



Technology Readiness in SMEs: Accounting Information Systems, Knowledge Management Capabilities, and Innovation

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Abstract

Technological readiness (TR) is weakly accepted by most small and medium-sized (SMEs) companies in Iraq because scare of using new technology. The level of use of accounting information systems (AIS), knowledge management capabilities (KMC), and innovation is not at the required level among Iraqi SMEs, which is considered a possible factor in poor performance. This study looks at technological readiness as an important factors encourage to using AIS, KMC, and innovation to improve organizational performance in Iraqi SMEs. A review was conducted to collect relevant information to identify the gaps in these factors. This study was also considered by two main theories: resource-based view and dynamic capabilities. The results show that SMEs should qualify for any cognitive and technological development and pay more attention to using a high level of these factors. In order to make optimal decision.

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1. Introduction

The low level of technologies readiness and concern using new technology still one of the problems faced by most SMEs that leads to lack positive attitudes, including motivation and appropriate prioritization by management to use new technologies [1, 2]. However, the rapid development of information technology (IT) makes much more complex. Therefore, this study takes into account that SMEs need to protect themselves and align with the required knowledge and latest technology in the current market. Particularly, the right decisions rely on quality of accounting information to takes proper decisions [3]. The context business environment, the existing literature needs a comprehensive view for information technology leads to an effective decision-making process through the effective AIS [4]. Moreover, the need to pursue KMC to improve SMEs' performance is also needed to be readiness to accept new knowledge to achieve decision-making on processes [5]. Therefore, the need for knowledge acquisition abilities is necessary in order to open innovation activities that are primarily linked to acquiring outer knowledge and then aiding the inflow and outflow for knowledge to accelerate innovation that enable firms to maintain their existing technologies organizationally [6]. SMEs in developing countries still face problems leading to low performance and the risk of failure as well as the inability to share and gain this knowledge negatively affects their performance, which was also found in previous studies [7, 8]. Accordingly, this study aims to bridge the gap through looking to what extent readiness in SMEs of using AIS, KMC, and innovation.

2. Theoretical Part

Technology readiness for adopting AIS, KMC, and innovation need to optimism, innovativeness, because the dimensions of optimism and innovativeness are contribute positively to improving the user's readiness to technology, while the dimensions of discomfort and insecurity are included in the category of inhibitors that negatively contribute to technological readiness [9]. Based on Parasuraman, the definition of technology readiness is the desire of the customers to use and adopt new technology to meet the needs and business goals and life every day. Discomfort refers Lack of mastery of new technologies and fear of being overwhelmed [10]. In addition, this fear will generate anxiety and tension when using techniques and thus fear of making mistakes [10–12]. Insecurity refers to scepticism about the use of new technologies and an attitude of mistrust towards their abilities to function properly [13].

There are several framework are proposed in previous studies that looked to improve the organizational performance of SMEs. For example, Ismail and King, [14] focused on Malaysian SMEs to examine the alignment of AIS with AIS capacity. The AIS alignment is associated with SME performance using questionnaires sent to 310 firms. The findings showed that a large proportion of these firms had achieved a high degree of alignment of AIS and reached better organizational performance. Daoud and Triki [15] proposed a conceptual model in the enterprise resource planning (ERP) environment using AIS and found that it could affect the performance of the company; this study was based on a survey of 102 Tunisian companies. Alnajjar [16] developed an evaluation framework that showed the impact of AIS on organizational performance. The study focused on 74 SMEs in the United Arab Emirates where the sample consists of the trading sector, services sector, and manufacturing sector. The study used questionnaires for data collection, in which the findings showed that AIS has an impact on organizational performance and performance management. Soudani [17] found that AIS has an impact on organizational performance based on the investigation of the usefulness of AIS in 74 listed companies in Dubai.

Chang and Chuang [18] proposed a research model to examine the effect of the knowledge management process on firm performance, and the role of infrastructure capability and business strategy on the knowledge management process. They investigated 135 firms related to the manufacturing industry in Taiwan. They found a positive relationship for both infrastructure capability and business strategy on the KM process, and proved the association between knowledge management and performance. Muthuveloo et al.[19] proposed a research framework to examine the influence of tangible and intangible tacit knowledge management strategies on organizational performance. A survey with 108 questionnaires was analysed in which the target sample was managers and directors of local and foreign manufacturing

companies in Malaysia. The findings emphasized the important role of tacit knowledge management on organizational performance. Vaccaro et al. [20] emphasized the important role of knowledge management tools and their positive effect on innovation, which is represented by the speed to market and product performance in addition to financial performance. They conducted a survey and collected 113 questionnaires from business units in the automobile industry of Brazil. Wang and Wang [21] investigated the relationship between knowledge sharing and innovation, and performance. They proposed a research model to examine these relations, and conducted a survey to test it using data collected from 89 questionnaires from high-technology firms in the Jiangsu Province of China. They found that knowledge sharing for both explicit and tacit practices facilitated innovation and performance.

Valmohammadi and Ahmadi [22] suggested a research model to examine the influence of knowledge management on organizational performance. The study was conducted in a national company in Iran. Based on 198 questionnaires, the study found that the practice of knowledge management has a positive influence on organizational performance. Lyu et al. [23] developed a conceptual model to examine the relationship among IT, innovation, and firm performance to enhance the performance of SMEs in Taiwan. They used questionnaires for data collection of which 135 questionnaires were valid. They found that innovation mediated between IT and firm performance. López-Nicolás and Meroño-Cerdán [24] investigated the consequences of knowledge management strategies and the effects on innovation and firm performance in Spain. They proposed a conceptual model to examine the main variables based on 310 questionnaires. They found that those companies that have knowledge management strategies in terms of personalization and codification directly and indirectly influence innovation capability and organizational performance. Tseng [25] argued that the knowledge management capabilities are an essential competency in order to meet the challenges of a firm's business. They examined the influence of KMC on corporate performance with purposive sampling using 107 questionnaires from the largest firms in Taiwan. They found that KMC could enhance performance.

Alaarj et al. [26] investigated knowledge management and its contribution to the organizational performance through 176 questionnaires from companies listed on the stock market in Malaysia. They found that KMC could enhance firm performance in terms of competitiveness, innovations, and new products. Yunis et al. [27] examined the relationship between information and communication technologies (ICT) use, innovation, and organizational performance. The study was conducted in the Lebanese market and 374 questionnaires were used. It was found that the use of ICT was positively linked to organizational performance as well as to innovation, while innovation mediated between ICT use and organizational performance. Cofriyanti and Hidayanto [28] proposed a model in their study to examine the factors that influence the use of information technology. They conducted a survey among 115 Indonesian SMEs. The results showed that using IT has a positive influence on innovation and performance.

In general, the models/frameworks used in previous work to improve organizational performance focused on specific areas in light of the special circumstances to achieve requirements for SMEs. Thus, generalization requires SMEs to have better performance through further studies. Therefore, this study identified key factors that can affect organizational performance. The researchers conclude that the lack of studies conducted in this area has led to the need to examine technology readiness in SME environment through the intra-relation among the three factors. The results may vary according to the different countries, and hence, the struggle to maintain business is increasingly important for the growth and profitability of the firms. The main articles related to this study is summarized as shown in Table 1. According to these tables, shown that previous studies in the information technology area used different theories.

Table 1. Summaries of Main Articles Used in the Study

Authors	Factors	Theory	Methodology	Results
Parasuraman, A. [10]	-Optimism -Innovativeness -Discomfort -Insecurity	-----	Interviews and Questionnaire	The findings from the National Technology Readiness Survey suggest several avenues for scholarly research aimed at enhancing extant knowledge about technology's role in marketing to and serving customers.
Alsultanny, Yas AlZuhair, Sara [9]	-optimism -innovativeness -discomfort -insecurity organizational performance dimensions -Market-based performance -Financial performance	-----	Questionnaire	The findings showed managers' degree of agreement on the variables; technology readiness contributors (optimism and innovativeness) were set in the agree category, and the inhibitors (discomfort and insecurity) were set in the neutral category. The results also showed no statistically significant influence from the contributors on market-based performance and moderate influence from the inhibitors on market-based performance.
Cofriyanti & Hidayanto [28]	-IT utilization - Innovation - Business performance - Perceived benefits - Organizational readiness - External pressure	Technology acceptance model (TAM2)	Questionnaire sent to 110 owners, managers or senior employees of SMEs	The findings show that the utilization of IT has a positive impact on both innovation and performance. And that innovation also has a positive impact on business performance.
Daoud & Triki,[15]	-Top management commitment -Accounting staff competency -External expertise quality -Accounting practices -Information quality -ERP system quality	Contingency Theory	Quantitative Study Using Questionnaire survey	Top management involvement and external expertise have an impact on the AIS and the accounting techniques used after ERP system adoption influence firm performance. Also The interaction effect of accounting staff competency with the AIS has a positive impact on firm performance improvement.
Soudani [17]	-AIS -Financial performance -Performance management -Organizational performance	----	Quantitative Study questionnaire	The results of this study show that although AIS is very useful and have effect on organizational performance to listed companies in Dubai financial market (DFM) but, there is no relationship between AIS and performance management.
López-Nicolás & Meroño-Cerdán [24]	- KM strategy - Codification - Personalization - Innovation -Organizational performance	-----	Questionnaire sent to 310 SME chief executive officers	The findings reveal that KM strategies impact directly and indirectly on innovation and organizational performance.
Lyu et al.[23]	-Innovation - Firm performance	-----	Questionnaire sent to 135	The findings show that IT is positively linked by innovation and

	- Information technology		SME managers	that innovation plays a mediator role between IT and firm performance.
MIM [16]	-Accounting Manager Knowledge -Top Management Support - AIS -Organizational Performance -Performance Management	-----	Questionnaire sent to 74 SMEs managerial personnel	The findings show that the AIS has a significant impact on organizational performance and performance management.
Muthuveloo et al.[19]	-Tacit knowledge management -Organizational performance	-Knowledge-based view - Organizational knowledge creation	108 questionnaires manufacturing organizations both local and foreign managers	The results show that tacit knowledge management has a significant influence on organizational performance.
Tseng [25]	- Knowledge management capability - Corporate performance - Customer knowledge	-----	Questionnaire sent to 107 Administrators	The findings show that knowledge management capability is the main factor in enhancing company performance.
Vaccaro et al. [20]	-Knowledge management tool - Financial performance - New product performance - Speed to market	-----	Questionnaire sent to 113 executive positions of Brazilian Automobile Manufacturers	The results show that the use of KMTs has a direct positive effect on speed to market and new product performance, as well as on financial performance.
Valmohammadi & Ahmadi [22]	-Knowledge Management practices -Organizational performance	BSC approach adopted	Questionnaire sent to 198 managers and employees of National Petrochemical Company	The findings show that KM practices have a positive impact on organizational performance.
Wang & Wang,[21]	- Tacit Knowledge sharing - Explicit knowledge sharing - Operational performance - Financial performance - Innovation speed - Innovation quality	-----	Questionnaire sent to 89 managers of high technology firms in Jiangsu Province	The results show that explicit knowledge sharing has an important effect on innovation speed and financial performance.
Yunis et al.[27]	-ICT -Corporate entrepreneurship -Innovation -Organizational performance	-Dynamic capabilities -Theory of innovation translation	Questionnaire sent to 374 employees and managers	The use of ICT is positively related to innovation and organizational performance. Innovation mediates the relationship between the use of ICT and organizational performance.
Kareem et al.,[2]	-Accounting information system -knowledge management capabilities -organizational performance	-Dynamic capabilities	Questionnaire sent to 236 owners, managers	The findings demonstrate that managers and owners in SMEs must attention on AIS and same time needs to pay more attention on KMC in order to enhancing organizational performance.

3. Theoretical Background

The researchers endeavored to define suitable theories that contribute to enhanced performance. Therefore, this study adopted RBV and DC theories to support variables. The RBV refers to the firm resources as “all assets, capabilities, organizational processes, firm attributes, information, knowledge, etc. controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness”[29]. As such, the use of AIS is one such resource, and internal resources and capacities can be clarified by the use of AIS, which, in turn, influence performance. Therefore, RBV can be widely interpreted as covering any physical resources of firms. While the DC refers to “the firm’s ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments” [30]. Therefore, it reflects an organization’s capability to achieve new innovative patterns for competitive advantage. The DC framework differs from RBV, in that it focuses on dynamically renewing an organization’s competitive advantage. In addition, the process of knowledge management is a key driver for the growth of dynamic capabilities. Therefore, this study looked at the gaps identified in the literature. Particularly, technology readiness and its impact on adoption to use AIS, KMC, and innovation to enhance performance among SMEs.

4. Conceptual Framework Proposed

The conceptual framework proposed in this study aimed to developed grounded upon the gaps recognized in the literature, On order to predict and explain how impact technology readiness on adoption of AIS, KMC, and innovation to improve organization performances among SME, the discussion on theories clarifies the relationship between variables under study. The study was developed based on the research problem. Figure 1 shows the conceptual framework proposed in this study.

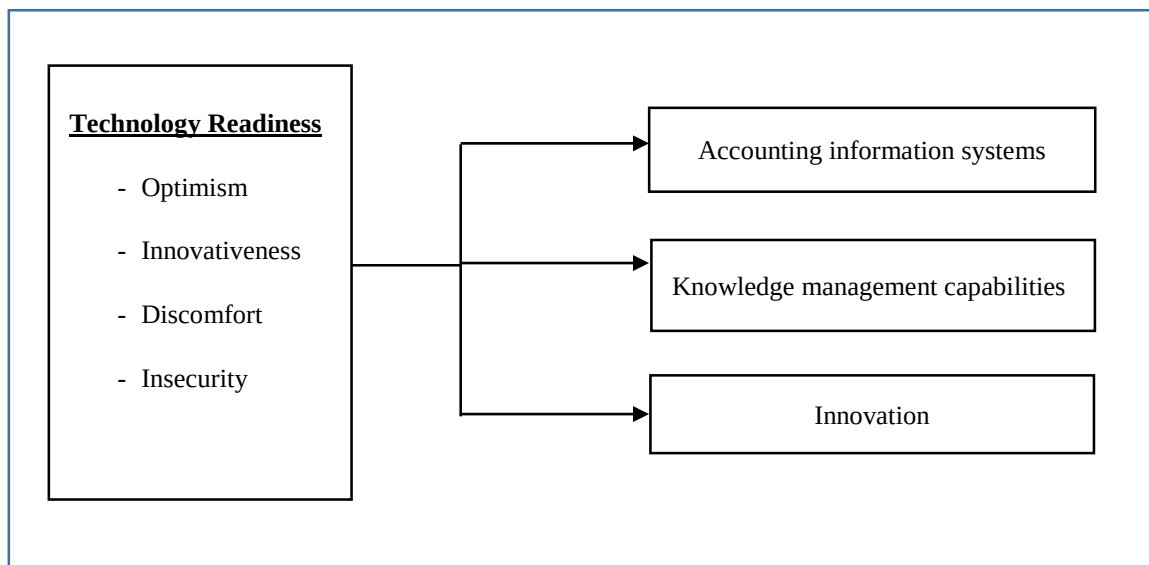


Figure 1: conceptual framework proposed

4. Discussion

The empirical studies in the literature pay a little attention on technology readiness, where the revolution in information system is the main issue facing SMEs and needs to be carefully addressed to enhance performance. In addition, AIS, KMC, for business decisions were modest in SMEs, as such, most of the SMEs have weaknesses at different levels, e.g. technological, organizational, managerial, individual, and environmental. A review of these studies also showed that little attention has been paid to the use of AIS,

KMC, and innovation aspects, which is essential to the needs of SMEs, and, particularly, in Iraq most of SMEs need technology readiness to be ready for an accepted new technology to improve organizational performance.

5. Conclusions

In general, the study targets to determining techniques to address the identified problems in Iraqi SMEs to gain a competitive advantage through looking to the technology readiness to adoption AIS, KMC, and innovation to improve organizational performance. Therefore, this study relied on a review according to several databases and focused on relevant studies to highlight the gap. The main contribution of this study is that managers/owners can understand these factors and seriously consider them in order to ensure the success of SMEs. In addition, competitive pressures between firms can be avoided. This review demonstrates enhance organizational performance considering several articles in different countries. On the other hand, all these studies focused on AIS as a system. In this study highlight on the important factors, that can incorporating AIS, KMC, and innovation in the SME, and utilize the resource-based view and dynamic capability theories could explain the relationship between these variables to enhance performance. The researchers recommend to apply this study in SMEs sector to improve their business performance, as they recommend the future studies to looking other variables could contributes to improve performance competitive pressure.

Conflict of Interest

The authors declare that they have no conflict of interest.

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