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Impact of knowledge management processes on business performance: Evidence from Kuwait

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The purpose of this research study is to investigate the relationship between knowledge management (KM) processes and the level of business performance of organizations in Kuwait. The research utilized a survey that was administered to 500 employees of 139 private and government companies in Kuwait. Tests of validity and reliability confirmed the use of the survey instrument whereas factor analysis revealed 4 main factors whose impact on performance was assessed. The research results revealed that all 4 KM processes examined (i.e., knowledge generation and development, codification and storage, transfer and sharing, and use and evaluation) have a positive and significant impact on perceived business performance. Additionally, the research revealed that KM processes have the highest impact on innovation performance. The limitation of this study is mainly related to the limited geographical scope of the research, because the survey covered only companies from Kuwait. The originality of the research comes from geographical area covered. Virtually, no empirical research has been undertaken in area of knowledge management in Kuwait, as an oil-dependent country.

1 | INTRODUCTION

In today's knowledge economy, competition is intensifying to the point where the concept of sustainable competitive advantage may be replaced with transient competitive advantage, which represents a set of time-bound competitive advantages. For today's companies to stay ahead, they need to start new strategic initiatives on a continuous basis, building and exploiting many transient competitive advantages at once. These advantages are by their nature temporary, but they can keep companies in the lead in the long run when they are intelligently created as a portfolio (McGrath, 2013). The modern competitive situation looks very much like the famous Red Queen's race, where "it takes all the running one can do, to keep in the same place. If they want to get somewhere else, they must run at least twice as fast" (Carroll, 1871). In this sense, competitive advantage in the contemporary business environment is reached by those companies that "run at least twice as fast" and, in doing so, manage their resources and capabilities in a more efficient and more effective way when compared with their competitors. These are the reasons why the contemporary knowledge-based economy supports a completely different business model that relies mainly on wealth creation through development, deployment, and utilization of companies' knowledge-based assets. Hence, the main drivers of modern companies' performance include knowledge, competence, intellectual

property, brands, reputation, and customer relationships (Dzenopoljac, Janosevic, & Bontis, 2016).

Knowledge and information enable companies to create optimum combinations of tangible and intangible resources that will lead to desired financial and market results. However, it is evident that in the information age, the success of companies depends more on available knowledge, as this is the key pillar of both tangible and intangible resources (Bontis, 1999). Unlike tangible resources, the intangible ones are a greater source of competitive advantage because they are more difficult for competitors to acquire or imitate (Volberda et al., 2011). For many organizations, achieving desirable business performance not only depends on successfully deploying tangible assets but also on managing knowledge effectively (Lee & Sukoco, 2007).

With the internet playing an important role in businesses and other applications during the last two decades, the expression "knowledge management" (KM) has generated a lot of interest in the corporate sector. KM is usually seen as a generic process through which organizations generate value from knowledge (Goh, 2005). Explained in the simplest way, KM aims to encourage people to share knowledge and ideas in order to create value-added products and services. Although it is easy to comprehend the essence and importance of KM, it is extremely challenging to change individual and organizational behaviour so that an organization can be transformed into a knowledge-creating entity (Chase, 1997).

2 | KNOWLEDGE MANAGEMENT IN THE ARAB REGION

Sabri (2005) stated that although the issue of KM is more easily applicable in developed countries that possess the required technical know-how and managerial capabilities, it is challenging to apply it successfully in developing economies because of different organizational and managerial problems. The Arab region holds certain specificities related to national intellectual capital development (Bontis, 2004). The countries of the Arab region are seen as developing economies (United Nations Development Programme, 2016), so it is understandable that they still face issues in terms of accepting the notion and elements of KM. Additionally, these countries have been characterized by expanding trade structures in recent times, with the aim of greater regional integration and participation in the global trading environment, which in turn has the potential to achieve higher levels of growth and national development (Gani, 2011). This requires an increased focus on developing and implementing adequate KM strategies.

According to the Arab Human Development Report developed by the United Nations Development Programme (2003),

A knowledge-based society is one where knowledge diffusion, production and application become the organizing principle in all aspects of human activity: culture, society, the economy, politics, and private life. Today, knowledge provides the means to expand the scope of human freedoms, enhance the capacity to guarantee those freedoms through good governance and achieve the higher moral human goals of justice and human dignity.

The main conclusions arising from the mentioned report are as follows: (a) there are significant differences in this regard between the Arab and Western regions; (b) the deficiency in knowledge assimilation and the shortfall of knowledge sharing in the Arab region are caused by a perplexing set of economic and political intricacies; (c) the Arab region needs a KM strategy, but the main obstacles are a mediocre research and development strategy and inadequate information and communication technology infrastructures; and (d) despite mentioned shortfalls, the Arab region has intellectual potential (Mohamed, O'Sullivan, & Ribière, 2008).

Alrawi (2008) has argued that the key managerial concerns regarding KM in the United Arab Emirates were of cultural, managerial, and informational nature. In regards to the raised cultural issues, the surveyed managers were concerned about the implications for change management and their ability to convince business departments to share knowledge with other departments. In many organizations, a major cultural shift would be required to change the employees' attitudes and behaviour so that knowledge and insights are willingly and consistently shared. The respondents within the mentioned study expressed concerns that senior managers might perceive KM as just another fad and that the concept suffered from immaturity. Finally, the concerns related to information were primarily associated with a desire to avoid employee information overload. Therefore, the concern was as much about the new information that

would be available as it was eliminating old, or wrong data, or knowledge that was no longer valid.

The Arab country that served as the subject of this research is the State of Kuwait, located on the Arabian Gulf in south western Asia. After the discovery of oil, in 1938, and after the beginning of its production and export in 1946, the economy of Kuwait grew significantly. As crude oil production increased to meet rising world demand in that time, the country's revenues from oil exports mounted significantly and rapidly. By the late 1950s, oil revenues made it possible for the Kuwaiti economy to achieve one of the world's highest per capita incomes. Kuwait is a typical example of an oil-based economy. The oil sector used to contribute more than 40% of the country's GDP and about 90% of its total exports. This is the reason why Kuwait has been labeled as "a single-sector economy." Kuwait is also characterized by limited absorptive capacity, meaning that during the last 50 years, gross investment represented around 30% of its net savings. The excess has been translated into a current account surplus in the balance of payments and represents a net addition to Kuwait's abundant capital invested abroad (Eltony, 2007). One of the factors that might aid Kuwait's economy to become diversified and to increase the importance of the private sector is a focus on knowledge management.

The Kuwait National Development Plan has been developed in order to set the nation's long-term development priorities. It is organized around five themes and seven areas of focus for investment and improvement. Each pillar has a number of strategic programmes and projects that are designed to have the most impact on achieving the government's vision by 2035. The focus areas include enhancing the global position of the country, investments in human capital, healthcare improvements, increasing attention to renewable resources, developing and modernizing infrastructure, diversification of the economy, and reform of public administration. The area directly related to KM concerns the development of human capital. This is planned to be achieved through projects like developing a professional qualification system, developing a skills centre and an integrated system for education reform, and changing Kuwait citizen's culture towards working in the private sector (Kuwait National Development Plan, 2017). Additional empirical proof that the companies from the Arab region and Kuwait specifically are shifting towards more intense utilization of human capital can be found in the work of Dzenopoljac, Yaacoub, Elkanj, and Bontis (2017), who revealed the positive and significant effect of proper human capital utilization on companies' market performance.

The purpose of this research study is to investigate the relationship between knowledge management processes and the level of business performance as perceived by the employees of companies in Kuwait, during 2016. The segments of the paper are structured as follows. The literature review covers the main definitions of KM, as well as its main processes. Besides this, the literature review will also address the relationship between KM and business performance. The paper will then present the main elements of the applied research methodology, such as the sample description and scope of the research, an explanation of used variables, and the development of research hypotheses. This will be followed by an explanation of the acquired research results. The paper will end with a discussion and a conclusion.

3 | LITERATURE REVIEW

3.1 | Knowledge management: definitions and processes

Storey and Barnett (2000) stated that in the current dynamic global business environment, which is highly dependent on knowledge, managing knowledge in an effective and efficient way is at the heart of creating core competencies for organizations. This has been supported by Zaim (2006), who asserted that knowledge management is the only promising medium that allows organizations to gain sustainable competitive advantages in the long-term. Accordingly, organizations are increasingly viewing KM as their most valuable strategic asset, and they are striving to find new ways to increase business performance through developing effective KM processes (Alrubaiee, Alzubi, Hanandeh, & Al Ali, 2015).

KM is regarded as a fast-growing discipline in academia (Serenko & Bontis, 2017). However, varying definitions have highlighted different thoughts towards the meaning of knowledge management. There is a vast number of definitions with more or less common characteristics (Lytras, Pouloudi, & Poulymenakou, 2002), which emphasize several different aspects of the concept. It is beyond the scope of this study to view all the definitions of KM. However, it will be useful to review some of them selectively, especially focusing on the KM definitions that are process-oriented in nature. Gottschalk (2000) underlined the ownership of knowledge and defined KM as unlocking and leveraging the knowledge of individuals so that this knowledge becomes available as an organizational resource that is not dependent on those same individuals. He stressed on the importance of intellectual capital and defined KM as management of the intellectual capital controlled by the company. Yao (2007) describes the KM system as a process of creating, collecting, spreading, saving, searching, and applying knowledge. This definition is in line with Martensson (2000), who also defined KM as the management of intellectual capital controlled by the organization to establish competitive advantage. Turban, Rainer, and Potter (2003), on the contrary, defined KM as the process of accumulating and creating knowledge and facilitating the sharing of knowledge so that organizations can apply it effectively. In many of these aforementioned conceptualizations, the process of KM is fundamentally related to intellectual capital development (Bontis, 2001; Bontis, Crossan, & Hulland, 2002).

A more process-oriented definition has been developed by Pearson and Saunders (2004), where they express KM through four main processes. The first being knowledge generation, which refers to all activities that discover new knowledge. The second is the capture of knowledge, which includes continuous scanning, organizing, and packaging of knowledge after it has been generated. The third process of KM is knowledge codification, which involves the representation of knowledge in a manner that can be accessed and transferred. Knowledge transfer is the fourth process, which involves transmitting knowledge from one individual or group to another individual or group and the absorption of that knowledge.

Keeping all the above definitions of KM in mind, this study adopted a process-oriented definition that is similar to that of Pearson and Saunders (2004) and further extended by Zaim (2006). Accordingly, the authors of this study define KM as

... the systematic management of all activities and processes that refer to generation and development, codification and storage, transferring and sharing, and utilization of knowledge for the organization's competitive edge.

The first process is knowledge generation and development, which includes all the activities by which new knowledge is generated for the benefit of the organization (Abou-Zeid, 2002). However, this process does not necessitate new knowledge generation as in many circumstances organizations may prefer to acquire knowledge from other sources and adopt it for their own use. Acquiring knowledge is important in two ways. The first one is that it can be used for knowledge creation. Second, if it is original and valuable for the organization, it can also be regarded as a part of knowledge generation. It should be noted that knowledge creation can be considered as the least systematic process of KM because it is not a systematic process that can be tightly planned and controlled. The process is rather continuously evolving and emergent wherein inspiration, motivation, and pure change play an important role (Bhatt, 2000). Knowledge development, conversely, requires more systematic, disciplined, and continuous efforts. KM is the process of either converting the innovative and creative ideas into actions, goods and services, or the development of goods and services for a higher value for customers. The process of knowledge generation and development is becoming more complicated and expensive, so often companies cannot cope with it using their own resources. As a result, companies tend to enter into a partnership or collaborate with other companies, groups, or individuals (Zaim, 2006).

The second process is codification and storage, which includes codifying, classifying, giving shape to, putting knowledge in a useful format, and storing it so it can be used by the right person, at the right time, in the right way. Nemati (2002) argued that this process is very important for the effective use of knowledge and also for reusing it when needed so that the knowledge in question will belong to the company rather than the knower. In addition, knowledge codification and classification are both essential for the filtering and elimination of unwanted knowledge from the information heap according to purpose, type, and the importance of knowledge (Lueg, 2001). This process is also important to reveal the inventor of companies' knowledge resources (Zaim, 2006).

The third process is knowledge transfer and sharing, which is concerned with the effectiveness of KM by focusing on how to organize the generation of new knowledge and transfer existing knowledge in the company. Bringing together intellectual resources and making them available across the organization are one of the most significant objectives of KM. It is argued that the lack of knowledge transfer and sharing knowledge throughout the organization may result in wasting resources and the loss of a significant amount of money due to repeating the same mistakes, duplicating projects, and being unaware of each other's knowledge (Robertson, 2002; Serenko, Bontis, & Hardie, 2007).

The last process is knowledge use and evaluation, which is mainly concerned with the use of the knowledge that has been generated, codified, and shared where it can only be meaningful if it is used in a way to add value to the company. To achieve this objective, knowledge management activities should lead to changes in behaviour, changes in

practices and policies, and also the development of new ideas, processes, practices, and policies (Bender & Fish, 2000). Zaim (2006) stated that the final stage of KM is the evaluation of KM activities. It is critical to evaluate and control the results of implementing KM and also reveal the performance of knowledge management efforts.

3.2 | Relationship between knowledge management and business performance

Knowledge and the production of new ideas have been accepted by the business world as the most significant factor for business success (Omerzel, 2010). Business performance may be considered synonymous with success, if it is accepted that the objective of the organization is to improve performance. Regardless of sector or industry, all organizations have one thing in common: In one way or another, they are all striving to become successful. Generally, attribution of success is complex and problematic because different bodies perceive success in different ways (Jennings & Beaver, 1995). Governmental institutions may perceive a business to be successful if it creates new jobs and provides an important product or service to the community. The most commonly adopted definition of success is growth in the economic sense. A company is generally regarded as successful if it grows in levels of profit, sales, market share, production or employment, or expands in ways that may be related to the growth of business, such as physical expansion (Muftuoglu, 1993).

Notwithstanding the lack of universally accepted criteria for success, market share, sales volume, company reputation, return on investment, profitability, and established corporate image have been widely used as measures of company performance. However, although most of these measures are important for organizations, it is believed that the manager's perception of the overall performance of the business should be one of the most important indicators of success. On this basis, some researchers define the success of business as a level of performance equal to or exceeding the expectations of the owner or manager (Luk, 1996). In this sense, many performance indicators have been developed to assess whether performance has exceeded expectations. However, these measures of success are often compared with the expectations of shareholders or owners. Such measures include internal required rate of return and economic value added. Managers' perceptions of corporate success are often realized through the so-called intrinsic value of the company, composed of internally expected future cash flows, discounted at the required rate of return.

Measurement of each of the above variables poses difficulties. The least problematic of the various possible measures of growth is turnover; it is easy to measure and is always recorded. From an economic perspective, sales are a relatively good indicator of size and therefore growth. Sales may be considered a precise indicator of how a company is competing within a market, and indeed, companies themselves tend to use it as a measure of their own performance. Any analysis of company growth should be at least in part based on changes in sales (Barkham, Gudgin, Hart, & Hanvey, 1996). Having discussed the concept of business success and how it is measured, it should be noted that being able to define success, no matter how personalized or how generalized, is not the same as being able to explain it (Jennings & Beaver, 1995). The fundamental question remains therefore, why do some

companies succeed whereas others do not? This is the main concern of this study with respect to the relationship between KM processes and business performance.

Several studies indicate that the efficiency of KM affects business performance (Bontis & Fitz-enz, 2002; Brush & Vanderwerf, 1992; Davenport & Prusak, 1998; Dollinger, 1985; Nonaka & Takeuchi, 1995). However, research into the area of KM and its effect on business performance has many weaknesses (Davenport, 1999; DeCarolis & Deeds, 1999). One of the major issues has been the theoretical nature and the lack of empirical evidence of the studies (Omerzel, 2010). It is argued that there are three main problems that make the research of KM particularly difficult. The first problem is the necessity of designing a measurement framework that contains all the important dimensions required to analyze the level of KM implementation in the company. The second problem that is raised is the justification of the relationship between KM and business performance. Another possible difficulty here is the lag effect of applying certain types of knowledge. The periods between applying the knowledge and the period in which there is an effect on performance are often not the same. The last obstacle is the existence of certain variables that work as mediators between KM and business performance (Davenport, 1999; McEvily & Chakravarthy, 2002; Omerzel, 2010) that point to the indirect effect of KM on business performance.

McKeen, Zack, and Singh (2006) concluded in their study that KM and organizational performance are directly related. Another interesting finding was reported by Feng, Chen, and Liou (2004), where they found that KM systems improved business performance by dropping administrative costs and improving productivity in the second year after the KM system had been implemented. Similar findings were also reported by Syed and Xiaoyan (2013), who investigated the relationship between KM and business performance in telecommunication and pharmaceutical companies. They found that the most important KM practices are the sharing of best practices, building of consistent processes, and managing core competencies. Their findings suggest that these practices have significant effect on business performance. Another study on the relationship between KM and business performance was carried out in the context of the telecommunication and information technology industry, and the findings confirm a positive and strong effect of KM processes on business performance (Alrubaiee et al., 2015). Several other studies found a positive relationship between KM and business performance in general or even when performance is measured using criteria such as operational efficiency, financial efficiency, shareholders' satisfaction, profitability, sales, and innovation (Al-Faris, 2010; Al-Hakim & Hassan, 2012; Kharabsheh, Magableh, & Sawadha, 2012; Marques, Leal, Marques, & Cardoso, 2014; Noruzy, Dalfard, Azhdari, Nazari-Shirkouhi, & Rezazadeh, 2013; Tseng & Lee, 2014; Tubigi & Alshawi, 2015).

4 | RESEARCH METHODOLOGY

4.1 | Sample description and scope

The study was carried out by collecting data from the employees of 139 companies in Kuwait. The research aimed to seek the responses

of 500 employees from this set of organizations. Ultimately, 488 (97.6%) individuals responded with fully completed questionnaires, whereas only 12 (2.4%) did not respond. The companies in the sample were categorized according to the Occupational Safety and Health Administration. Occupational Safety and Health Administration is part of the United States Department of Labor, and it implements the Standard Industrial Classification (SIC), which is a system for classifying industries by a four-digit code. Established in the United States in 1937, the SIC is used by government agencies to classify industry areas. According to the SIC classification, the distribution of sample companies is as presented in Table 1.

As can be seen from Table 1, the majority of companies investigated belong to the division of finance, insurance, and real estate (43.03%). Services sector companies make up 14.14% of the sample, whereas retail trade and public administration organizations make up 13.32% and 12.91%, respectively. Other divisions have between 0.2% and 5% of share in the sample. The mentioned four largest sectors in the sample account for 83.4% of the whole sample in the research. Within these four industry divisions, there are various industry groups that further reveal the internal structure of the used companies' sample. The finance, insurance, and real estate division has five industry groups covered in this research, the services division has 14 different industry groups that are examined, the retail trade consists of nine industry groups, and public administration is represented by 10 different industry groups.

4.2 | Variables used and hypotheses development

In this study, there were four different measures of business performance. Respondents were asked to rate their business performance over the last 3 years in sales, profit, market share, and innovation performance. These were chosen due to the fact that they are straightforward to measure, are commonly considered as essential indicators of business performance that are readily available for recall by respondents (Bontis, Chong, Keow, & Richardson, 2000; Venkatraman & Ramanujam, 1986), and are assumed to have relationships with knowledge management (Darroch, 2005; Mills & Smith, 2011).

TABLE 1 Distribution of companies in the sample

No.	Division (based on SIC Division Structure, 2017)	Number of responses	%
1	Agriculture, forestry, and fishing	1	0.2
2	Finance, insurance, and real estate	210	43.0
3	Manufacturing	8	1.6
4	Oil and gas extraction	24	4.9
5	Public administration	63	12.9
6	Retail trade	65	13.3
7	Services	69	14.1
8	Transport, communication, electric, gas, and sanitary	24	4.9
9	Wholesale trade	4	0.8
10	Not disclosed	20	4.1
Total		488	100.00

As mentioned earlier, there is almost a consensus that effective implementation of KM processes is positively linked to higher business performance (Zack, McKeen, & Singh, 2009). Nevertheless, there is a lack of sufficient empirical evidence regarding the relationship between the particular performance indicators and KM processes. A number of researchers have investigated the link between KM strategies and organizational performance (Choi & Lee, 2003; Choi, Poon, & Davis, 2008) and analyzed the organization's knowledge management performance with its major rivals to offer effective information for improving KM, increasing decision-making quality, and obtaining clear effort direction of attaining competitive advantage. Similarly, Marques and Simon (2006), Zack et al. (2009), and Ho (2009) revealed the link between KM practices and firm and financial performance.

Another stream of research aims to reveal the relationship between KM processes and overall firm performance. For example, Mills and Smith (2011) and Zaim, Tatoglu, and Zaim (2007) found a positive relationship between KM processes and organizational performance. Nielsen (2006) underlined the importance of KM processes for improving dynamic capabilities of organizations from a theoretical perspective. Kalling (2003) concluded some findings regarding the effects of the three processes of KM on organizational performance based on a qualitative study. Conversely, this study aims to analyze the particular effects of organizational performance indicators on KM processes. Accordingly, the following four hypotheses are introduced:

H1 *KM processes directly and positively affect sales.*

H2 *KM processes directly and positively affect profits.*

H3 *KM processes directly and positively affect market share.*

H4 *KM processes directly and positively affect innovation.*

The assessment of business performance in the above four areas was left to the perception of the representative employees as whether the business was doing well in each area of the business over the last 3 years. The perception of owners, managers, and employees has been used to assess the general performance of the firm as they are the people who know precisely what is going on or how the business is performing (Alasadi & AbdelRahim, 2007, 2008). Reliance on employee perception was also used by McKiernan and Morris (1994), who investigated the relationship between strategic planning and financial performance in British companies. They relied on the perceptions of CEOs to prescribe the measure of formality used in the analysis. In addition, Yuzbasioglu (1997) relied on the perceptions of owners and managers to assess the performance of the enterprise in terms of whether it was declining, surviving, or improving.

5 | RESULTS

5.1 | Sample size adequacy and reliability

The first inquiry in the research is related to the choice of sample size. There are multiple recommendations in terms of which sample size researchers should use to create a reliable study, in order not to waste

TABLE 2 Rotated component matrix

	Component			
	1	2	3	4
KGD01	.054	.283	.180	.636
KGD02	.159	.237	.304	.643
KGD03	.076	-.025	.231	.590
KGD04	.381	.086	.168	.667
KGD05	.299	.225	.154	.724
KGD06	.300	.212	-.019	.526
KGD07	.255	.416	.148	.584
KCS01	.124	.718	.136	.137
KCS02	.232	.774	.084	.138
KCS03	.188	.739	.093	.200
KCS04	.191	.717	.277	.210
KCS05	.142	.234	.119	.121
KCS06	.095	.532	.379	.295
KCS07	.158	.542	.422	.192
KCS08	.282	.439	.336	.262
KS01	.568	.182	.231	.237
KS02	.539	.169	.232	.198
KS03	.569	.226	.327	.103
KS04	.731	.226	.212	.102
KS05	.696	.238	.195	.147
KS06	.729	.180	.168	.139
KS07	.609	.064	.223	.121
KS08	.152	-.115	-.063	-.228
KU01	.230	.178	.621	.144
KU02	.205	.226	.278	-.041
KU03	.381	.270	.476	.290
KU04	.441	.200	.556	.329
KU05	.345	.162	.551	.358
KU06	.192	.210	.754	.230
KU07	.230	.165	.756	.133
KU08	.279	.169	.587	.325

Note. Rotation converged in 6 iterations. KGD = knowledge generation and development; KCS = knowledge codification and storage; KS = knowledge sharing; KU = knowledge utilization.

TABLE 3 Model summary, Regression 1

Model	R	R ²	Adjusted R ²	Std. error of the estimate	Durbin-Watson
1	.388 ^a	.150	.143	1.006	1.234

^aPredictors: (constant), REGR factor score 4, REGR factor score 1, REGR factor score 2, and REGR factor score 3.

^bDependent variable: BP01 (sales).

TABLE 4 Coefficients for regression model 1

Model		Unstandardized coefficients		Standardized coefficients			Collinearity statistics	
		B	Std. error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	3.636	.046		78.453	.000		
	REGR factor score 1	0.218	.046	.201	4.715	.000	1.000	1.000
	REGR factor score 2	0.243	.046	.224	5.238	.000	1.000	1.000
	REGR factor score 3	0.226	.046	.208	4.873	.000	1.000	1.000
	REGR factor score 4	0.138	.046	.127	2.982	.003	1.000	1.000

^aDependent variable: BP01 (sales). VIF = variance inflation factor.

resources (if samples are too large), on one side, and to avoid large doses of sampling errors (if the sample size is too small). According to Fleiss (1986), even samples of 15–20 can be enough, whereas Nunnally and Bernstein (1994) and Field (2005) claim that a sample size of 300 or more should be utilized in order to avoid sampling errors in the research. The second test requires calculation of the Cronbach alpha coefficient, which, in our case, has the value of 0.925. This points to the high reliability of groups of items in the questionnaires (36 of them). In social studies, the value of the Cronbach alpha should be higher than 0.7 in order for the internal consistency to be acceptable and therefore to produce valid research results.

5.2 | Factor analysis

The reliability of factor analysis heavily depends on the sample size. As discussed above, sample sizes of 300 and above are suitable for the type of analysis being conducted (the actual sample size in this study was 488). An additional test of sampling adequacy was done through performing Kaiser–Meyer–Olkin and Bartlett's test of sphericity, which both produce the KMO measure. In order for the sample to be adequate, the desired level of this measure should be above 0.5 (Field, 2005). The Kaiser–Meyer–Olkin measure of sampling adequacy has the value of 0.945, which further proves that the chosen sample is appropriate for this research.

The distributed questionnaires consisted of 35 statements in the four areas of assessments. These areas are the parts of KM processes as implemented in Zaim (2006): knowledge generation and development, knowledge codification and storage, knowledge sharing, and knowledge utilization. The fifth part of the questionnaire contained statements regarding business performance, specifically in sales, net profit, market share, and innovative performance over the previous 3 years. In order to assess the importance of each of the KM processes, each process was covered with seven (knowledge generation and development) and eight statements separately for each of the KM processes (knowledge codification and storage, knowledge sharing, and knowledge utilization), which account for 31 statements that tackle KM in total.

TABLE 5 Model summary, Regression 2

Model	R	R ²	Adjusted R ²	Std. error of the estimate	Durbin-Watson
1	.340 ^a	.116	.108	1.030	1.125

^aPredictors: (constant), REGR factor score 4, REGR factor score 1, REGR factor score 2, and REGR factor score 3.

^bDependent variable: BP02 (net profit).

TABLE 6 Coefficients for regression model 2

Model		Unstandardized coefficients		Standardized coefficients			Collinearity statistics	
		B	Std. error	Beta	t	Sig.	Tolerance	VIF
2	(Constant)	3.617	.047		76.208	.000		
	REGR factor score 1	0.149	.047	.137	3.149	.002	1.000	1.000
	REGR factor score 2	0.210	.047	.193	4.428	.000	1.000	1.000
	REGR factor score 3	0.261	.047	.239	5.493	.000	1.000	1.000
	REGR factor score 4	0.052	.047	.048	1.098	.273	1.000	1.000

^aDependent variable: BP02 (net profit). VIF = variance inflation factor.

All of the survey items are grouped into four factors, as anticipated by the analysis in Table 2. The fifth group was linked to the business performance items. The extraction method used in the factor analysis was principal component analysis, with eigenvalues over 1. This step in the analysis delivered the communalities with values higher than 0.5, which is the recommended value. The interpretability of the four revealed factors is further enhanced by applying the rotation, which maximizes the loading of each variable on one of the extracted factors, while minimizing the loading of other factors (Field, 2005).

As we can see from Table 2, after performing six iterations, with principal component analysis, the knowledge generation and development items load heavily on Factor 4, knowledge codification and storage items load on Factor 2, knowledge sharing items load on Factor 1, and knowledge utilization items load on Factor 3. After the performed analysis had been conducted, the identified factors were further tested through multiple regression analysis.

5.3 | Multiple regression analysis

Four distinct multiple regression models were developed in order to test whether each of the mentioned processes significantly determine business performance as perceived by the respondents. The first regression model assesses whether discovered factors significantly affect the sales of analyzed companies in 3 years prior to the year of research (2016). Table 3 shows the model fit for the first regression model.

Results from Table 3 reveal that the first regression model has the ability to explain 15% of the variance in sales changes in the previous 3 years.

TABLE 7 Model summary, Regression 3

Model	R	R ²	Adjusted R ²	Std. error of the estimate	Durbin-Watson
3	.359 ^a	.129	.121	.949	1.153

^aPredictors: (constant), REGR factor score 4, REGR factor score 1, REGR factor score 2, and REGR factor score 3.

^bDependent variable: BP03 (market share).

TABLE 8 Coefficients for regression model 3

Model		Unstandardized coefficients		Standardized coefficients			Collinearity statistics	
		B	Std. error	Beta	t	Sig.	Tolerance	VIF
3	(Constant)	3.571	.044		81.682	.000		
	REGR factor score 1	0.105	.044	.104	2.410	.016	1.000	1.000
	REGR factor score 2	0.203	.044	.201	4.646	.000	1.000	1.000
	REGR factor score 3	0.243	.044	.241	5.563	.000	1.000	1.000
	REGR factor score 4	0.141	.044	.140	3.233	.001	1.000	1.000

^aDependent variable: BP03 (market share).

The next table (Table 4), reveals the individual effect of different KM processes on companies' 3-year sales.

The conclusion is obvious; taking into consideration the effect of all four factors (KM processes) in the first regression model, there is a statistically significant effect on companies' sales.

The second regression model reveals whether the four distinct processes of KM have a significant effect on analyzed companies' net profit.

Table 5 shows the model fit of the second model, whereas Table 6 further shows the nature of the relationship between dependent and independent variables.

The model fit in the second regression model is lower, and not all of the KM processes show significant effects on the net profit of the companies. The model fit is at the level of 11.6% (Table 5). However, Factor 4 (knowledge generation and development) does not affect net profit significantly. The remaining KM processes (knowledge codification and storage, sharing, and utilization) possess significant impact, with knowledge utilization being the most important factor.

The third regression model, assessing the relationship between KM processes and companies' market share in the 3-year period prior to 2016, is shown in Table 7. Table 7 reveals the model summary in which it can be observed that this model has the explanatory power at the level of 12.9%.

The results in Table 8 indicate the significant positive impact of all four types of KM processes on achieved market share of the analyzed organizations, with knowledge codification and storage (Factor 2) and

TABLE 9 Model summary, Regression 4

Model	R	R ²	Adjusted R ²	Std. error of the estimate	Durbin-Watson
4	.475 ^a	.225	.219	.971	1.343

^aPredictors: (constant), REGR factor score 4 for analysis 1, REGR factor score 1 for analysis 1, REGR factor score 2 for analysis 1, and REGR factor score 3 for analysis 1.

^bDependent variable: BP04 (innovative performance).

TABLE 10 Coefficients for regression model 4

Model		Unstandardized coefficients		Standardized coefficients			Collinearity statistics	
		B	Std. error	Beta	t	Sig.	Tolerance	VIF
4	(Constant)	3.577	.045		79.961	.000		
	REGR factor score 1	0.258	.045	.235	5.766	.000	1.000	1.000
	REGR factor score 2	0.227	.045	.207	5.071	.000	1.000	1.000
	REGR factor score 3	0.267	.045	.243	5.972	.000	1.000	1.000
	REGR factor score 4	0.286	.045	.261	6.403	.000	1.000	1.000

^aDependent variable: BP04 (innovative performance).

knowledge utilization (Factor 3) showing stronger impact than the remaining two KM processes.

The last regression model reveals the nature of the relationship between organizations' KM processes and their innovative performance in 3 years prior to 2016. The results of the fourth regression model are represented in Tables 9 and 10.

KM processes in the analyzed organizations explain 22.5% of the innovative performance in the last three years, which is a significant increase in model fit compared with the previous three regression models.

These results show the related coefficients of the final regression model. As one can observe, all four KM processes affect innovative performance significantly, and also, all of them have a relatively equal effect on the innovative performance of the analyzed companies (betas revolve around 0.23).

6 | DISCUSSION AND CONCLUSION

This paper has two main contributions to the literature: (a) It is the first study to analyze the relationship between KM processes and organizational performance in a Kuwaiti context, and (b) it provides a comprehensive set of indicators for both the exogenous (i.e., knowledge management processes) and endogenous constructs (i.e., organizational performance indicators).

The purpose of this paper is to examine the effect of knowledge management on organizational performance. In this respect, the paper aims to investigate the direct effects of KM processes on organizational performance and to analyze whether there is a significant difference in Kuwaiti context or not.

The empirical results provide positive evidence regarding the relationship between KM processes and organizational performance indicators, which is consistent with the existing KM literature (Hsiao, Chen, & Chang, 2011; Kalling, 2003; Lee & Choi, 2003; Muthuveloo, Shanmugam, & Teoh, 2017; Zaim et al., 2007). In KM literature, there is adequate theoretical (Davenport & Prusak, 1998; Nonaka & Takeuchi, 1995) and empirical evidence (Choi et al., 2008; Mills & Smith, 2011; Palacios Marqués & José Garrigós Simón, 2006) regarding the positive impacts of effective KM implementation on organizational performance. However, the direct link between KM processes and organizational performance needs further research. Hence, one of the major contributions of this research is to provide clear evidence regarding the so-called link between KM processes and organizational performance based on empirical results.

As mentioned earlier, the field of KM has attracted copious attention regarding developed countries. Nonetheless, there are

comparatively fewer empirical studies focusing on KM practices in the Gulf Cooperation Council countries. The findings of this paper display considerable similarities with respect to the findings of other research focusing on this region. For example, the findings of this paper revealing implementation of KM processes in Kuwait are similar to the findings of Al-Busaidi and Olfman (2005) in Oman and Boumarafi and Jabnoun (2008) in the UAE. Likewise, Al-Athari and Zairi (2001) revealed that managers from both public and private companies in Kuwait believe in the importance of KM for their organizations' success. The research results are also coherent with the conclusions of Al-Musali and Ku Ismail (2016) who disclose a positive relationship between utilization of knowledge resources and financial performance of banks in the Gulf Cooperation Council region.

On the other hand, comparing the results of KM implementation in Kuwait with the Western countries shows consistencies and inconsistencies. For example, one of the major differences between these findings and conventional KM literature is regarding the knowledge generation and development process. In conventional KM literature, knowledge generation and the creation process are usually considered as enablers of superior organizational performance (Davenport & Prusak, 1998; Malhotra & Majchrzak, 2004; Nonaka & Takeuchi, 1995). According to this study, knowledge generation has comparatively less impact on most of the performance indicators except innovation performance. This is mainly because most of the companies in Kuwait are in the service sector, and the Kuwaiti economy is not yet a knowledge-driven economy.

The first three hypotheses examined in this study concern the effect of KM processes on sales, market share, and profit, respectively. The regression analysis revealed that there was a significant positive linear correlation between KM processes and these three performance indicators. Although there are many research findings that disclose the relationship between KM processes and organizational performance, there is little empirical evidence regarding the direct relationship between KM processes and sales, market share, or profit.

This result is contrary to other researchers (e.g., Darroch, 2005; Davenport, De Long, & Beers, 1998; Lee & Yang, 2000) who claim that it is not easy to reveal concrete links between KM and sales, market share, or profit. Hence, these researchers argue that it is more appropriate to analyze the indirect effects of KM on organizational outcomes in terms of nonfinancial indicators (e.g., organizational learning, innovation capacity, quality improvement, or customer value). Correspondingly, the results of this study support the alternative view that argues that there is empirical evidence regarding the direct effects of KM on financial performance indicators, including sales, profit, market share, or other financial ratios (Ho, 2009; Marques & Simon, 2006; Mills & Smith, 2011; Zack et al., 2009).

The fourth hypothesis in this study tested the positive linear correlation between KM processes and innovation performance. According to the regression analysis, this hypothesis is also supported, which is consistent with the theoretical and empirical studies in the KM literature. For example, Nonaka and Takeuchi (1995) suggest that effective KM is an antecedent of innovation whereas Von Krogh, Ichijo, and Nonaka (2000) examine how enabling knowledge creation will increase the innovation capacity of a company. Davenport and Prusak (1998), conversely, underline the importance of linking KM practices into organizational strategy in order to enhance the innovative performance of a company. Apart from that, there is a vast number of studies providing empirical evidence regarding the relationship between KM and innovation (Darroch, 2005; Darroch & McNaughton, 2003; Inkinen, Kianto, & Vanhala, 2015; Lin, Che, & Ting, 2012; Wang & Han, 2011).

Previous studies have also mentioned that there is a complex relationship between KM and innovation (Gloet & Terziovski, 2004), and in order to be innovative, having knowledge is important, but the capability of a company to leverage knowledge resources for being innovative is more important (Darroch, 2005). Hence, it is more useful to reveal the comparative effects of the KM processes and how these processes enhance innovation performance. Based on this study's results, all KM processes are positively correlated with innovation performance. Knowledge generation and development, though, appeared to have the most significant effect followed by knowledge utilization and knowledge sharing. Knowledge storage had the least significant effect on innovation performance. These results indicate that even though all processes of KM are important, it is the ability to leverage and utilize knowledge and then convert it into action that is the most significant KM process in terms of enhancing innovation performance.

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