total distributed questionnaires. Analysis tests which include Cronbach alpha, Pearson correlation and multiple regression were carried out using Statistical Package for Social Sciences (SPSS) v22 (Habes et al., 2021).

4. Data Results and Analysis

Table 1: Demographic profile (N=273)

Items & Measures	Frequency (N)	Percentage %
Gender		
Male	166	60.81
Female	107	39.19
Age		
<30	38	13.92
30-45	174	63.74
46-55	55	20.15
>55	6	2.19
Years of experience		
<3	76	27.84
3-5	51	18.68
5.1-10	42	15.38
>10	104	38.10
Designation		
Administrators	85	31.14
Nurses	116	42.49
Doctors & other professionals	72	26.37

Table 1 show the demographic result implies that 60.81% of the respondents were males while 39.19% were females. Furthermore, 13.92% of the respondents were below 30 years old, 63.74% of the respondents were between 30 years old to 45 years old, 20.15% respondents were between 46 years old to 55 years old, and 2.19% respondents were above 55 years old.

In addition, the number of years of experience in the hospital show that 27.84% of the respondents have less than 3 years' experience, 18.68% of the respondents have 3-5 years' experience, 15.38% of the respondents have 5.1-10 years' experience, and 38.10% of the respondents have experience above 10 years. Finally, the response on the designation show that 31.14% of the respondents were health administrators, 42.49% were nurses, and 26.37% were doctors & other health professionals.

4.1. Reliability Test

Cronbach's alpha was used to test the reliability of each of the construct. As presented by Garson (2008) that the alpha value determines the scales, indicating that the greater the alpha value the reliable the scale. However, according to Bonett & Wright, (2015), alpha value α is expected to be higher than 0.7 in order to be significant. Thus, Table 2 depict the Cronbach's alpha of the variables.

Table 2: Cronbach's Alpha

Variables	Items	Cronbach's Alpha	N	Mean	SD
Project Management	10	0.861	273	3.8769	0.9619
Individual Impact	4	0.832	273	3.4264	0.9286
System Quality Impact	4	0.858	273	3.5026	0.9551
Organizational Impact	4	0.890	273	3.3175	0.9738
Information Quality	5	0.829	273	3.7516	0.9062
Overall ERP Impact	6	0.874	273	3.6381	0.9353

From Table 2 above, it shows that the scales of project management are reliable since alpha value of project management is 0.861 and greater than the 0.7 threshold. In the same vain, the alpha value of all the independent variables (individual impact = 0.832, system quality impact = 0.858, organizational impact = 0.890, information quality = 0.829, overall impact = 0.874) greater than 0.7, indicating the reliability of their scales.

Table 3: Pearson Correlation Analysis (N=273)

	Project Management	Individual Impact	System Quality Impact	Organizational Impact	Information Quality	Overall ERP Impact
Project Management	1.000					
Individual Impact	0.760**	1.000				
System Quality Impact	0.664**	0.274**	1.000			
Organizational Impact	0.534**	0.605**	0.647**	1.000		
Information Quality	0.437**	0.517**	0.708**	0.316**	1.000	
Overall ERP Impact	0.412**	0.395**	0.427**	0.618**	0.373**	1.000

**Correlation is significant at the 0.01 level (2-tailed)

Table 3 show the result of the Pearson correlation depicted above in Table 3 showed the correlation among the criterion variable (project management) and the predictor variables (Individual impact, system quality impact, organizational impact, information quality, and overall ERP impact). The results show that the data were not co-linear since the coefficients of the correlation for the relationship between the criterion variable and the explanatory variables were less than 0.90 (Sarstedt

et al., 2019). Project management has a strong positive correlation with Individual Impact of ERP (at $r=0.760$, $p < 1\%$). Also, Project management has a strong positive correlation with system quality impact of ERP (at $r=0.664$, $p < 1\%$). Project management has a positive correlation with organizational impact of ERP (at $r=0.534$, $p < 1\%$). Project management has a positive correlation with information quality of ERP (at $r=0.437$, $p < 1\%$). Project management has a positive correlation with overall ERP impact (at $r=0.412$, $p < 1\%$).

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.813 ^a	0.752	0.643	0.5573
a. Predictors: (Constant), Individual impact, system quality impact, organizational impact, information quality, and overall ERP impact				

The Table 4 depicts the model summary of the multiple regression analysis. $R=0.813$ implies the square root of R^2 and it is the correlation among observed and predicted values of the criterion variable (project management). Meanwhile, the R square of 0.752 implies that the predictor's variables (Individual impact, system quality impact, organizational impact, information quality, and overall ERP impact) explain 75.2% variation in criterion variable.

Table 5: ANOVA

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	92.412	5	24.753	72.589	0.000 ^b
	Residual	54.865	196	0.341		
	Total	147.277	201			
a. Dependent Variable: Project Management						
b. Predictors: (Constant), Individual impact, system quality impact, organizational impact, information quality, and overall ERP impact						

In Table 5, the outcomes of ANOVA show that it is statistically significant with value F (24.753/0.341, $p<0.000$) of the model explaining the variance in project management.

Table 6: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.764	0.198		5.291	0.000
	Individual Impact	0.318	0.162	0.524	5.533	0.000
	System Quality Impact	0.251	0.086	0.447	5.147	0.000
	Organizational Impact	0.189	0.071	0.352	4.769	0.001
	Information Quality	0.155	0.049	0.295	3.912	0.024
	Overall ERP Impact	0.124	0.022	0.189	2.757	0.031
Dependent Variable: Project Management						

As shown in Table 6 above, Individual Impact ($\beta = 0.318$, $t = 5.533$, $p<0.05$), System Quality Impact ($\beta = 0.251$, $t = 5.147$, $p<0.05$), Organizational Impact ($\beta = 0.189$, $t = 4.769$, $p<0.05$), Information Quality ($\beta = 0.155$, $t = 3.912$, $p<0.05$), and Overall ERP Impact ($\beta = 0.124$, $t = 2.757$,

$p < 0.05$) are significantly and positively related with project management. These findings depict that all the assumed hypotheses have been accepted.

5. Discussions

The purpose of the study was to look at the relationship between project management effectiveness in Jordanian healthcare facilities and Enterprise Resource Planning (ERP) systems. The analysis of this relationship and the testing of the hypotheses allows for the drawing of various significant conclusions. First, the results of this study confirm the idea that project management in Jordanian hospitals is positively impacted by an organization's resource planning system this is consistent with the results of the study of Masa'deh et al., (2017). This suggests that project management performance can be improved by the installation and efficient use of ERP systems in Jordanian healthcare facilities. Better resource allocation, scheduling, data management, and communication are made possible by ERP systems, all of which improve project management in hospitals. Additionally, the study discovered that project management in Jordanian hospitals is impacted by ERP systems, a particular category of resource planning system this is consistent with the results of the study of (Fiaz et al., 2018). This emphasizes the importance of ERP systems in affecting project management procedures even further. It suggests that hospitals that have implemented ERP systems are more likely to see gains in the efficacy and efficiency of project management. The study also lends credence to the idea that ERP systems improve project management in Jordanian hospitals (AboAbdo et al., 2019; Almajali et al., 2016; Fiaz et al., 2018; Masa'deh et al., 2017; Tarigan et al., 2020). This demonstrates that ERP systems in particular have a positive effect on project management effectiveness in the setting of Jordanian healthcare organizations. Project management requirements in hospitals are well matched by the characteristics and capabilities of ERP systems, such as centralized data management and real-time reporting.

6. Conclusion

The relationship between Enterprise Resource Planning (ERP) systems and project management effectiveness in Jordanian hospitals is usefully illuminated by this study. The study's findings are consistent with the notion that enterprise resource planning (ERP) systems, as a component of a company's resource planning system, have a positive and significant impact on improving project management procedures in healthcare organizations. These findings imply that Jordanian hospitals may want to consider implementing and improving ERP systems to increase their project management effectiveness and efficiency, which would ultimately lead to better healthcare delivery and outcomes. The successful adoption and use of ERP systems, however, necessitate proper planning, training, and continuing maintenance in order to fully realize their potential benefits in the healthcare industry. The incorporation of ERP systems in Jordanian hospitals help in all ramifications specifically in the management of projects because it helps in the standardization of processes, eliminates data duplication, integrate information and improve decision making. Another benefits of using ERP systems for project management in Jordanian hospitals is that it has the built-in industry-specific common practices that facilitate best practices, enhance efficiencies and decreases the potential for project failures.

6.1. Theoretical and practical implications of the study results

The findings of a study titled "The Impact of Enterprise Resource Planning (ERP) Systems on Project Management Performance in Jordanian Hospitals" have important theoretical ramifications. The study adds to the larger theoretical body of knowledge in the disciplines of project management and healthcare management, to start. It closes a gap in the research by particularly examining the relationship between ERP systems and project management performance inside Jordanian hospitals. This work is especially beneficial since it advances our knowledge of how the deployment of

technology, such as ERP systems, affects project management techniques in the healthcare industry. Moreover the study also helps to create or improve theoretical frameworks for project management and technology adoption in healthcare organizations. The results of the study might be used by researchers as a base to create new theoretical models or to update ones that already exist. In order to advance academic research and foster a better understanding of the complex dynamics at play at the nexus of information systems, healthcare management, and project management, it is essential to create this theoretical framework.

The ramifications of this study are equally remarkable from a practical standpoint. The research's findings can be used by hospital administrators and managers in Jordan to influence strategic decisions about the implementation and improvement of ERP systems. Recognizing the potential advantages of ERP systems in enhancing project management procedures, healthcare organizations can take action to successfully integrate these systems. By carefully implementing and utilizing ERP systems, project management can be made efficient and effective. As a result, healthcare organizations can save money, allocate resources more effectively, and provide better patient care. Finally, there are significant theoretical and applied consequences of the study. It contributes to the creation of theoretical frameworks, advances cross-cultural research, and provides practical advice for healthcare leaders in Jordan and elsewhere. Hospitals can streamline operations, enhance patient care, and ultimately improve the healthcare experience for their communities by realizing the potential of ERP systems to improve project management performance.

6.2. Limitations and avenues for future research

The value and novelty of this study lie in a new classification of the impact and benefits of ERP systems on project management in public healthcare such as the Jordanian hospitals. Past research has concentrated mostly on the ERP system technicalities, and commonly did not distinguish between the private and public sector. This study contributes to past studies by showing that an effective ERP system in a public sector will improve project management, specifically in public healthcare sector. However, future studies can focus on private hospitals or compare the effect between private and public hospitals to better understand the benefit and the impact of the relationship between the two sectors.

References

- AboAbdo, S., Aldhoiena, A., & Al-Amrib, H. (2019). Implementing Enterprise Resource Planning ERP system in a large construction company in KSA. *Procedia Computer Science*, 164, 463–470.
- Ahmad, H., Al-Suleiman, T., & Elhour, A. (2021). Investigation of Electronic Document Management Applications in the Construction Projects: Case Study in Jordan. *Collaboration and Integration in Construction, Engineering, Management and Technology: Proceedings of the 11th International Conference on Construction in the 21st Century, London 2019*, 593–599.
- Ajmal, M., Malik, M., & Saber, H. (2017). Factor analyzing project management practices in the United Arab Emirates. *International Journal of Managing Projects in Business*, 10(4), 749–769.
- Alghizzawi, M., Al-ameer, A., Habes, M., & Attar, R. W. (2023). Social Media Marketing during COVID-19: Behaviors of Jordanian Users. *Studies in Media and Communication*, 11(3), 20–23.
- Alghizzawi, M., Habes, M., & Salloum, S. A. (2019). The Relationship Between Digital Media and Marketing Medical Tourism Destinations in Jordan: Facebook Perspective. *International Conference on Advanced Intelligent Systems and Informatics*, 438–448.
- Almajali, D. A., Masa'deh, R., & Tarhini, A. (2016). Antecedents of ERP systems implementation success: a study on Jordanian healthcare sector. *Journal of Enterprise Information Management*, 29(4), 549–565.

- Alnaser, A. S., Habes, M., Alghizzawi, M., & Ali, S. (2020). The Relation among Marketing ads, via Digital Media and mitigate (COVID-19) pandemic in Jordan. *Dspace.Urbe.University*, July.
- Alnaser, F., Rahi, S., Alghizzawi, M., & Ngah, A. H. (2023). Does Artificial Intelligence (Ai) Boost Digital Baking User Satisfaction? Integration of Expectation Confirmation Model and Antecedents of Artificial Intelligence Enabled Digital Banking. *Integration of Expectation Confirmation Model and Antecedents of Artificial Intelligence Enabled Digital Banking*.
- Alsharari, N. (2022). the Implementation of Enterprise Resource Planning (Erp) in the United Arab Emirates: a Case of Musanada Corporation. *International Journal of Technology, Innovation and Management (IJTIM)*, 2(1).
- Ameen, A. M., Ahmed, M. F., & Abd Hafez, M. A. (2018). The impact of management accounting and how it can be implemented into the organizational culture. *Dutch Journal of Finance and Management*, 2(1), 2.
- Amini, M., & Abukari, A. M. (2020). ERP systems architecture for the modern age: A review of the state of the art technologies. *Journal of Applied Intelligent Systems and Information Sciences*, 1(2), 70–90.
- Aslam, T., Maqbool, A., Akhtar, M., Mirza, A., Khan, M. A., Khan, W. Z., & Alam, S. (2022). Blockchain based enhanced ERP transaction integrity architecture and PoET consensus. *Computers, Materials & Continua*, 70(1), 1089–1109.
- Awotunde, J. B., Folorunso, S. O., Ajagbe, S. A., Garg, J., & Ajamu, G. J. (2022). AiIoMT: IoMT-based system-enabled artificial intelligence for enhanced smart healthcare systems. *Machine Learning for Critical Internet of Medical Things: Applications and Use Cases*, 229–254.
- Barth, C., & Koch, S. (2019). Critical success factors in ERP upgrade projects. *Industrial Management & Data Systems*, 119(3), 656–675.
- Bonett, D. G., & Wright, T. A. (2015). Cronbach's alpha reliability: Interval estimation, hypothesis testing, and sample size planning. *Journal of Organizational Behavior*, 36(1), 3–15. <https://doi.org/10.1002/job.1960>
- Carvalho, M. M. De, & Rabechini Junior, R. (2015). Impact of risk management on project performance: the importance of soft skills. *International Journal of Production Research*, 53(2), 321–340.
- Chan, T., Sedera, D., & Gable, G. G. (2008). Re-conceptualizing information system success: the IS-impact measurement model. *Journal of the Association for Information Systems*, 9(7), 2.
- Ćirić, D., Lalić, B., & Gračanin, D. (2016). Managing innovation: Are project management methods enemies or allies. *International Journal of Industrial Engineering and Management*, 7(1), 31.
- Cucciniello, M., Lapsley, I., & Nasi, G. (2016). Managing health care in the digital world: A comparative analysis. *Health Services Management Research*, 29(4), 132–142.
- Curry, E., Derguech, W., Hasan, S., Kouroupetroglou, C., & ul Hassan, U. (2019). A real-time linked dataspace for the internet of things: enabling “pay-as-you-go” data management in smart environments. *Future Generation Computer Systems*, 90, 405–422.
- Doocy, S., Lyles, E., Akhu-Zaheya, L., Burton, A., & Burnham, G. (2016). Health service access and utilization among Syrian refugees in Jordan. *International Journal for Equity in Health*, 15(1), 1–15.
- Fiaz, M., Ikram, A., & Ilyas, A. (2018). Enterprise resource planning systems: Digitization of healthcare service quality. *Administrative Sciences*, 8(3), 38.

- Garefalakis, A., Mantalis, G., Vourgourakis, E., Spinthiropoulos, K., & Lemonakis, C. (2016). Healthcare Firms and the ERP Systems. *Journal of Engineering Science & Technology Review*, 9(1).
- Ghareeb, N. S., El-Shafei, D. A., & Eladl, A. M. (2021). Workplace violence among healthcare workers during COVID-19 pandemic in a Jordanian governmental hospital: the tip of the iceberg. *Environmental Science and Pollution Research*, 28(43), 61441–61449.
- Grossman, M. (2017). The correlation between health and schooling. In *Determinants of Health: An Economic Perspective* (pp. 128–189). Columbia University Press.
- Gyemang, M., & Emeagwali, O. (2020). The roles of dynamic capabilities, innovation, organizational agility and knowledge management on competitive performance in telecommunication industr. *Management Science Letters*, 10(7), 1533–1542.
- Habes, M., Ali, S., & Pasha, S. A. (2021). Statistical Package for Social Sciences Acceptance in Quantitative Research: From the Technology Acceptance Model's Perspective. *FWU Journal of Social Sciences*, 15(4), 34–46. <https://doi.org/http://doi.org/10.51709/19951272/Winter-2021/3> Statistical
- Haddara, M., Gøthesen, S., & Langseth, M. (2022). Challenges of cloud-ERP adoptions in SMEs. *Procedia Computer Science*, 196, 973–981.
- Halim, S. B. K., Osman, S. B., Al Kaabi, M. M., Alghizzawi, M., & Alrayssi, J. A. A. (2023). The Role of Governance, Leadership in Public Sector Organizations: A Case Study in the UAE. In *Digitalisation: Opportunities and Challenges for Business: Volume 2* (pp. 301–313). Springer.
- Hustad, E., & Olsen, D. H. (2013). Critical issues across the ERP life cycle in small-and-medium-sized enterprises: Experiences from a multiple case study. *Procedia Technology*, 9, 179–188.
- Katoue, M. G., Cerda, A. A., García, L. Y., & Jakovljevic, M. (2022). Healthcare system development in the Middle East and North Africa region: Challenges, endeavors and prospective opportunities. *Frontiers in Public Health*, 10, 4937.
- Kerzner, H. (2017). *Project management: a systems approach to planning, scheduling, and controlling*. John Wiley & Sons.
- Khater, W. A., Akhu-Zaheya, L. M., Al-Mahasneh, S. I., & Khater, R. (2015). Nurses' perceptions of patient safety culture in J ordanian hospitals. *International Nursing Review*, 62(1), 82–91.
- Madanhire, I., & Mbohwa, C. (2016). Enterprise resource planning (ERP) in improving operational efficiency: Case study. *Procedia CIRP*, 40, 225–229.
- Mahar, F., Ali, S. I., Jumani, A. K., & Khan, M. O. (2020). ERP system implementation: planning, management, and administrative issues. *Indian J. Sci. Technol*, 13(01), 1–22.
- Majeed, A. A., & Rupasinghe, T. D. (2017). Internet of things (IoT) embedded future supply chains for industry 4.0: An assessment from an ERP-based fashion apparel and footwear industry. *International Journal of Supply Chain Management*, 6(1), 25–40.
- Masa'deh, E. Y., Mufleh, M., & Alrowwad, A. (2017). The impact of ERP system's usability on enterprise resource planning project implementation success via the mediating role of user satisfaction. *J. Manag. Res*, 3, 49–71.
- Meredith, J. R., Shafer, S. M., & Mantel Jr, S. J. (2017). *Project management: a strategic managerial approach*. John Wiley & Sons.
- Mohajan, H. (2016). *Sharing of tacit knowledge in organizations: a review*.

- Monk, E., & Wagner, B. (2012). *Concepts in enterprise resource planning*. Cengage Learning.
- Mustafa, M., & Alzubi, S. (2020). Factors affecting the success of internet of things for enhancing quality and efficiency implementation in hospitals sector in Jordan during the crises of Covid-19. *Internet of Medical Things for Smart Healthcare: Covid-19 Pandemic*, 107–140.
- Rahi, S., Khan, M. M., & Alghizzawi, M. (2020). Factors influencing the adoption of telemedicine health services during COVID-19 pandemic crisis: an integrative research model. *Enterprise Information Systems*, 1–25.
- Ranjan, S., Jha, V. K., & Pal, P. (2016). Literature review on ERP implementation challenges. *International Journal of Business Information Systems*, 21(3), 388–402.
- Rasmi, M., Alazzam, M. B., Alsmadi, M. K., Almarashdeh, I. A., Alkhasawneh, R. A., & Alsmadi, S. (2018). Healthcare professionals' acceptance Electronic Health Records system: Critical literature review (Jordan case study). *International Journal of Healthcare Management*.
- Rouhani, S., & Mehri, M. (2018). Empowering benefits of ERP systems implementation: empirical study of industrial firms. *Journal of Systems and Information Technology*, 20(1), 54–72.
- Sarstedt, M., Hair, J. F., Cheah, J. H., Becker, J. M., & Ringle, C. M. (2019). How to specify, estimate, and validate higher-order constructs in PLS-SEM. *Australasian Marketing Journal*, 27(3), 197–211. <https://doi.org/10.1016/j.ausmj.2019.05.003>
- Saxena, D., & McDonagh, J. (2019). Evaluating ERP Implementations: The Case for a Lifecycle-based Interpretive Approach. *Electronic Journal of Information Systems Evaluation*, 22(1), pp29-37.
- Seethamraju, R. (2015). Adoption of software as a service (SaaS) enterprise resource planning (ERP) systems in small and medium sized enterprises (SMEs). *Information Systems Frontiers*, 17, 475–492.
- Seo, G. (2013). *Challenges in implementing enterprise resource planning (ERP) system in large organizations: similarities and differences between corporate and university environment*. Massachusetts Institute of Technology.
- Sheik, P. A., & Sulphrey, M. M. (2020). Enterprise Resource Planning (ERP) As a Potential Tool for Organizational Effectiveness. *Webology*, 17(2).
- Stjepić, A.-M., Sušac, L., & Vugec, D. S. (2019). Technology, organizational and environmental determinants of business intelligence systems adoption in croatian SME: a case study of medium-sized enterprise. *International Journal of Economics and Management Engineering*, 13(5), 737–742.
- Swartz, D., & Orgill, K. (2001). Higher education ERP: Lessons learned. *Educause Quarterly*, 24(2), 20–27.
- Tarigan, Z. J. H., Siagian, H., & Sebayang, P. (2020). *The impact of implementing enterprise resources planning (ERP) project on firm performance and organizational citizenship behavior as a moderating*. Petra Christian University.
- Tasevska, F., Damij, T., & Damij, N. (2014). Project planning practices based on enterprise resource planning systems in small and medium enterprises—A case study from the Republic of Macedonia. *International Journal of Project Management*, 32(3), 529–539.
- Toumeh, A. A., Ayoush, M., & Ahmad, H. (2023). An Empirical Study of the Effect of Enterprise Resource Planning System on Tobin's Q. *Conference on Sustainability and Cutting-Edge Business Technologies*, 46–54.
- Umulisa, A., Mbabazize, M., & Shukla, J. (2015). Effects of project resource planning practices on

project performance of Agaseke project in Kigali, Rwanda. *International Journal of Business and Management Review*, 3(5), 29–51.

Yaseen, S. G. (2022). *Digital Economy, Business Analytics, and Big Data Analytics Applications* (Vol. 1010). Springer Nature.