Critical Success Factors of Knowledge Management, Innovation and Organisational Performance: An Empirical Study of the Iraqi Mobile Telecommunication Sector

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Abstract: There is lack of evidence from previous studies that examined the relationships among critical success factors of knowledge management, innovation, and organisational performance, particularly in the Iraqi mobile telecommunication sector. Using quantitative survey research involving 220 mid-level managers, present study empirically tested a proposed theoretical framework that examines the above relationships based on structural equation model. The results show that critical success factors of knowledge management had a statistically significant and direct positive effect on innovation and OP. Most importantly, the findings indicate that critical success factors of knowledge management had a positive and statistically significant effect on organisational performance through the partial mediation effect of innovation. The present study shows the significance of the critical success factors of knowledge management in relation to enhanced innovation and improved organisational performance.

Keywords: Knowledge Management, Critical Success Factors, Innovation, Organizational Performance.

INTRODUCTION

In today's knowledge-based economy, businesses operate in a dynamic and complex environment. Knowledge Management (KM) implementation is becoming a significant source of sustainable innovation and Organizational Performance (OP). As such, contemporary organisations consider KM implementation as a key success in today's knowledge-based economy (Akhavan *et al.*, 2006; Chong *et al.*, 2009). Working on this assumption, several studies have been carried out to identify factors that affect successful KM implementation. These factors are called CSFs of KM (Abdullah *et al.*, 2009; Chong *et al.*, 2009; Chourides *et al.*, 2003; Chuang, 2004; Hung *et al.*, 2005; Zheng *et al.*, 2010). Critical Success Factors (CSFs) of KM implementation can be defined as the managerial and organisational factors that need to be effectively addressed in order to increase the probabilities of successful KM implementation (Asoh *et al.*, 2007; Carneiro, 2000). According to Wong (2005), organisations that seek to implement KM successfully must consider the development and understanding of CSFs. This means that without due consideration of CSFs, expected performance is not likely to be delivered. In a similar vein, Al-Mabrouk (2006) asserted that organisations could definitely benefit from a broader understanding of these factors, which are critical to the success of KM. Nevertheless, the adoption of factors that are not appropriate can hinder the desired performance achievement. In particular, Chong (2006) and Chong *et al.* (2009) stressed the need to consider the CSFs as an important issue when implementing KM in the telecommunications sector. Hence, the present study seeks to consider the CSFs as a significant part of KM implementation in the Iraqi Mobile Telecommunications Sector (MTS).

It has been argued that generally business organisations fail to implement KM successfully because they are not able to identify the critical factors for successful KM implementation (Greiner *et al.*, 2007). As a result,

they may face risk when implementing KM. Because KM implementation is one of management issues not appropriately valued by leaders in organisations, and because there is a lack of academic and scholarly endeavors, more investigation into CSFs of KM is still needed (Abdullah *et al.*, 2009; Razi & Abdul Karim, 2010), particularly in the definition and examination of the relationship between CSFs of KM and innovation (Brachos *et al.*, 2007; Chang & Lee, 2008; Chen & Huang, 2009; Donate & Guadamillas, 2011; Liao & Wu, 2010; Lin, 2007; Rhodes *et al.*, 2008) and the relationship between CSFs of KM and OP (Anderson, 2009; Asoh *et al.*, 2007; Gold *et al.*, 2001; Lin & Kuo, 2007; Yang *et al.*, 2009b; Zheng *et al.*, 2010). Accordingly, the researchers are interested in investigating how CSFs contribute to the successful KM implementation, which may lead to enhanced innovation and improved OP.

In the case of Iraq, the country is under the redeveloping stage. It has encountered many crises and hard conditions, such as the first and second Gulf War, economic embargo and lastly the U.S. occupation from 2003 to 2011. These conditions have considerably contributed to the collapse of the infrastructure in various sectors, such as oil, education, electricity (Al-Azzawi, 2011; Hafedh *et al.*, 2007), and particularly telecommunications (Report of United Nations Economic and Social Commission for Western Asia, 2005). According to the Report of the United Nations Economic and Social Commission for Western Asia (2005), mobile phone penetration in Iraq is much less than it should be, especially in rural areas. Certainly, many obstacles adversely affect the development of MTS. The most important is the security issue. Other factors include the existing bad infrastructure and the lack of training of professionals that hinder the knowledge management. Therefore, there is a need for innovative ideas to accelerate the growth of penetration. Mohamed (2009) emphasized that the government should be committed to a plan to develop information technology and telecommunications infrastructure. This should be combined with adopting long-term plans to create knowledge and paying attention to knowledge transfer at all levels in this sector. Mahdi (2008) similarly noted that KM implementation in the Iraqi MTS is still in its earliest stage, but its possibility of acceptance is high because KM is strongly related to technological organisations. Therefore, it is necessary to conduct extensive studies on the influence of CSFs of KM on MTS. Moreover, the role of innovation in improving the OP of Iraqi MTS needs more empirical studies (Al-Enzi, 2008). In a nutshell, the Iraqi MTS is currently facing numerous problems that need to be addressed. Consequently, present study seeks to address the issues of CSFs of KM in this sector to enhance innovation and improve OP.

THEORETICAL BACKGROUND

Critical Success Factors of Knowledge Management

In short, successful KM implementation requires preparation to create an organisational environment to get the best possible use of knowledge, and a conducive environment of effective KM implementation. Previous studies have identified a broad range of factors that could have an effect on the success of KM implementation. Table 1 provides a summary of the main CSFs in those studies.

Table 1: Critical Success Factors of Knowledge Management Implementation

Author and Year	CSFs of KM
Chait (2000)	Ensuring vision and alignment, managing four domains: content, process and infrastructure, and culture and creating an effective plan.
Grover and Davenport (2001)	Strategy, structure, culture, and technology.
Stankosky and Baldanza (2001)	Leadership, organisation, technology, and learning.
Gold *et al.* (2001)	Technology, structure, and culture.
Nemati (2002)	Culture, structure, information technology infrastructure, organisational and managerial, and industry specific.
Lee and Choi (2003)	Collaboration, trust, learning, centralisation, formalization, T-shaped skills, and information technology support.
Chourides *et al.* (2003)	Strategy, human resource management, information technology, quality, and marketing.
Chuang (2004)	Technical resource, structural resource, culture resource, and human resource.
Hung *et al.* (2005)	A trusting and open organisational culture, senior management leadership and commitment, employee involvement, employee training, trustworthy teamwork, employee empowerment, information systems infrastructure, performance measurement, benchmarking, and knowledge structure.
Wong and Aspinwall (2005)	Management leadership and support, culture, information technology, strategy and purpose, measurement, organisational infrastructure, processes and activities, motivational aids, resources, training and education, and human resource management.
Chong (2006)	Business strategy, organisational structure, knowledge team, knowledge audit, and knowledge map.
Al-Mabrouk (2006)	Management leadership, culture, information technology, strategy, measurement, organisational infrastructure, training and education, motivation, resources, and processes.
Yeh *et al.* (2006)	Corporate culture, people, information technology, and strategy and leadership.
Akhavan *et al.* (2006)	Human resources management and flexible structures, KM architecture and readiness, knowledge storage, benchmarking, and chief knowledge officer.
Lin and Kuo (2007)	Human resource management and organisational learning.
Slagter (2007)	Coaching leadership style, structure, roles and responsibilities, Emphasis on learning and education, attention to motivation, trust, reward and recognition, and establishing the right culture.
Asoh *et al.* (2007)	Technology, leadership, culture, and measurement.
Tasmin and Woods (2008)	Leadership, culture, technology, process, and measurement.
Rhodes *et al.* (2008)	Information technology systems, flexible structure and design, innovative organisational culture, and structured learning strategies.
Chong *et al.* (2009)	Business strategy, organisational structure, knowledge team, knowledge audit, and knowledge map.
Abdullah *et al.* (2009)	Knowledge infrastructure, knowledge employee, knowledge work, and knowledge asset.
Anderson (2009)	Culture, structure, and information technology.
Yang *et al.* (2009b)	Culture, structure, and information technology.
Zheng *et al.* (2010)	Organisational culture, organisational structure, and organisational strategy.
Ling and Shan (2010)	Culture, leadership, employee participation, information and communications technology, and organisational structure.
Allameh *et al.* (2011)	Culture, structure, and information technology.

According to CSFs of KM listed above, most of the success factors explored by the researchers mentioned in human resource management, information technology, leadership, organisational learning, organisational

strategy, organisational structure, and organisational culture. The next seven sections each focus on CSFs of KM concepts.

Human resource management: Most researchers suggest that human resource management is crucial for the KM implementation in achieving success (Edvardsson, 2008; Gloet, 2006; Shih & Chiang, 2005; Yahya & Goh, 2002). Human resource management is responsible for equipping employees in the organisation, who are the main source of knowledge creation through the sharing of ideas, opinions and experiences (Monavvarian & Khamda, 2010). But often employees are reluctant to share their knowledge with others because of vested interests and lack of trust. Therefore, it is important for organisations to harness the involvement and contribution of employees through KM. Human resource management practices are essential to capture and support employees' knowledge and skills that an organisation needs (Chen & Huang, 2009).

Human resource management practices are defined as a strategic personnel management that gives emphasis on the gaining, organising and motivation of human resources (Svetlik & Stavrou-Costea, 2007). In this regard, Lee and Lee (2007a) pointed out that human resource management practices, including staff training and development, performance appraisals, compensation, planning of human resource management and employees security have a significant influence on OP improvement. In the same manner, Chen and Huang (2009) found that human resource management practices, which include training, compensation, performance appraisal, staffing and participation, are able to contribute to successful KM implementation.

In general, the successful KM implementation hinges on the motivation of employees to create, share and apply knowledge. Therefore, human resource management practices have become the most vital issue in the KM implementation (Lin & Kuo, 2007). However, many KM frameworks have neglected to identify the nature of the relationship between employees and KM success, which is reflected in the limited examination of human resource management practices in the KM literature (Theriou & Chatzoglou, 2008; Yang *et al.*, 2009a). In this case, Lopez-Cabrales *et al.* (2009) argued that human resource management practices can improve the knowledge within organisations, but there are few studies about the use of human resource management in managing knowledge. Thus, based on the above, present study focuses on human resource management practices to implement KM in the Iraqi MTS because there are few empirical studies that focus on this role (Lopez-Cabrales *et al.*, 2009; Theriou & Chatzoglou, 2008; Yang *et al.*, 2009a).

Information technology: Modern systems of information technology have a decisive role in KM implementation because it can provide important tools to organisations, such as the use of information of clients and competitors, technical databases, decision support systems, management models, successful solutions to competitive situations, and access to specialized sources of knowledge. This will facilitate and expedite the KM implementation in organisations (Carneiro, 2000).

According to Chong *et al.* (2000), KM refers to a process of leveraging, articulating skills and experiences of employees supported by information technology. Subsequently, the information technology systems will be able to maintain continuously new knowledge, knowledge transfer and knowledge storage (Mohamed *et al.*, 2006). In addition, it can help employees in organisation to reduce time of transfer knowledge. It also helps achieve higher efficiency, quality and employees' participation of transfer knowledge (Vaccaro *et al.*, 2010). In this context, Consistent with Ray (2008) argued that there are three elements of information technology systems that can help successful KM implementation. Firstly, the role of information technology in KM implementation needs to be identified. Secondly, it should facilitate document storage, organization, and

access. Thirdly, organisations should maintain the databases, hardware, and software and information survivability. Thus, based on the above, present study focuses on the important role of information technology in implementing KM in the Iraqi MTS.

Leadership: It is regarded as an important component of successful KM implementation. A leader is a role model for others in continuous learning. KM requires an unusual manner of leadership to guide others to achieve the highest levels of OP (Stephen, 2000). Leadership is defined as the support of top management for achieving KM activities (Asoh *et al.*, 2007).

Several researchers have investigated the relationship between leadership and KM. Lakshman (2007) considered leadership role as a key variable in the relationship between KM and OP improvement. He identified two internal and external dimensions of leadership role in supporting KM implementation. These dimensions depend on the leader's comprehension of the importance of KM implementation. Internal dimension is the leader's comprehension of the importance of technological and socio-cognitive role in the KM implementation. External dimension is the leader's comprehension of the importance of customer-focused knowledge in the KM implementation. Moreover, Singh (2008) emphasized that the leadership style is a key role in the KMPs for gaining competitive advantage. He suggested four leadership styles (i.e. directive, supportive, consulting, and delegating) in the implementation of KM. The results indicate that directive and supportive styles of leadership are significantly and negatively related to KMPs, but the consulting and delegating styles are positively and significantly related to KMPs.

Likewise, Politis (2001) examined the relationship between transformational leadership (which includes attributed charisma, individual consideration, and intellectual stimulation), transactional leadership (which includes contingent reward and consideration), and various dimensions of knowledge acquisition (which includes communication, personal traits, control, organization, and negotiation). He found a strong positive relationship between various styles of transformational leadership and transactional leadership, and various dimensions of knowledge acquisition. In addition, he considered mid-level managers as gatekeepers of information and knowledge. He recommended that further studies should reexamine these variables. Similarly, Crawford (2005) looked at the relationship between styles of transformational leadership and KMPs. He hypothesised that transformational leadership styles leads to the creation of knowledge culture in the organisation, which leads to successful implementation of KMPs and to more innovation. The results indicated that transformational leadership style, which consists of charisma, individual consideration, intellectual stimulation, and inspiration, is significantly related to KMPs (which consist of acquisition, creation and application). He suggested the needs for future research to investigate the relationship between transformational leadership styles and KM.

To conclude, according to Migdadi (2005), transformational leadership has recently received unprecedented attention in KM because of the effect of this style on employees' motivation to create and share knowledge. However, only a few empirical studies have focused on the effect of transformational leadership role on KM. Hence, present study focuses on the importance and the role of the transformational leadership styles in the implementation of KM in the Iraqi MTS (Crawford, 2005; Migdadi, 2005).

Organisational learning: The success of contemporary organisations depends on creating organisational environment that combines organisational learning with KM (Pemberton & Stonehouse, 2000). Organisational learning has been defined as a collective ability based on experiential and cognitive processes

involving acquisition, sharing and utilisation of knowledge (Aragón-Correa *et al.*, 2007). In addition, it is defined as an integral feature of any learning organisation that successfully utilizes its knowledge assets to generate superior performance (Dimitriades, 2005). López *et al.* (2004) argued that KM and organisational learning should "go hand in hand" in the organisation to achieve superior performance.

Organisational learning consists of three major dimensions: commitment to learning, vision sharing and open-mindedness (Baker & Sinkula, 1999; Calantone *et al.*, 2002; Lee & Lee, 2007a; Liu *et al.*, 2008; Razi & Abdul Karim, 2010; Zhang & China, 2008). These dimensions could have a significant positive effect on KM implementation (Baker & Sinkula, 1999; Calantone *et al.*, 2002). Indeed, Liu *et al.* (2008) and Zhang and China (2008) mentioned that these dimensions have a significant positive effect on knowledge transfer, which includes organisational knowledge transfer, group movements and procedure movements. Based on the above, present study focuses on the organisational learning activities in the Iraqi MTS.

Organisational strategy: The successful KM implementation always needs to be linked with effective organisational strategy. In this regard, Chong *et al.* (2007, 2009) revealed that the organisation's ability to succeed in its KM implementation program depends on its ability to choose and apply the organisational strategy needed, which gives it a sustainable competitive advantage. Therefore, the efforts to link KM implementation with organisational strategy are important to achieve OP. Knowledge creation plays a critical role in the development of organisational strategy by providing knowledge about the customer, service, technology and market, which is considered key for strategic choice (Yang *et al.*, 2010). Moreover, Greiner *et al.* (2007) emphasized that the KM implementation must therefore support the strategic direction of the organisation. Based on the above, present study focuses on the role of organisational strategies in implementing KM in the Iraqi MTS.

Organisational structure: Organisational structure refers to the outcome of the combination of all the ways in that work can be divided into various tasks, the coordination of which must subsequently be ensured (Claver-Cortés *et al.*, 2007). Most organisations seek to implement KM by choosing suitable organisational structure to maintain the continuity of creating new knowledge. As such, suitable organisational structure must encourage team spirit at work and increase exchange of the ideas with low degree of formalization and a decentralisation of the decision making process (Gold *et al.*, 2001; Zheng *et al.*, 2010).

According to Chen and Huang (2007), organisational structure is divided into three elements: formalization, centralisation, and integration. They noted a few studies that have investigated the effect of organisational structure on the KM implementation. The results indicate that interaction had positive effect on knowledge sharing and application. Also, the decreased rate of creating new knowledge comes due to the adoption of the formalization structure and structure of centralisation procedures in the workflow. Based on their findings, they suggested that a decrease in formalization and centralisation procedures in the workflow and more decentralised is pertinent. By doing so, creation of new knowledge can be enhanced through social interaction between employees.

Furthermore, Claver-Cortés *et al.* (2007) indicated the important role of the flexible organisational structures on successful KM implementation. Flexible structures help achieve decentralisation of decision-making process by facilitating the communication process at all organisational levels. In the same vein, Al-Alawi *et al.* (2007) emphasized that organisational structure characterized by participative decision making, ease of information flow and cross-functional teams contribute positively to support knowledge sharing. Hence,

based on the above, present study focuses on the characteristics of decentralised organisational structure in the implementation of KM in the Iraqi MTS.

Organisational culture: It is a vital element in directing and monitoring efforts towards KM implementation. It is defined as a model of shared basic assumptions that is a taught to the group as a way to solve its troubles of external adaptation and internal integration and therefore it is taught to new members as the right way to perceive, believe and feel in relative to those troubles (Park *et al.*, 2004). In essence, both organisational culture and KM depend on human dimensions (Al-Alawi *et al.*, 2007; Park *et al.*, 2004). Furthermore, organisational culture is an essential building block to creating a "knowledge friendly culture", which leads to positive outcomes such as more innovation and improvement of OP (Lai & Lee, 2007).

Furthermore, organisational culture can either be a hindrance or an enabler to successful KM implementation. Previous studies have highlighted several characteristics of organisational culture considered a major barrier of successful KM implementation (Al-Alawi *et al.*, 2007; Tseng, 2010; Park *et al.*, 2004). But Tseng (2010) noted that organisational culture characteristics such as trust, common cultures and broad ideas of productive work have significant contributions in the successful KM implementation. For example, Park *et al.* (2004) found a positive relation between KM implementation and the characteristics of culture such as stability, flexibility, trust, sharing knowledge freely, and support of employees. Al-Alawi *et al.* (2007) investigated the relationship between culture characteristics, such as trust, communication and information systems and knowledge sharing such as direct assessment, techniques, collaboration required to accomplish tasks and willingness to share knowledge freely. They found that those culture characteristics are positively related to knowledge sharing in the organisation. The researchers recommended further studies to identify other cultural characteristics, which may affect knowledge sharing. Hence based on the above, present study focuses on culture characteristics in the implementation of KM in the Iraqi MTS, particularly with few empirical studies focusing on this issue.

INNOVATION

Innovation is defined as "the creation of new knowledge and ideas to facilitate new business outcomes, aimed at improving internal business processes and structures and to create market driven products and services" (Plessis, 2007, p. 21). Literatures on innovation indicate a variety of types of innovation (Damanpour *et al.*, 2009), ranging from incremental to radical, for example. Some researchers group the types of innovation into three main categories: administrative and technical, product and process, and radical and incremental (Yang, 2007). The reasons why organisations adopt different types of innovations are because of environmental conditions, organisational factors, generation processes of innovation, and organisational sector. Despite innovation is a multi-type activity, present study will adopt the results of previous studies that considered the technological innovation, administrative innovation, radical innovation and incremental innovation as a main reason to survival and growth organisations (Blazevic, 2003; Jaspers *et al.*, 2007; Oke, 2007).

Technological innovation is the knowledge that links methods, components, and techniques with processes to create a product or service (Popadiuk & Choo, 2006). Administrative innovation refers to the changes in organisational structure and processes, like the authority, tasks structuring, personnel recruitment, resources allocation and rewards (Lin *et al.*, 2010). Radical innovation is a main change that represents a new technological pattern (Pedersen & Dalum, 2004), and requires more organisational capabilities and superior

profundity of knowledge (Darroch & McNaughton, 2003). Incremental innovation is defiend as cumulative and gradual nature of technological changes in organisation to create products or services (Pedersen & Dalum, 2004). As such, unlike incremental innovation, it does not require much organisational capability (Darroch & McNaughton, 2003).

ORGANISATIONAL PERFORMANCE

The OP indicators have become an important issue in evaluating organisational success (Moullin, 2007). It is defined as "comparing the expected results with the actual ones, investigating deviations from plans, assessing individual performance and examining progress made towards meeting the targeted objectives" (Ngah & Ibrahim, 2010, p. 503). Based on this definition, OP indicators can provide assistance for managers to evaluate the organisational activities and maintain the competitive position or superiority over competitors (Liao *et al.*, 2009; Visser & Sluiter, 2007).

In this regard, the BSC approach is one of different well-known ways for evaluating the knowledge management and innovation performance by examining the gap between a target and an actual performance of the organisation (Wegmann, 2008; Yu & Liying, 2009), particularly from the RBV and KBV theories' perspectives (Bose & Thomas, 2007; Gonzalez-Padron *et al.*, 2010). According to Lee and Lee (2007b), several assessment methods are included in the knowledge management performance. These methods can be classified into four groups (financial measures, intellectual capital, tangible and intangible benefits, and balanced scorecard), but the BSC is considered to be more useful than intellectual capital or tangible and intangible approaches because it provides a comprehensive view of the organisation's actual performance. In a similar context, Wegmann (2008) indicated that the BSC approach is compatible with knowledge management. It is the best approach to evaluate knowledge management within any organisation (Hongmei & Yujun, 2010). On the other hand, Yu and Liying (2009) claimed that BSC has become the main approach and a prerequisite for assessing innovation performance. Furthermore, Kaplan and Norton's (2006) BSC provides the evaluation of innovation performance as the first priority in its approach.

Kaplan and Norton developed the first BCS in the early 1990s, which encompassed financial and non-financial measures. The original BSC recommends that an OP should be assessed from four perspectives (Creamer & Freund, 2010, p. 365):
1. The financial perspective emphasizes the long-term objectives of the organisation in terms of revenue growth and productivity improvement. The financial objectives should be the final goals for the other perspectives.
2. The customer perspective emphasizes the lifetime relationship and service delivery with customers.
3. The internal process perspective focuses on the use of customer information to sell new services according to their needs.
4. The learning and growth perspective is the foundation of the BSC; this perspective looks at the motivation, training, and capacity to innovate that employees need in order to implement organisational objectives.

HYPOTHESES DEVELOPMENT

Critical Success Factors of Knowledge Management and Innovation

In superior organisations, it is important to determine the CSFs of KM that enhance innovation (Chang & Lee, 2008; Chen & Huang, 2009). In spite of past investigation, there are very few previous studies that examined the relationship between CSFs of KM and innovation from a comprehensive viewpoint (Brachos *et al.*, 2007; Chang & Lee, 2008; Chen & Huang, 2009; Donate & Guadamillas, 2011; Liao & Wu, 2010; Lin, 2007; Rhodes *et al.*, 2008). Some studies have shown that CSFs of KM do have a significant and positive relationship to innovation. For instance, Donate and Guadamillas (2011) showed that culture, leadership, and human resource management have a significant and positive effect on innovation. Liao and Wu (2010) found that organisational learning is significant and positively related to innovation. In the research by Sanz-Valle et al. (2011), culture has a significant and positive effect on technological innovation through the mediating role of organisational learning. In assessing the relationship between information technology and innovation, Rhodes et al. (2008) argue that information technology has a significant and positive relationship to innovation performance. Thus, it is expected that:

H1: CSFs of KM have a significant and positive effect on innovation.

Critical Success Factors of Knowledge Management and Organisational Performance

Even with a large body of literature documenting how CSFs of KM influence OP, no study gathers all the CSFs of KM that may affect OP in one research (Anderson, 2009; Asoh *et al.*, 2007; Gold *et al.*, 2001; Lin & Kuo, 2007; Yang *et al.*, 2009b; Zheng *et al.*, 2010), particularly in the MTS context (Chong *et al.*, 2009). In any case, previous empirical studies have shown that CSFs of KM have a significant and positive relationship with OP. For instance, Anderson (2009) and Gold *et al.* (2001) argued that technology, organisational culture, and organisational structure measured as CSFs of KM have a significant and positive relationship with OP. Asoh *et al.* (2007) also found that the CSFs of KM (i.e. technology, leadership, culture, and measurement) have a significant and positive relationship with OP. Moreover, Zheng *et al.* (2010) determined that CSFs of KM (i.e. structure, culture, and strategy) have a significant and positive effect on OP. Yang *et al.* (2009b) highlighted the significant positive effect of culture, structure, and information technology on OP. In Lin and Kuo's (2007) research, the results indicated that human resource management practices have significant and positive indirect effects on OP through KM capabilities. Likewise, Ho (2008) pointed out that organisational learning has a significant and positive effect on OP. Thus, it is expected that:

H2: CSFs of KM have a significant and positive effect on OP.

Possible Mediating Role of Innovation

The extant literature reveals that a gap remains in the innovation field, particularly in the determination of the significant factors that have a direct effect on innovation to improve OP (Akgün *et al.*, 2009; Aragón-Correa *et al.*, 2007; Calantone *et al.*, 2002; Camisón & López, 2010; García-Morales *et al.*, 2007). In this regard, the indirect relationship between CSFs of KM (human resource management, information technology, leadership, organisational learning, organisational strategy, organisational structure, and organisational culture) and OP (financial perspective, customer perspective, internal process perspective, and learning and

growth perspective), through innovation (technological innovation, administrative innovation, radical innovation, and incremental innovation) has never been previously explored within a single study. In such conditions, where a relationship has never been previously explored, an indirect hypothesis should be formulated (Sekaran & Bougie, 2010). Therefore, in line with many researchers (Akgün *et al.*, 2009; Aragón-Correa *et al.*, 2007; Calantone *et al.*, 2002; Camisón & López, 2010; García-Morales *et al.*, 2007), the present study proposes that innovation plays a significant and positive mediating role in the relationship between core requirements of KM implementation and OP, based on RBV and KBV theories' perspectives that provide a theoretical basis for explaining the influence of the CSFs of KM on OP through innovation. Thus, it is expected that:

H3: Innovation has a significant and positive mediating effect on the relationship between the CSFs of KM and OP.

PROPOSED RESEARCH MODEL

The research framework of the present study is developed based on RBV and KBV theories' perspectives (Anderson, 2009; Asare, 2008; Asoh *et al.*, 2007; Chen & Huang, 2009; Liao & Wu, 2010; Li *et al.*, 2006; Greiner *et al.*, 2007; Lopez-Cabrales *et al.*, 2009; Pathirage *et al.*, 2007). These perspectives generally assert that knowledge leads to enhanced innovation and improved OP (Asare, 2008; Greiner *et al.*, 2007; Pathirage *et al.*, 2007). The framework, based on RBV and KBV theories' perspectives, is conceptualized based on a number of previous studies (Anderson, 2009; Asoh *et al.*, 2007; Chen & Huang, 2009; Liao & Wu, 2010; Li *et al.*, 2006; Lopez-Cabrales *et al.*, 2009). Then, the research framework of the present study is shown in Figure 1.
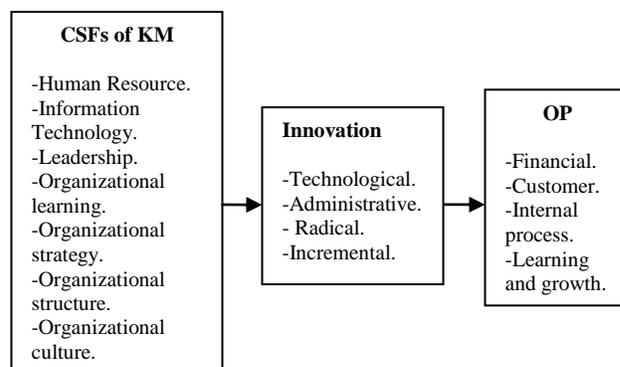

Figure 1: Theoretical framework of the study

As contributions to the body of knowledge, the proposed theoretical framework shown in Figure 1 describes the causal relationships among three variables of the CSFs of KM, innovation, and OP. The independent variables in this framework is the CSFs of KM. and the dependent variable is OP. Additionally, Innovation acts as the mediating variable between the KMPs and OP.

METHODOLOGY

Sample and procedures

Based on an application of proportionate stratified random sampling technique, questionnaires were randomly distributed among 300 mid-level managers of the Iraqi MTS by personal delivery and collection of questionnaires from March to June 2011. From the 300 questionnaires which were randomly distributed, present study used the remaining 220 valid and complete questionnaires for the quantitative analysis, and the sample data was acceptable for Structural Equation Model (SEM) analysis.

Measures

For the present study, there are 75 items on a five-point Likert scale were used to measure responses. The 35 items of the CSFs of KM measurement were adapted from Choi (2002), Chong *et al.* (2009), Hsieh (2007), and Wong and Aspinwall (2005). Additionally, the nineteen items of innovation measurement were adapted from Darroch (2005), Darroch and McNaughton (2002), Herrmann *et al.* (2007), Li *et al.* (2006), and Lin *et al.* (2010), with a new item of incremental innovation was developed based on the theoretical study of Salavou (2004). Finally, the 16 items of OP measurement were adapted from Gonzalez-Padron *et al.* (2010) and new 4 items were developed based on the theoretical study of Visser and Sluiter (2007).

ANALYSIS AND RESULTS

Structural Relationships among Exogenous and Endogenous Latent Variables

In order to test the substantive hypotheses, a final structural model was developed. It was run with 75 items to assess three latent variables (KMPs, innovation, and OP). Only 31 items of overall latent variables were presented in this model. This is because the overall results presented evidence of a good model fit ($p = .148$, GFI = .905, CFI = .968, TLI = .965, and RMSEA = .018) and the Chi-square index was significant ($\chi^2 = 446.166$, df = 416, χ^2/df = 1.073). The final structural model is shown in Figure 2 below:
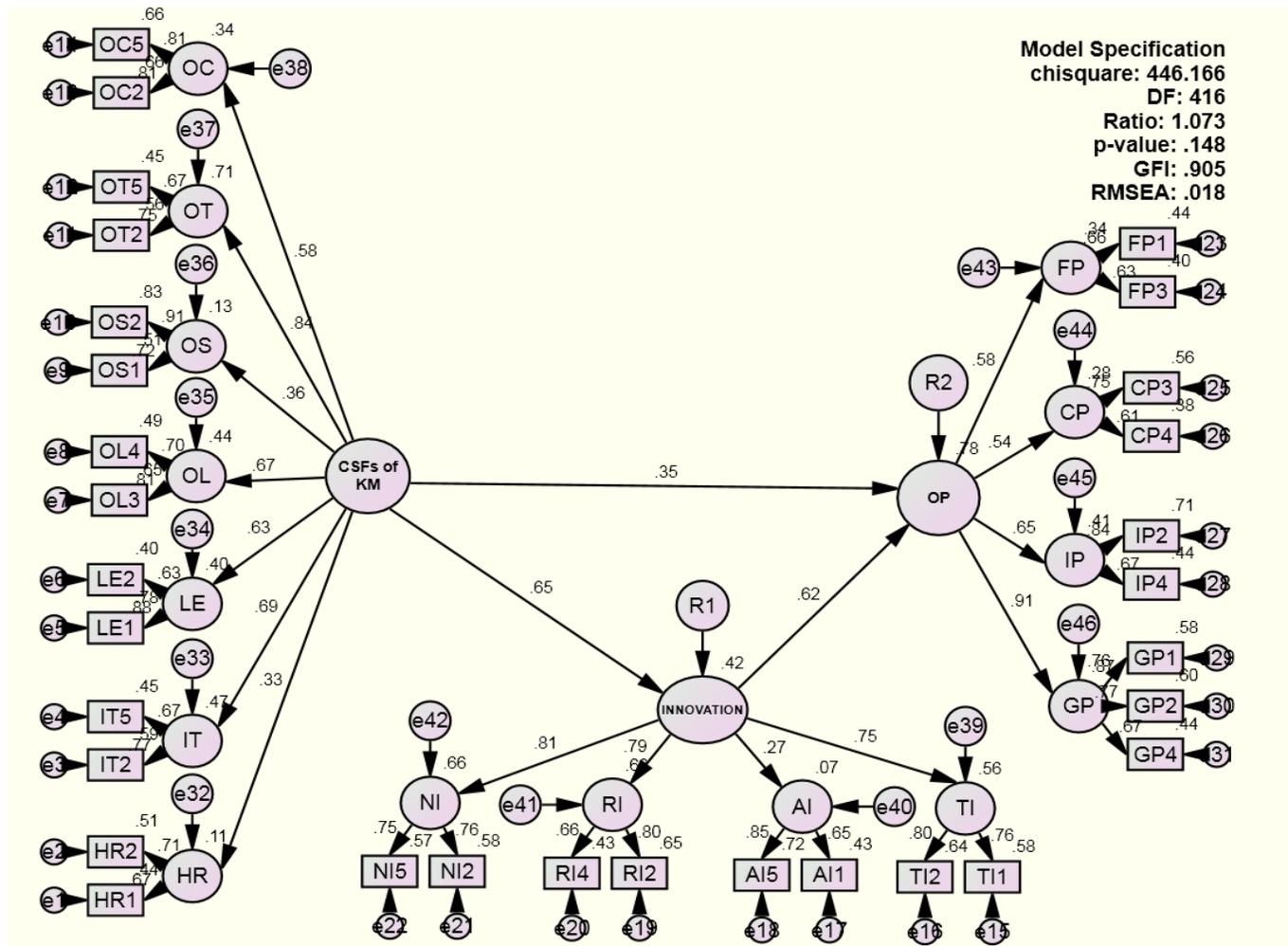
Figure 2: Final Structural Model

Hypotheses Testing and Discussion

Comparing the results of SEM with the hypotheses, the standardised path coefficient of (.653) seems to indicate that CSFs of KM had a positive and statistically significant effect on innovation use (H1). Then, it was accepted. The findings of the present study reinforce the work by Chang and Lee (2008), who argued that organisational culture is considered an important source of knowledge accumulation capability in order to enhance organisational innovation. In this regard, the results show that pairing between organisational culture and knowledge accumulation capability has a significant and positive effect on administrative and technological innovation. Additionally, Chen and Huang (2009) found that soft human resource management practices have a significant positive effect on KM capacity. They also revealed a significant positive relationship between KM capacity and innovation performance (administrative and technological innovation). Also, the standardised path coefficient of (.354) suggests that CSFs of KM had a positive and statistically significant effect on OP use (H2). Then, it was accepted. This result is in line with previous empirical studies. For example, Gold *et al.* (2001) found there are three main CSFs of KM (including technology, organisational culture, and organisational structure) that have a significant positive effect on OP.

Furthermore, Zheng *et al.* (2010) explored that structure, culture, and strategy have a significant positive effect on OP. The results of Asoh *et al.*'s (2009) study highlighted the significant positive relationship of

technology, leadership, culture, and measurement with OP. Furthermore, Ho (2008) found that organisational learning (including information-sharing patterns, inquiry climate, learning practices, and achievement mindset) has a significant positive effect on OP. Moreover, Lin and Kuo (2007) found that human resource management practices have significant and positive indirect effects on OP through KM capabilities. Furthermore, the findings indicate that CSFs of KM had a positive and statistically significant effect on OP through the partial mediation effect of innovation use (H3) with indirect relationship estimates (.407). Then, it was partial accepted. Indeed, the present study could represent the first empirical investigation of the partial mediating role of innovation in the relationship between CSFs of KM and OP under RBV and KBV theories' perspectives, especially in the Iraqi MTS. This was indicated in the results of the present study that the seven CSFs of KM implementation (including human resource management, information technology, leadership, organisational learning, organisational strategy, organisational structure, and organisational culture) are the most important factors that lead to improved OP (including financial perspective, customer perspective, internal process perspective, and learning and growth perspective) through innovation (including technological innovation, administrative innovation, radical innovation, and incremental innovation).

CONCLUSIONS

The present study shows the importance of the CSFs of KM in relation to enhance innovation and improve OP. Consequently, present study contributed to the previous studies through proposed a theoretical framework, which based on both of RBV and KBV based theories. The this framework is explained the direct relationship between CSFs of KM (consisting of human resource management, information technology, leadership, organizational learning, organizational strategy, organizational structure, and organizational culture) and OP (consisting of financial perspective, customer perspective, internal process perspective, and learning and growth perspective metrics) and indirect relationship between CSFs of KM and OP through investigate the intervening role of the innovation (consisting of radical, incremental, technological and, administrative innovations). In empirical examination, the present study provides the empirical investigation of the partial mediation role of innovation in the relationship between CSFs of KM and OP under RBV and KBV theories' perspectives, especially in the Iraqi MTS. Further work in this area will need to confirm theses results.

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