

## The Impact of Knowledge Management Processes on Sustainable Performance: The Mediating Role of Enterprise Resource Planning System

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### Abstract

This study identified the effect of knowledge management processes on sustainable performance, testing the expected role of the ERP system as an intermediate variable in enhancing the impact of knowledge management processes on sustainable performance. Few studies have empirically examined the three variables this encouraging the researcher to fill the research knowledge gap. A literature review is a suitable way to review existing literature while facilitating theory development and uncovering areas where further research is needed. Data were collected through questionnaire from the Jordanian Pharmaceutical Industrial Companies in Amman which are (6) companies, used a comprehensive survey due to the limitations of the population which consisted of (81) administrators at the top and middle management levels, using SPSS statistics version 25 for testing the research model and hypotheses. The results reveal apposite medium effect of knowledge management process on sustainable performance, the findings also indicate the medium level of effect of knowledge management process on ERPs. The results also confirm that there is higher level of effect of ERP on the effect of knowledge management process on sustainable performance. This mean that all hypothesized relation was positive.

**Keywords:** Knowledge Management Processes; Sustainable Performance; ERPS.

### 1. Introduction

Firms are under increasing pressure from outside forces to reduce environmental problems resulting from manufacturing operations while coping with intense competition due to globalization and the growth of technology (Ikram et al., 2021; Singh et al., 2022). An extensive range of business advantages that accrue to companies who practice sustainability have been identified by the prior study, including improved reputation, new marketing opportunities, expanded company capabilities, increased financial value, and improved new product performance (Du et al., 2022; Papadas et al., 2017). As a result, businesses are putting more effort into improving their sustainability, which helps them meet their economic goals as well as their environmental and societal duties (Chatterjee et al., 2022). The knowledge-based economy, pushing organizations to identify, and operationalize the most appropriate solutions that enable them to achieve sustainable performance, Knowledge is a strategic asset in achieving a long-term competitive advantage that contributes to achieving sustainable performance, under these circumstances it appears the need to looking for new ways to achieve sustainable performance (Popa et al., 2019). Companies need to be adjusted, and strongly substantiated, considering the required knowledge internally and externally, managing

sustainable performance is one of the phenomena faced by the current business environment (Gray, 2020). Using the ERPs help the enterprises or firms to do that by improve the performance of its operations, making it more reliable, quality, and less expensive, increasing quick response, and ability to achieve goals, when using the ERPs information from all activities inside the organization becomes synchronized, and available in real-time easily and accurately to achieve sustainable performance (Shaikh et al., 2020). ERPs has many benefits for different organizations such as cost reduction, productivity improvement, better performance management, performance improvement, build business flexibility for current change, IT cost reduction, and improve decisions making and planning (Hansen et al., 2022). The data collected through ERP systems should be managed and transformed into meaningful knowledge, so that the organizations can make use of the data to gain benefits, which can enhance the understanding of the business functions and increase the predictability, sustainability (Bandara et al., 2023).

## **2. Knowledge management process**

Many enterprises developed, applied the concept of knowledge economy, to improve economic practices, which considered as one of the most important productive resources businesses needs to achieve growth, sustainability, profitability, we need an organized work based on (quality of knowledge, knowledge productivity) for the benefits of individuals and companies (Fernandez & Sabherwal, 2017).

Knowledge is an inevitable catalyst for sustainable competitive advantage and organisational success in the face of abrupt variations in business settings, likewise, KM contributes towards their performance through research and developmental activities (Masa'deh et al., 2017). It seems that the role of knowledge management has become one of the main issues of wide interest in most of the literature due to its importance in achieving organizational competitive advantage, Knowledge management leads to effective and superior organizational performance, through the interaction between the knowledge management processes, , the relationship between knowledge and process of knowledge management (Generation, appropriation, sharing) must lead organizations , individuals to be able to use this knowledge in some way in the context of their work in the organization (Zaim et al., 2019).

The success of organizations business is linked to their ability in manage their knowledge, and to adapt to the ever-changing environment, firms can innovate, create organizational actions (Jalil et al., 2018). Using Intellectual capital is most important, valuable resource, it is closely related to knowledge management, refers to organizations all knowledge resources, which are located inside or outside the organization, four types of intellectual capital can be distinguished: (human capital, knowledge, skills, and capabilities) possessed by individuals, organizational capital, or institutional knowledge, codified expertise residing in (databases, directories, culture, structures, processes, and leaders), knowledge embedded in relationships, and interactions between individuals (Fernandez & Sabherwal, 2017).

### **2.1 Knowledge sharing**

Knowledge management can't be useful unless using it efficiently, it's not enough to acquire and store, it must be transferred to application, if the knowledge is not reflected in the implementation, it will be missed opportunity, the success of organization in knowledge management program depends on the amount of knowledge that is shared between the

individuals, knowledge sharing is a process that is communicated explicitly or implicitly to other individuals in various ways, sharing knowledge means voluntary transfer ;so the recipient of the knowledge understands it well to be enough to act, knowledge sharing take across individuals, groups ,department, and organization (Becerra et al., 2015). Knowledge sharing is the interaction of social activity, and communication between individuals, confirms that knowledge sharing is inherent knowledge management, knowledge management includes developing a culture of learning where members collect, exchange knowledge systematically with others within organization, therefore management must facilitate communication exchange, and learning among employees (Shawabkeh, 2017). knowledge sharing can be measured by using two dimensions (knowledge donation, and knowledge gathering), many studies mostly use the two dimensions, many organizations concluded that the effective knowledge sharing is an important way to improve competencies core, gain a competitive advantage (Pebi et al., 2020).

## **2.2 Knowledge discovery**

Knowledge discovery is related to developing new tacit ,or explicit knowledge from data and information of previous knowledge, the discovery of new explicit knowledge depends on collection, while tacit knowledge depends on socialization, through the connection, integration, and organization of multiple streams of explicit knowledge, new explicit knowledge is created ;either incrementally or radically, explicit knowledge, data, information is reconfigured, or reclassified ,and re-contextualized to produce new explicit knowledge, socialization is the assembly of tacit knowledge across individuals through joint activities rather than through written ,or verbal instructions (Becerra et al., 2015).

## **2.3 Knowledge storage**

Generating and acquiring new knowledge Just is not sufficient for decision-making purposes, there is a need for mechanisms to store ,and retrieve when needed, knowledge storage means “storing existing, acquired and created knowledge in properly indexed ,and interconnected knowledge repositories” process and organization of knowledge management Performance knowledge storage refers to the continued preservation of knowledge and managing it in organizational memory ,and knowledge bases ,this requires continuous updating of organizational memory, and improving communication tools, and this process also includes all activities that allow knowledge to be stored, organized, updated and retrieved, making it more accessible to users, by combining , merging knowledge, and reducing repetition, it is possible to improve Efficiency Knowledge storage processes play an important role in building organizational memory, which can be determined by the amount of experience, ideas, knowledge, and skills acquired over the years (Lin, 2015).

## **2.4 Knowledge application and use**

knowledge application is an essential goal for organization's success to managing knowledge , achieving the purpose of knowledge by integrating knowledge from its internal and external sources to achieving organization goals, the process of applying knowledge enables organizations to use , benefit from in different ways to improve their operations, developing new products, generate new knowledge assets, improve their response ,and ability to technological changes, taking decisions, tasks perform, and identify sources of competitive advantage by providing knowledge integration methods to solve organizational problems, not

only to acquiring, storing, and sharing them but rather to know how they are used to guide routine decisions and actions (Fernandez & Sabherwal, 2017). This process does not include just the transfer or exchange of knowledge between individuals but transfer directives and applicable recommendations, the knowledge use two processes (routines, and directives) that do not involve the actual transfer or exchange of knowledge between the involved individuals ,but only the transfer of applicable recommendations in a specific context In short, the aim of knowledge is its application, this is the stage where the knowledge user can synthesize their knowledge, put it into practice by compiling published knowledge documents (Mehdi et al., 2018).

### **3. Sustainability**

Companies must respond quickly to adapt to challenges they face in a dynamic, highly changing environment to ensure their survival, and success in market using many new unprecedented strategies, methodologies that achieve distinction from others, adapted to customer needs, and provide high-quality services, therefore, the requirements for sustainable operations have increased dramatically (Daud & Ashaari, 2018).

Corporate sustainability can be a profitable strategic behavior for companies that add value, but managing sustainability is not a quick and easy process. You need expertise who can develop, implement sustainable initiatives lead to sustainable results (Gupta et al., 2020). Companies are becoming more oriented toward sustainability due to the cumulative effect of social, and environmental issues on their success, this generally depends on (economic, environmental, and social) factors, the economic dimension reflects how sustainable management affects costs, revenues, and profitability, an environmental view point, the orientation focuses on how to use (natural) resources, social perspective, it is important that people in the company, consumers, suppliers, and other stakeholders are treated in better way (Aiado et al., 2018).

Sustainable Enterprise development can be viewed as process of continuous improvement in environmental, economic, and social performance; Maintaining business operations means continuous development, without significant degradation of resources within the value-adding transformation, there are appropriate KPIs to make corporate sustainability performance assessable, manageable, measured, monitored, modified to achieve sustainable development, and operations (Daud & Ashaari, 2018). Knowledge management can contribute to economies of scale and scope by improving organization's ability to utilize knowledge about products, customers, and companies, many organizations have resorted to sharing knowledge with other companies to leverage their expertise in product design, reduce development costs, design serious products, and enhance opportunities for rapid response to new markets (Fernandez & Sabherwal, 2017).

As a result of globalization, technological complexity, increased competition and resource scarcity, organizations are changing and adopting a more open, cooperative approach to building their competitive advantage (Barrett et al., 2021). Competitive advantage refers to a firm's capability to achieve greater performance than the competitors in a highly dynamic environment, firms need experience-based adaption to create competitive advantage in a complex market environment changes rapidly ,and competitive advantages are characteristically unsustainable, Sustainable competitive advantage refers to value creation in which a firm pursues high innovation by driving market competition (Caiado et al., 2017).

Reducing production costs, organizations following a set of strategies, including the economies of scope strategy, organizations resort to diversification in their products by increasing the assortment of commodities, product types to take advantage of the same fixed cost, producing a variety of goods is less expensive than producing a group of less diverse goods, or producing each commodity independently, economies of scale can arise through the sharing, or joint use of production inputs, thus increasing unit costs of production (Mherat, 2016). The second strategy used by different enterprises is the economy of scale, used to reduce their average production costs by increasing the volume of production, which leads to a decrease in marginal cost as a result of producing additional units of the same product (products or services), there are two types of economies of scale, internal economies of scale through increased production costs are reduced, or external economies of scale by benefiting an entire industry from expansion, such as the creation of an efficient transportation system, or a skilled workforce, or sharing in technology (Amar et al., 2018).

#### **4. ERPs**

ERPs is a complex software system that helps companies automate, optimally manage all their operations, and all core business, this system helps the accuracy and speed of data flow between companies' business processes, provide a single source of truth that can link all company financial data, supply chains or business processes, reporting and manufacturing, importing and exporting information through a single platform, companies around the world seeking sustainable competitive advantage, the need to adapt to challenges obliges companies around the world to build systems that sew enterprise resources to enhance their operational efficiency, and competitiveness (Karia et al., 2019).

The literature emphasized the importance of enterprise resource planning (ERPs), especially the role of enterprise resource planning as a program to integrate, control all departments through an integrated system, works to connect all levels of management along with their departments such as (human resources, production department, finance department, quality control, and logistics through an integrated system) (Hassan et al., 2018). ERPs is an enterprise-wide information system that brings together and controls all business processes within an enterprise on a single computer system to meet the needs of the enterprise. ERPs systems as information technology resources seek to reliably integrate synchronization, and strategically centralize organizational data along their value chain (Odhiambo et al., 2020).

The ERP system is characterized by (unity, reliability, and accuracy of information), which are integrated into one integrated, comprehensive system across the enterprise as a whole, or at the levels of its business units, this leads to the removal of all organizational and technical barriers, and obstacles that prevent the sharing of information on a large scale between business units and specialized organizational units, which is reflected in increasing operational processes, profitability and increasing productivity for organizations, to achieve success in ERPs implementation, the enterprise needs an ERPs team (Omieno, 2020). Good ERP team must come from a mixture of internal staff and consultants, it is necessary to bring together staff from different departments such as (information technology, finance, human resources and production) in one ERP team (Ebrahim et al., 2017).

### **5. Methodology**

#### **5.1 Research questions and framework**

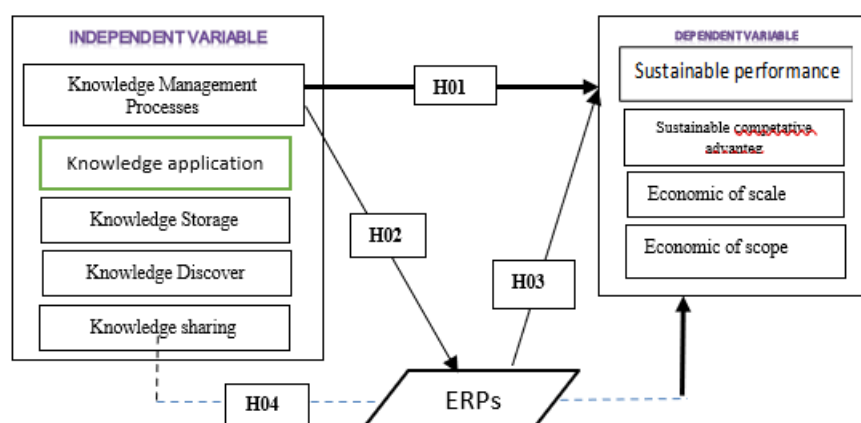
Many organizations have found that enhancing, developing their sustainable performance requires a deep understanding of the role, importance of knowledge, manage it in a way that enhances their ability to adapt, and compete (Popa et al., 2019). KMP enables organizations to respond to changes, improve their operations sustainability, competitive advantage, to brings shareholder reliability, and customer trust (Albort-Morant et al., 2018). Knowledge management (KM) is a vital factor in businesses that needs to be managed efficiently for reaching organisational success in the long term, Scholars have noted that effective knowledge management stimulates competitive advantages for a company, notes that all administrative personnel should actively participate in different levels of knowledge management processes, which are mainly knowledge generation, sharing, and exploiting. In addition, some researchers claim that intangible knowledge management has a comparatively greater effect on sustainable performance (Demir et al., 2023). This research assumes to fill the identified knowledge gaps of KMs in Jordanian pharmaceutical industrial companies and in doing so, makes numerous theoretical shares to the existing literature by assessing the interrelationship between KM processes (creation, acquisition, storage, sharing, utilisation), and organisational sustainable performance, the study further ascertains whether ERPs intervenes the association among KM processes and organisational sustainable performance, literature that stresses knowledge as a critical organisational resource leading to improved organisational sustainable performance, drawing on the identified loopholes in the existing research, the following questions are proposed for the study;

Q1: Does knowledge management process have an impact on sustainable performance through ERPs in the Jordanian pharmaceutical industrial companies.

Q2: what is the level of importance of knowledge management processes, sustainable performance, and (ERP) system in Jordanian pharmaceutical companies?

Q3: Does Jordanian pharmaceutical industrial companies using ERPs in their works.

## 5.2 Model development



**Figure 1: Research framework**

Sources: Independent variable: (Becerra et al.2015; Chen et al., 2010; Majdy et al.,2018)

Dependent variable: (Caiado et al., 2017; Al-Omari et al., 2017)

Mediating variable: (Mherat, 2016).

This framework also formulates our hypothesis:

- (H01): There is no statistically significant impact at the level of significance ( $P \leq 0.050$ ) of knowledge management process by its dimensions (knowledge discovery, knowledge storage, knowledge sharing, and knowledge application) on sustainable performance by its dimensions (Economic of scale, Economic of scope, Sustainable competitive advantage) in the Jordanian pharmaceutical Industrial companies.
- (H02): There is no statistically significant impact at the level of significance ( $P \leq 0.050$ ) of knowledge management process by its combined dimensions on ERPs in the Jordanian pharmaceutical Industrial companies.
- (H03): There is no statistically significant impact at the level of significance ( $P \leq 0.050$ ) of ERPs on Sustainable performance by its combined dimensions in the Jordanian pharmaceutical Industrial companies.
- (H04): There is no statistically significant impact at the level of significance ( $P \leq 0.050$ ) of knowledge management process by its combined dimensions on process on sustainable performance by its combined dimension with the presence of ERPs as a mediating variable in the Jordanian pharmaceutical Industrial companies.

### 5.3 Survey instrument, sample description, and data collection

The study population consisted of Jordanian pharmaceutical companies in Amman registered with the Jordanian Federation of Pharmaceutical Producers, agreed to participate in the study, namely (Al-Ram, Taqadom, Al-Jadeed, Nahr Al-Jordan, and Dar. - Al-Dawaa, Al-Hikma Al-Arabi (Jordanian Federation of Pharmaceutical Producers 2020).

The comprehensive survey method was used to distribute (85) questionnaires to the study sample, which consisted of all employees at the upper and middle administrative levels (81) questionnaires were retrieved, (4) were not valid for analysis. The percentage of retrieved questionnaires accepted for statistical analysis was (95%) of the total, this percentage is statically acceptable (Al-Najjar et al., 2018). Primary data was collected using a questionnaire technique, and respondents rated their degree of agreement with the statements in the questionnaire using a five-point Likert scale (strongly agree = 5, agree = 4, neutral = 3, disagree = 2, and strongly disagree = 1). The basic characteristics of the sample are shown in the following table.

**Table 1: Characteristics of the study sample**

Percentage	Frequency	Category	Variable
67.5	55	Male	Gender
32.5	26	Female	
16.9	15	Less or 30 years	Age
31.2	25	31 - 40 years	
35.1	27	41 - 50 year	
15.6	14	51year and above	
57.1	44	Upper management	Career level
42.9	37	Middle management	

9.1	9	Diploma	qualification
72.7	56	Bachelor's degree	
18.2	16	Highly study	
15.6	12	Less or 5 years	work experience
19.5	17	6 - 10 year	
24.7	21	11 -15 year	
40.3	31	16 and above	
100	81	Total	

There are 81 respondents in the entire sample, (32.5)% are female, (67.5) % are Male. Most respondents have Bachelor's degree education (72.7%). On average, the respondents were middle-aged (M=35.1)% . Most respondents 16 years and above experience (40.3)%, the majority of respondents at upper management (57.1%). , which gives a positive indication of their ability to answer the questionnaire questions, and contributes to achieving the study objectives.

## 6. Data analysis

### 6.1 Validity, reliability and stability of the study tool

Verifying the validity, stability and reliability of the study tool, it was presented to a number of academics and specialists in the field of knowledge management to express their opinion, based on the suggestions and observations provided, the required amendments were made, which included some words of the paragraph according to structure, language and content. The results of Cronbach's alpha coefficient analysis showed the stability, and reliability of the study tool, as the result of the stability coefficient value showed in table 2 (Hire et al., 2018).

**Table 2: Coherence coefficient values for the study instrument paragraphs**

The value of coefficient Cronbach Alpha	number of paragraphs	Study dimensions
.808	5	knowledge Discover
.859	5	knowledge sharing
.841	5	Knowledge application
.838	5	Knowledge storage
.651	5	Economic of scope
.711	5	Economic of scale
.849	5	Sustainable competitive advantage
.813	14	Enterprise resource system

Table 2 indicate that all the values of the Cronbach alpha consistency coefficient for the sub-variables paragraphs of the independent variable (knowledge management process) ranged between (.808 - .859), the sub-variables paragraphs of the dependent variable (sustainable performance) ranged from (.651 to .849), and the paragraphs of the mediating variable (ERPs) reach (.813), it is noted that all the values have exceeded the minimum allowable (60%). This is an indication of the existence of internal consistency between the study tool paragraphs, its stability, and reliability for statistical analysis (Hire et al., 2018).



To test the suitability of the study model, the multiple linear correlations were tested, and Pearson's correlation coefficients are used to reveal the problem of multiple linear correlations between the independent study variables, table 3, indicate that the values of Pearson's correlation coefficients for the sub-variables of the independent variable, dependent variable, and the mediator variable ranged between (.428\*\* - .728\*\*), the highest value of the correlation coefficient came between: (knowledge sharing, and knowledge storage) variables, this indicates that there is no high correlation between the variables, there is no problem in the linear correlation, all the values of Pearson's correlation coefficients comes less than (0.80) (Gujarati, 218).

**Table 3: Correlation matrix of independent variables**

	KD	KS	SHARING	KA	ERP	SP
KD	1					
KS	.622**	1				
SHARING	.608**	.728**	1			
KA	.553**	.599**	.707**	1		
ERP	.284*	.428**	.530**	.630**	1	
SP	.336**	.483**	.581**	.671**	.762**	1

## 6.2 Descriptive statistics for Main Variables

To identify the attitudes of the study sample members about the main variables of the study model, arithmetic averages, standard deviations, Skewness, Kurtosis, and relative importance, were used for each variable, the results in table 4.

**Table 4: Arithmetic averages and standard deviations of the study sample**

		Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
KMP	81	1.85	4.55	3.4071	.60332	-.405-	.274	-.117-	.541
SP	81	2.53	4.73	3.7045	.47068	-.311-	.274	-.291-	.541
ERP	81	3.00	4.67	3.7386	.40849	.013	.274	-.635-	.541
Valid N (list wise)	81								

Table 4 indicates that the level of the relative importance of the dependent variable (SP) came at first place, while second place came (ERPs) at high relative importance, third place came the independent variable (KMP), all the Skewness coefficient, and Kurtosis test values in the above table came between (3  $\pm$ ) which indicated that the data follow the normal distribution (Hire et al., 2018).

## 6.3 Descriptive statistics for sub-variables

To identify the attitudes of the study sample members about the sub-variables of the model, arithmetic averages, and standard deviations were used for each variable and the results as in table 5.

**Table 5: Arithmetic averages and standard deviations of the study sample**

Descriptive Statistics									
	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Kd	81	2.00	4.80	3.4597	.61905	.046	.274	-.075	.541
KS	81	1.40	4.60	3.3169	.63937	-.533	.274	.712	.541
SHARING	81	1.00	4.60	3.2026	.80164	-.628	.274	.247	.541
KA	81	1.40	5.00	3.6494	.76099	-.582	.274	.165	.541
CA	81	2.00	5.00	3.8225	.68577	-.155	.274	-.397	.541
ESc	81	2.40	5.00	3.6987	.50013	-.184	.274	.212	.541
ECS	81	2.80	4.80	3.5922	.46390	.100	.274	-.448	.541

Table 5 indicate that the level of relative importance is high for (CA) with arithmetic mean (3.822) in the first place, while the sub-variable (ESc) came in the second place with arithmetic mean (3.698) with relative importance. The (ECs) with medium relative importance, with arithmetic mean (3.592), the sub-variable (KA) in the first place with a mean (3.649) with medium relative importance, a standard deviation (.670), the sub-variables (KD), (KS) came respectively with medium relative importance, with arithmetic mean (3.45), (3.316) respectively, the last rank of the sub-variable (K Sharing) with arithmetic mean (3.31), and with medium relative importance, all the Skewness coefficient and Kurtosis test values in the above table came between  $(3 \pm)$  which indicated that the data follow the normal distribution (Hire et al., 2018). All values were average in terms of relative importance, this is a clear indicator of the weakness's interest of pharmaceutical manufacturing companies in these variables, which can be attributed to low levels of awareness of these variables or because they are newly emerging with.

#### 6.4 The hypothesis testing

Some tests were carried out to ensure the suitability of data to the assumptions of multiple regression analysis, as below table 6 : It was confirmed that there was no high correlation between the independent variables (multi-collinearity) by using the coefficient of variance inflation test (VIF) the coefficient of variance inflation does not exceed the value (10), the permissible variance test (Tolerance) for each variables test value is greater than (0.05) as it in table 6 (Hire et al., 2018).

**Table 6: Results of the (multi- collinearity) analysis**

Model	Collinearity Statistics
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		Tolerance	VIF
1	(Constant)		
	KC	.527	1.896
	KS	.412	2.424
	SHARING	.335	2.988
	KA	.378	2.647
	ERP	.570	1.753

### 6.5 The Hypothesis Testing

(H01): There is no statistically significant impact at the level of significance ( $P \leq 0.050$ ) of knowledge management process by its dimensions (knowledge discovery, knowledge storage, knowledge sharing, and knowledge application) on sustainable performance by its dimensions (Economic of scale, Economic of scope, Sustainable competitive advantage) in the Jordanian pharmaceutical Industrial companies.

**Table 7: Results of the simple linear regression**

Coefficients					ANOVA			Model Summary		variable
Sig t*		Standard error	B	Statemen t	Sig F*	D F	F	R <sup>2</sup>	R	
.000	6.821	.071	.619	KM	.000	1	46.525	.383	.619	SP

Table 7 shows the results of the statistical test represented by knowledge management processes with its dimensions on sustainable performance with its dimensions, from (Model Summary) notes that the value of the correlation coefficient ( $R = .619$ ), the value of coefficient determination for KMP ( $R^2 = .383$ ), which means that knowledge management process explained (38.3%) of the variance in sustainable performance with its dimensions, this indicates medium positive explanatory power.

Analysis of variance (ANOVA) showed that calculated value ( $F = 46.525$ ) at the level of significance ( $\text{Sig } F = 0.000$ ), this confirms the significance of the regression at the level of  $P \leq (0.050)$ , at ( $DF = 4$ ). Table 7 indicate that the coefficients value of ( $\beta$ ) for individual relationships between both variable (dependent, independent)  $= (.619)$ , the value of ( $t$ )  $= (6.821)$  at the significance level ( $\text{Sig } t = .000$ ), which indicates that the effect of this dimension is significant. Therefore, we can't accept the first main null hypothesis, and accept the alternative one that says: "There is a statistically significant effect at the level of significance ( $p \leq 0.050$ ) for knowledge management processes in its dimensions (knowledge discovery, knowledge storage, knowledge sharing, and knowledge applying) on the sustainable performance by its dimensions (Economic of scale, Economic of scope, Sustainable competitive advantage) in the Jordanian Pharmaceutical Industrial companies.

(H02): There is no statistically significant impact at the level of significance ( $P \leq 0.050$ ) of knowledge management process by its combined dimensions on ERPs in the Jordanian pharmaceutical Industrial companies.

**Table 8: Results of the simple linear regression**

Coefficients					ANOVA			Model Summary		variable
Sig t*	T	Standard error	B	Statement	Sig F*	DF	F	R <sup>2</sup>	R <sup>a</sup>	
0.000	5.872	.224	.561	KM	.000 <sup>b</sup>	1	34.478	.315	.561	ERPs

Table 8 shows the results of the statistical test of this hypothesis represented by knowledge management processes by its combined dimensions, on the mediator variable ERPs, from the (Model Summary) notes that the value of the correlation coefficient ( $R = .561$ ), the value of coefficient determination for the KMP ( $R^2 = .315$ ), which means that knowledge management explained (31.5%) of the variance in ERPs, this indicates medium positive explanatory power.

The analysis of variance (ANOVA) showed that the calculated ( $F=34.478$ ) at the level of significance ( $\text{Sig. } F=0.000^b$ ), this confirms the significance of the regression at the level of  $P \leq (0.050)$ , at ( $DF = 1$ ). Table 8 indicates that coefficients value of ( $\beta$ ) for individual relationships between both variables (dependent, mediator) is (.561), the value of ( $t= 5.872$ ) at the significance level ( $\text{Sig. } t=.000$ ), which indicates that the effect of this dimension is significant. Therefore, we can't accept the second main null hypothesis and accept the alternative one that says: "There is a statistically significant effect at the level of significance ( $p \leq 0.050$ ) for the knowledge management processes in its combined dimensions on the ERPs in the Jordanian Pharmaceutical Industrial companies.

(H03): There is no statistically significant impact at the level of significance ( $P \leq 0.050$ ) of ERPs on Sustainable performance by its combined dimensions in the Jordanian pharmaceutical Industrial companies.

**Table 9: Results of the simple linear regression**

Coefficients					ANOVA			Model Summary		variable
Sig t*	T	Standard error	B	Statement	Sig F*	DF	F	R <sup>2</sup>	R <sup>a</sup>	
0.000	10.184	.086	.762	ERPs	.000 <sup>b</sup>	1	103.70	.580	.762	SP

Table 9 shows the results of the statistical test of this hypothesis, represented by the mediator variable ERPs, on SP by its combined dimensions, from (Model Summary) notes that the value of the correlation coefficient ( $R = .762$ ), the value of the coefficient of determination for the ERPs ( $R^2 = .580$ ), which means that ERPs explained (58.0%) of the variance in SP by its combined dimensions, this indicates a Strong positive explanatory power that reflects the strength of the model.

The analysis of variance (ANOVA) showed that the calculated ( $F=103.705$ ) at the level of significance (Sig.  $F=0.000b$ ), this confirms the significance of the regression at the level of  $P \leq (0.050)$ , at ( $DF= 1$ ). Table 9 indicates that the coefficients value of ( $\beta$ ) for individual relationships between both variables (dependent, mediating) is (.762), the value of ( $t=10.184$ ) at the significance level (Sig. $t=.000$ ), which indicates that the effect of this dimension is significant, we can't accept the third main null hypothesis, and accept the alternative hypothesis that says: "There is a statistically significant effect at the level of significance ( $p \leq 0.050$ ) for the ERPs on SP in its combined dimensions in the Jordanian Pharmaceutical Industrial companies.

(H04): There is no statistically significant impact at the level of significance ( $P \leq 0.050$ ) of knowledge management process by its combined dimensions on process on sustainable performance by its combined dimension with the presence of ERPs as a mediating variable in the Jordanian pharmaceutical Industrial companies.

To test this hypothesis, a path analysis in the Amos (SEM) program which is supported by the statistical package program (SPSS) to verify the presence of direct and indirect impact of the knowledge management processes in its combined dimension in achieving sustainable performance in the presence of the enterprise resource planning system in the Jordanian pharmaceutical companies.

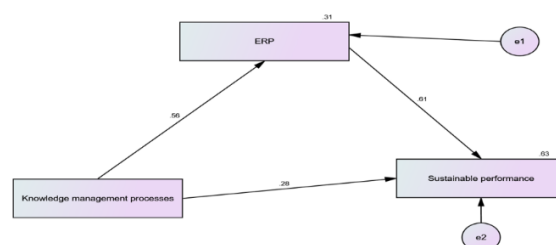
The SEM technique was used through Amos software to analyze the mediation of ERPs in the relationship between KMP and SP, where it is clear that all paths were statistically significant as all P-values were less than (0.05), and the P-value was (0.000) meaning that there was a statistically significant mediation of ERPs in the effect of KMP on SP. Figure 2, figure 3.

The mediation type was partly due to the presence of a strong direct effect of KMP on SP and based on the above results, we reject the null hypothesis and accept the alternative say; There is a partial statistically significant impact at the level of significance ( $P \leq 0.050$ ) of knowledge management process by its combined dimensions in achieving the sustainable performance by its combined dimensions through ERPs in the Jordanian Pharmaceutical Industrial Companies.

mediator is significantly different from zero.

Input:		Test statistic:	Std. Error:	p-value:
a	0.380	Sobel test:	4.57708593	0.05786651
b	0.697	Aroian test:	4.55097161	0.05819856
s <sub>a</sub>	0.064	Goodman test:	4.60365502	0.05753255
s <sub>b</sub>	0.097	Reset all	Calculate	

**Figure 2: Mediation analysis (Sobel test)**



**Figure 3: Standardized path model**

## 7. Discussion, Conclusions and Findings

The results of the descriptive analysis of the main study variables indicated a high level of interest in the dependent variable (SP), this result is consistent with the results of studies (Noorliza, 2017; Praton et al., 2019; Caiado et al., 2017; Mydland et al., 201; Usop et al., 2019), these results indicate that Jordanian pharmaceutical companies adopt sustainable performance, as a strategic approach, to develop their business, create value, achieve, gain, economic benefits, and maximize (results, economic effects, profitability, and realization of benefits for various stakeholders), reaching the expectations of customers, suppliers and the surrounding community .

the mediator ERP variable has a high relative importance, this consistent with the results of studies (Aremu et al., 2018; Ghani et al., 2019; Karia et al., 2019; Shafi et al., 2019). Jordanian pharmaceutical Industrial companies show great interest in using ERPs because they are fully convinced of the importance of comprehensive electronic systems in facilitating the process of transferring information between different administrative levels within organization these companies, which facilitates their movement toward decision-making, at an accurate and timely manner, they promote orientations toward planning for the long-term future of their companies.

Independent variable KMP was medium in terms of relative importance, this result is consistent with these studies (Zaim et al., 2019; Than et al., 2019; Mahdi et al., 2018; Jaleel et al., 2018; Abualoush et al., 2018; Latilla et al., 2018; Wulandari et al., 2018). Jordanian pharmaceutical Industrial companies showing medium interest in KMP, may be to the absence of cognitive strategies, the low level of awareness of the concept of knowledge, its effects, its use, and the importance of the role of economic knowledge in promoting sustainability issues.

There are statistically significant effects of knowledge management processes in their dimensions in ERPs, the results indicated that KMP explained (31,5) of the variance in ERPs, so we conclude that there is a relative weakness. There are statistically significant effects of ERP systems on sustainable performance. The results of the analysis indicated that ERPs explained (58, 0) % of the variance in SP, concluded from this that the effect on SP was moderate. This illustrates the importance of ERPs in achieving SP.

Finally, there are statistically significant effects of knowledge management processes in their dimensions of sustainable performance through the enterprise resource planning systems. The results of the analysis showed a direct and partial effect of knowledge management processes in achieving sustainable performance in the presence of the ERPs, which indicates that pharmaceutical companies pay some attention to the KMP that will lead to impact on enterprise resource planning systems. there is a direct impact on ERPs in achieving sustainable performance. As a result, pharmaceutical companies pay more attention to ERP systems and practices, and this will be reflected in achieving the sustainable performance of their business and their various resources.

Based on the previous results, the study recommended:

- I. Jordanian pharmaceutical Industrial companies should be more awareness of knowledge management processes, linking them to organizational strategies, goals, and performance in the short and long term.

- II. Jordanian pharmaceutical Industrial companies must be focusing on specific strategies based on market orientation, strengthening the creative behavior, leadership, and innovation of the employees at various administrative and organizational levels, which guarantees them achieving sustainable performance, more serious in continuously working to develop ERP systems,
- III. Jordanian pharmaceutical Industrial companies should take the advantage of digital evolution, high tech, and high-speed Internet systems, to enhance opportunities for information and knowledge exchange (explicit and implicit), between individuals in these companies.
- IV. Conducted more studies by the researchers, and those who are interested in Knowledge management and sustainable performance issues, using other variables that were not addressed in this study, or conducted in other workplaces or different sectors.

The results of this study must be viewed very carefully, with the need to take into account some limitations. Whether it is related to the study community, which is a very homogeneous professional community, maybe it is difficult to accurately describe, in addition to some limitations of this type of applied research and what is related to methodology. All required measurements of error and fit described in the relevant literature applied in this research have been made, and we can never be confident enough in the strength of conclusions and in minimizing errors and random effects.

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