



## Facilities

An assessment model of FM organisational performance  
Ahmad Firdauz Abdul Mutalib, Maimunah Sapri, Ibrahim Sipan,

## Article information:

To cite this document:

Ahmad Firdauz Abdul Mutalib, Maimunah Sapri, Ibrahim Sipan, (2018) "An assessment model of FM organisational performance", Facilities, Vol. 36 Issue: 3/4, pp.212-226, <https://doi.org/10.1108/F-06-2016-0072>

Permanent link to this document:

<https://doi.org/10.1108/F-06-2016-0072>

Downloaded on: 27 February 2018, At: 06:27 (PT)

References: this document contains references to 82 other documents.

To copy this document: [permissions@emeraldinsight.com](mailto:permissions@emeraldinsight.com)

The fulltext of this document has been downloaded 19 times since 2018\*

Access to this document was granted through an Emerald subscription provided by

Token:Eprints:VKEP5FUBMGQRUU8VI82A:

## For Authors

If you would like to write for this, or any other Emerald publication, then please use our Emerald for Authors service information about how to choose which publication to write for and submission guidelines are available for all. Please visit [www.emeraldinsight.com/authors](http://www.emeraldinsight.com/authors) for more information.

## About Emerald [www.emeraldinsight.com](http://www.emeraldinsight.com)

Emerald is a global publisher linking research and practice to the benefit of society. The company manages a portfolio of more than 290 journals and over 2,350 books and book series volumes, as well as providing an extensive range of online products and additional customer resources and services.

Emerald is both COUNTER 4 and TRANSFER compliant. The organization is a partner of the Committee on Publication Ethics (COPE) and also works with Portico and the LOCKSS initiative for digital archive preservation.

\*Related content and download information correct at time of download.

# An assessment model of FM organisational performance

Ahmad Firdauz Abdul Mutalib, Maimunah Sapri and Ibrahim Sipan  
*Centre for Real Estate Studies, Universiti Teknologi Malaysia, Skudai, Malaysia*

Received 2 July 2016  
Revised 10 February 2017  
19 May 2017  
Accepted 1 June 2017

## Abstract

**Purpose** – The purpose of this paper is to improve the existing model developed by Hsu and Sabherwal (2012) by developing a new dimension of the relationships between a group of constructs (knowledge elements, mediating constructs and facility management [FM] organisational performance) in the model of FM organisational performance.

**Design/methodology/approach** – The paper reviews the theoretical studies empirically to all of the knowledge elements (learning culture, intellectual capital and knowledge management) literature, mediating constructs (customer performance, efficiency, innovation and dynamic capabilities) and the organisational performance that relates to FM.

**Findings** – The paper identifies the relationships between the knowledge elements, mediating constructs and the FM organisational performance. Subsequently, a proposal of relationships was made to develop the FM organisational performance model.

**Research limitations/implications** – The model provides a possible explanation of relationships between the knowledge elements, mediating constructs and the FM organisational performance. Thus, the understanding of the identified relationships will provide a new direction in improving the FM organisational performance.

**Originality/value** – Addressing lack of research in identifying the importance of relationships between knowledge and the FM organisational performance, the paper conceptualises the potential relationships into a proposed model. The proposed model integrates with a new mediating construct into the existing research model, which is customer performance. Moreover, knowing that the nature of FM organisation is more towards the non-financial aspects, the paper investigates the nature of the efficiency and organisational performance that is not based on the financial performance, but rather the ability to optimise organisational resources, to achieve organisational goals and customer needs.

**Keywords** Organizational performance, Knowledge management, Intellectual capital, Facility management, Learning culture, Mediating constructs

**Paper type** Conceptual paper

## 1. Introduction

Facility management (FM) includes various disciplines to ascertain workplace environment functionality by implementing an integration among people, place, process and technology (IFMA, 2009). FM is tested to realign or to distinguish its own insight base to improve FM field and relates with better execution of FM organisation in future (Nutt, 2000; Mustapa and Adnan, 2008). Also, the FM organisation in Malaysia is still in the development process to strengthen the FM field, which is related to the growth of knowledge and organisational practices as indicated by the FM industry needs in Malaysia (Firdauz *et al.*, 2015). As Alexander and Nielsen (2012) contended that it is essential to work together between researchers, practitioners and educators to improve the quality of knowledge availability for the decision-making in FM organisation. This indicates the significance in overseeing the structure of knowledge, particularly on FM to ensure the efficacy in reducing the gaps between theory and practice. In addition, Pathirage *et al.* (2008) pointed out, the formation of



---

strategic value in the FM organisation can be achieved by the application of perpetual improvement to FM knowledge. Along these lines, this paper describes and outlines the relationship between knowledge and organisational performance.

## 2. The theoretical background

One of strategic management contribution to the theory of the organisation is the resource-based view (RBV) (Barney, 1991). The RBV consists of a set of specific resources and capabilities as the basis for creating and protecting the organisation competitive advantage (Amit and Schoemaker, 1993). Taher (2012) supported this notion by claiming that resources and capabilities empowering the organisation to improve its survival prospects.

Resources are defined as stocks of available factors that are owned or controlled by the organisation. The RBV suggests that capabilities which are precious, unconventional and unique will determine long-term competitive advantage (Barney, 1991). In addition, an organisation's human capital stands as the capabilities foundation in developing, carrying and exchanging information (Amit and Schoemaker, 1993). A form of interaction between knowledge resources is the essence of capabilities that an organisation can possess (Grant, 1996).

The knowledge-based view (KBV) of the organisation was developed as an extension of the RBV of the organisation (Barney, 1991). As an extension of RBV, KBV concentrates the process of developing the knowledge that can be seen as a key component in achieving competitive achievement (Saarenketo *et al.*, 2009). As a further extension, Spender and Grant (1996) and Grant (1997) highlighted that KBV concentrated on the primary interest of the knowledge as intangible resources for ensuring an organisation's long-term survival and success.

In a similar vein, KBV likewise adopted a rationale originating from the RBV, namely, resources and capabilities. As indicated by Decarolis and Deeds (1999), the concept of knowledge for the organisation can be explained in the form of stocks of knowledge and flows of knowledge. They further clarified that the stock of knowledge is the result of the accumulation of knowledge that will become as a valuable asset to the organisation. Whereas, flows of knowledge are represented in the process of managing the knowledge in the organisation which may be assimilated and developed into stocks of knowledge. Flows of knowledge will improve the capacity in making new knowledge and endeavour the current knowledge base (Donate and Canales, 2012). In this way, the explanation of stocks and flows of knowledge shows kindred attributes with the purpose of resources and capabilities that an organisation can possess. RBV highlights resources that are valuable, rare and practically inconceivable for other organisations to duplicate resources, which led to stocks of knowledge. Further, capabilities that an organisation can possess likewise led to knowledge management (KM), which is a flow of knowledge.

## 3. The importance and growth of knowledge

In previous sections, both RBV and KBV were discussed empirically. RBV highlighted the importance of resources and capabilities in an organisation. The elaboration of resources and capabilities create a strong relation with KBV, which focuses the importance of stocks and flows of knowledge. As a further extension, this section discussed the importance and growth of knowledge.

In connection with stocks of knowledge, intellectual capital (IC) (Youndt *et al.*, 2004), which comprises human capital, social capital and organisational capital can be further expounded in the context of individual and social knowledge. IC represents as distinctive knowledge stocks that can be accumulated and shared out through individuals,

relationships among individuals (e.g. employee and customer) and the organisation itself (Subramaniam and Youndt, 2005). In this manner, IC can be characterised as the aggregate of all knowledge stocks that are associated with the competitive advantage of an organisation (Subramaniam and Youndt, 2005).

Associated with the entirety of all knowledge stocks, the need to manage the knowledge stocks in a practical useful form is very important. As per Alavi and Leidner (2001), KBV gives an incipient direction or consequential insights through which we may view and comprehend the most critical reason for an organisational presence, in particular the creation transfer and the application of knowledge. As such, managing knowledge in organisations is fundamentally about creating an environment in the organisation that is conducive and to encourage knowledge acquisition, conversion and knowledge application. This is where KM comes into the picture. Knowledge fills in as the reason for KM to be used for execution of knowledge process, which comprises the diversity of knowledge acquisition, converting the tacit knowledge into explicit one and facilitating the distribution and application of knowledge through transferring and sharing. As indicated by Gupta *et al.* (2000), organisations are starting to understand that there are immense and generally untapped resources diffused around in the organisation knowledge.

The explanations of IC and KM describe a strong relation with stocks and flows of knowledge that are embedded in KBV. IC describes the accumulation of knowledge through the human, social and organisational capital. Whereas, KM describes the way in managing knowledge through acquisition, conversion and application of knowledge. Therefore, the relationship between IC and KM is rooted in the KBV of the organisation (Levitt and March, 1988; Marr *et al.*, 2003). Moreover, KBV focuses the importance of knowledge accumulation and KM as the key source in improving organisational performance (Grant, 1996; Hsu and Sabherwal, 2011).

Further, along with describing the importance of knowledge as source of competitive advantages, organisational performance was discussed further to visualise the relationships between knowledge and organisational performance.

#### 4. Overviews of organisational performance

Siggelkow(2002) viewed an organisation as the centre frameworks (organisational culture, strategy, structure, power distributions and control system), elaborate, independent and the interconnections between all or part of the organisational elements such as resources, activities, processes and policies. The definition of performance can be related to the efficiency of input or output relationship, regardless of whether the organisation uses the least conceivable resources to meet its objectives. The performance also can be related with effectiveness in terms of dealing with issues like business growth and employee or customer satisfaction, whether the organisation meets its objectives (Abu-jarad *et al.*, 2010; Katou and Budhwar, 2012). Shieh (2011) supports this notion by asserting that the organisational performance can be depicted as achievements obtained for each organisational function, and it demonstrates the degree of realisation of the organisational objective. A portion of cases for the organisational function can be portrayed in terms of the leadership, motivation factors for the employees pursuing their work, the organisational culture and environment, the work design and the human resource management policy.

Subsequently, organisations will always look for competitive advantages to ensure their organisational performance will gradually increase. Moreover, organisational performance can also be improved by evaluating the performance of financial and non-financial related measures (Newbert, 2008; Van De Voorde *et al.*, 2012).

Financial measures use several items such as return on assets (ROA), return on investment (ROI) and profit growth that are presumed to result in competitive advantage (Ferraresi *et al.*, 2012; Kim and Kim, 2009). Whereas, the management and operational measures (non-financial) may include items such as quality of product and processes that promotes innovation, satisfaction of customers and organisations capacity in using resources to meet future opportunities and challenges (Delaney and Huselid, 1996; Venkatraman and Ramanujam, 1986). In addition, Katou and Budhwar (2012) supported this notion by claiming the importance to improve the employee attitudes of motivation, satisfaction and commitment that will enhance organisational performance.

In this way, the importance of finding the right competitive advantages has been highlighted in the explanation of RBV and KBV, which is knowledge as the intangible resources that can be treated as a competitive advantage. According to Peltier *et al.* (2013), knowledge is not exclusively the source of competitive advantage, but rather how knowledge is managed and shared. With the end goal of identifying the relationships between knowledge and organisational performance, Hsu and Sabherwal (2012) contended the uses of three constructs that mediates the relationship between knowledge and organisational performance, namely, efficiency, innovation and dynamic capabilities. This was followed by the study by Peltier *et al.* (2013) who imply another mediating construct, namely, customer performance. These four mediating constructs are discussed further in Section 5.

### 5. Proposition of relationships in the proposed model

A study of relationships between knowledge and organisational performance has been conducted by Hsu and Sabherwal (2012), but the study targeted for non-specific organisations and the model did not develop in a group of constructs. This research concentrates on FM organisations. Thus, this research's aim is to improve the existing model developed by Hsu and Sabherwal (2012) by developing a new dimension of the relationships between a group of constructs (knowledge elements, mediating constructs and FM organisational performance) in the model of FM organisational performance. The following discussion will lead to the justification of the proposed relationships in which suggested in a form of proposition (P).

According to Chen (2012), with the new era of complicating and rapidly changing in the business environment, knowledge has been acknowledged as a potential strategic resource that gives a basis for competitive advantage. This shows the growth of research that studies the benefits of knowledge in the organisational performance. For instance, one of the earliest literature, Levitt and March (1988) studied in-depth about organisational learning that involved knowledge creation and application. In other words, the literature explained indirectly the relationship between IC and KM in the organisational learning process.

The discussion has highlighted the essence of learning culture, IC and KM that have a potential in creating competitive advantage to the organisation. This paper allocates the three constructs of learning culture, IC and KM in one group, namely, knowledge elements. The purpose is to give a clear picture of a group of knowledge elements that have a potential relationship with the organisational performance. As such, this paper described the knowledge elements in the context of FM. In relation with learning culture, Peltier *et al.* (2013) studied on the potential relationship between organisational learning culture and performance. His findings indicated that there is an indirect effect between organisational learning culture and performance. Amaratunga and Baldry (2002) support this notion by emphasising the importance of the organisational learning culture that creates the ability of

FM organisation to improve performance by reacting and adapting to the business environment changes:

*P1. Learning culture has a positive relationship with intellectual capital.*

The relationship explained in a form of stocks and flows of knowledge which have been described previously in KBV. IC representing the stocks of knowledge that exists in an organisation at a particular point in time (Bontis, 1998; Eisenhardt and Santos, 2002). Whereas, KM representing the flows of knowledge by managing the stocks of knowledge in an organisation (Bierly and Chakrabarti, 1996; Nonaka, 1994; Nonaka and Takeuchi, 1995). More specifically, the evolving stocks of knowledge in IC over time are dependent on efficiency of the process implemented in KM. Both IC and KM are important bases for organisational competitiveness, and neither can be pursued independently of the other (Wiig, 1997). KM improves and strengthens knowledge resources that relate to IC. The existing knowledge within the organisation would give an impact, based upon the condition of how the knowledge resources (IC) were used and processed (KM). It is also used in terms of how knowledge is obtained in a form of human, social and organisation capital. Whereas, the process consisting of an acquisition of knowledge, converting knowledge from tacit into explicit and applying the knowledge.

A case study was conducted by Pathirage *et al.* (2008) for the purpose of identifying the key knowledge components within the environment of FM. Their study indicated IC as a tool to recognise the accumulation of knowledge, while KM is used to convert tacit knowledge in FM such as individual experiences of facilities managers and workers within facilities organisations into explicit knowledge:

*P2. Intellectual capital has a positive relationship with knowledge management.*

Thus, developing cross-disciplinary research frameworks for the integration of the technical and management issues of FM, putting back together what the traditional professions have pulled apart; sharing appropriate research and practical data. To develop practical theories in the FM field, the consolidation of the knowledge base must be established and supported by secured techniques, sound criteria and responsible expertise. It is helpful to recognise the essence of FM and to enriching FM knowledge (Gao and Cao, 2011). As Alexander and Nielsen (2012) contended that it is important to collaborate between researchers, practitioners and educators in improving the quality of knowledge available for the decision-making in FM organisation. This shows the importance in managing body of knowledge, especially on FM to ensure the effectiveness in reducing the gaps between theory and practice. In addition, Pathirage *et al.* (2008) pointed out, the application of the continuous improvement on FM knowledge will generate strategic value in FM organisation. Kamaruzzaman *et al.* (2016) contended that until today, limited research has been conducted on the use of the concept of KM in the FM organisation in Malaysia, and the level of awareness within the FM organisation in Malaysia in using KM is still low. Therefore, this paper described the relationship between knowledge and organisational performance.

Despite the growing research on knowledge contribution to the organisational performance, Andreeva and Kianto (2012) contended that there is a possibility to imply construct that mediates the relationship between knowledge and organisational performance. The existing empirical evidence in the KM literature demonstrated the importance of linking the knowledge resources (IC) and knowledge processes (KM) with mediating constructs that connect the benefits of knowledge with the organisational performance (Easterby-Smith and Prieto, 2008; Gold *et al.*, 2001; Lee and Choi, 2003).

Iii (2012) argues that there is a “missing link” in identifying suitable construct that enables KM to be transformed into significant organisational performance.

In relation to the mediating constructs, some prior literature examines the direct effects of IC and/or KM on organisational performance (Youndt *et al.*, 2004; Kong and Thomson, 2009; Huang and Hsueh, 2007). Conversely, Hsu and Sabherwal (2012) pointed out that their research indicated IC and KM have an indirect relationship with organisational performance. Therefore, they incorporate dynamic capabilities, innovation and efficiency as constructs that mediate the consequences of IC and KM on organisational performance. In addition, customer performance was also identified as an additional mediating construct being supported by knowledge application in a form of customer data quality which has positive relationship on organisational performance (Peltier *et al.*, 2013; Santos-Vijande *et al.*, 2012). Therefore, this paper had outlined the steps to identify the relationship between knowledge elements (learning culture, IC and KM), mediating constructs and the organisational performance.

Customer performance is an organisation’s ability to create competitive advantage that has a positive impact on customers’ satisfaction, retention, perceived added value, customer loyalty and ultimately that better customer performance will result in improved organisational performance (Hooley *et al.*, 2005; Peltier *et al.*, 2013; Santos-Vijande *et al.*, 2012). Supported by other previous research, for example, based on organisational learning theory, the customer knowledge orientation involves first acquiring the customer knowledge (social capital), and then transforming them (knowledge conversion) into customer data quality which has relationship with the customer performance (Zahay *et al.*, 2012). Tucker and Pitt (2009) contended that there are two significant relationships in which the FM organisation must put into consideration. The two important relationships are customer’s feedback on FM service delivery and ability of FM organisation in sharing knowledge on customer performance to improve FM organisational performance. Thus, this paper concentrated on the relationship between KM, customer performance and FM organisational performance:

P3. Knowledge management has a positive relationship with customer performance.

P9. Customer performance has a positive relationship with FM organisational performance.

Synthesising literature from Adler *et al.* (1999), O’Reilly and Tushman (2008) and Kang and Snell (2009) explained that efficiency is way to exploit existing resources such as knowledge, financial, procedures and system to be more sufficient, and further will create a strong relationships with the organisational performance. Therefore, Pathirage *et al.* (2008) emphasise the needs of managing facilities knowledge to achieve better and efficient implementation in FM.

Research by Hsu and Sabherwal (2012) have developed a research model to examine the relationship between KM, efficiency and performance, but their study focussed on the causal effect of the financial profit to the efficiency of the organisations in Taiwan. Conversely, FM is not intended solely to obtain a business profit. FM laid much emphasis on management aspects such as to increase adaptability to changing business needs, to improve service quality, improving the productivity effectiveness among the employees and exploiting the potential of new technologies (Alexander, 2003). In addition, in the past few decades, the perception of using FM for the purpose of reducing cost has been shifted to enhance the strategic resources of an organisation and its stakeholders to contribute to an organisational performance (Anker Jensen *et al.*, 2014), and added value to the FM organisations

(Jensen, 2010). The stakeholders in FM organisation comprise of owners, staff, customers and society. Therefore, the nature of FM is more towards the non-financial aspects (Alexander, 2003). As such, this paper studied the relationship between KM, efficiency (non-financial) and FM organisational performance:

*P4.* Knowledge management has a positive relationship with efficiency.

*P10.* Efficiency has a positive relationship with FM organisational performance.

The relationship between IC or KM with innovation enables organisations to achieve new forms of competitive advantage (Subramaniam and Youndt, 2005; Ferraresi *et al.*, 2012; Hsu, 2008). According to Junnonen (2012), there are several benefits gained by the FM organisations in implementing continuous innovation process, such as competitiveness in changing environment of business, exceeding customer expectations and adding value to the core business of the customer.

Moreover, innovation has a strong relationship with dynamic capabilities (Kindström *et al.*, 2013; Rothaermel and Hess, 2007). Camisón and Monfort-Mir (2012) reported that dynamic capabilities of the organisation depend on the ability of an organisation to implement the innovation in their resource and capabilities, which are the process of the accumulation and the generation of new combinations of resources and capabilities. These processes also enable organisations not only to invent or refine and reinforce existing resources such as products and services but also to innovate profitably according to the needs in changing environment (Wang and Ahmed, 2007; Wu, 2006). Therefore, this paper studied the relationship between KM, innovation and FM organisational performance. In addition, this paper also studied the relationship between innovation and dynamic capabilities. Lee and Kelley (2008) emphasised that dynamic capabilities as an approach for accumulating and integrating resources to achieve innovative outcomes. The resources can be described as the accumulation of knowledge (intellectual capital). As such, Leonard-Barton (1992) contended that dynamic capabilities drive the organisation's ability to innovate to form a competitive advantage:

*P5.* Knowledge management has a positive relationship with innovation.

*P11.* Innovation has a positive relationship with FM organisational performance.

*P8.* Dynamic capabilities have a positive relationship with innovation.

The organisation can obtain sustainable competitive advantage by utilisation of KM through dynamic capabilities as mediating factor (Moustaghfir, 2009). KM shapes organisational operating routines directly by modifying operating routines effectively according to the environmental needs, to achieve better systematic approaches in operating routines (Zollo and Winter, 2002; Easterby-Smith and Prieto, 2008). This will create the dynamic capabilities. Further, KM enables the organisation to use existing knowledge to develop new ideas (Lee and Choi, 2003), which extensively rely on dynamic capabilities (Eisenhardt and Martin, 2000). Therefore, KM facilitates dynamic capabilities by enabling improvement processes and creating new knowledge that is needed to achieve a sufficient market orientation in changing environments:

*P6.* Knowledge management has a positive relationship with dynamic capabilities.

Further, Hsu and Wang (2012) contended that their research findings indicated a significant relationship between IC and dynamic capabilities. Their research also indicates that dynamic capabilities mediate the relationship between IC and organisational performance.



Moreover, Kang and Snell (2009) pointed out that the three components of IC, which are human, social and organisational capital, play unique roles in the learning process that facilitates ambidextrous learning. Consequently, ambidexterity is about doing exploration and exploitation that facilitate dynamic capabilities, specifically on how the organisation and its leaders are organised to sense and seize opportunities and their ability to reconfigure existing organisational assets (O'Reilly and Tushman, 2008; Eisenhardt and Martin, 2000). More skilled and experienced individuals (human capital) that have relationships with the organisation's ability to acquire new knowledge (Subramaniam and Youndt, 2005).

Furthermore, relational networks among employees provide a channel for knowledge exchange and accumulation of knowledge within the organisation (social capital), which is related to dynamic capabilities (Kang and Snell, 2009; Blyler and Coff, 2003). Moreover, dynamic capabilities create higher levels in knowledge development, which is in a form of processes, systems and structures (organisational capital) (Subramaniam and Youndt, 2005). Thus, the three components of IC contribute to processes that enable dynamic capabilities, such as product development and strategic decision-making (Eisenhardt and Martin, 2000). Therefore, organisations with better IC have greater dynamic capabilities because they are better able to manage their environments and respond and adapt to environmental change (Eisenhardt and Santos, 2002; Wu, 2007).

*P7.* Intellectual capital has a positive relationship with dynamic capabilities.

Drnevich and Kriauciunas (2011) contended that dynamic capabilities will improve response speed, effectiveness and innovation in processes, products and services with respect in dealing with environmental changes that can positively affect organisational performance. Therefore, this paper studied the relationship between KM, dynamic capabilities and FM organisational performance.

*P12.* Dynamic capabilities have a positive relationship with FM organisational performance.

Briefly, this paper is published with a purpose of filling the gaps between knowledge and organisational performance, especially in the FM organisational performance. This will develop a significant contribution to the literature in FM field. The discussion above has led to the development of the conceptual framework of this paper. Figure 1 shows the conceptual framework of this paper.

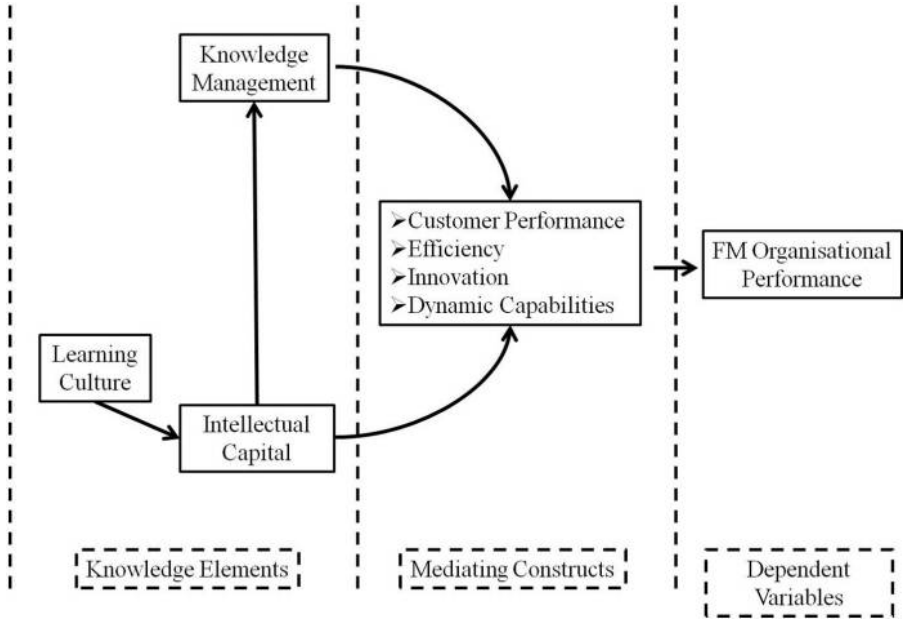
## 6. The proposed model and methodology

Based on the conceptual framework in Figure 1, this paper developed the proposed model by elaborating the potential relationships of each construct, as shown in Figure 2. Figure 2 shows the detailed proposed model of FM organisational performance.

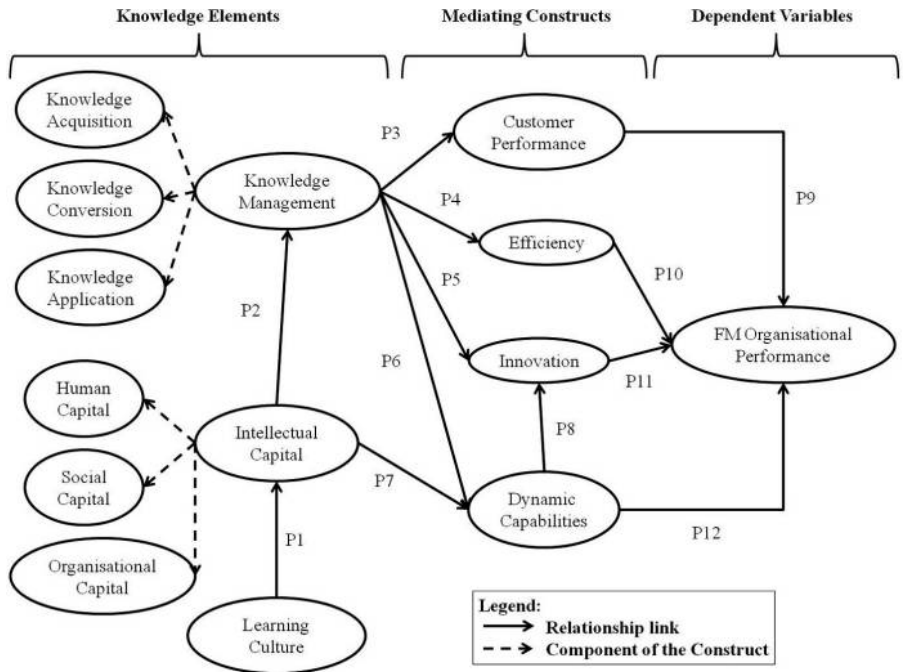
Pathirage *et al.* (2008) suggested the potential of IC and KM as an approach to explore the management of knowledge within the FM context. Based on the suggestion highlighted by Pathirage *et al.* (2008), this paper uses the constructs in knowledge elements (learning culture, IC and KM) and the mediating constructs (customer performance, efficiency, innovation and dynamic capabilities) in a relationship with FM organisational performance. The relationships shown in the proposed model clearly have not been studied in previous empirical research in the context of FM organisations. This study hopefully can make a valuable contribution to the body of knowledge by studying these relationships.

In the context of methodology assumptions, this research will apply a quantitative approach using deductive processes. In addition, this research choose the non-experimental study because the objectives of this research is to examine the relationships of the constructs

**Figure 1.**  
The conceptual framework: the relationships between knowledge elements, mediating constructs and FM organisational performance



**Figure 2.**  
The details proposed model with relationship links between knowledge elements, mediating constructs and FM organisational performance



in the proposed model of FM organisational performance. Furthermore, this research improves the existing model developed by Hsu and Sabherwal (2012) by developing a new dimension of the relationships between a group of constructs (knowledge elements, mediating constructs and FM organisational performance) in the model of FM organisational performance. The research conducted by Hsu and Sabherwal (2012) also using the quantitative approach.

The difference in relation with the process of research methodology between this research and research done by Hsu and Sabherwal (2012) is all constructs in this research will be measured using questionnaire survey, whereas research done by Hsu and Sabherwal (2012) have two constructs of efficiency and organisational performance that were measures using secondary data. Second, this research will conduct the pre-test procedures involving three types of procedures that involve panel of experts, personal interviews and planned survey (data collection). Whereas, research conducted by Hsu and Sabherwal (2012) using pre-test procedures through meetings that involving 12 academic domain experts and 12 senior managers from public listed company in Taiwan.

Moreover, from all strategies of inquiry in the qualitative approach, there is a possibility of conducting case study with aim of identifying the actual problem related to the managing knowledge in FM field. This research did not consider case study as a research methodology for several reasons. First, this research examines the relationships between constructs that have been empirically developed and tested in previous study (Hsu and Sabherwal, 2012; Peltier *et al.*, 2013). Therefore, there is no requirement to conduct a case study for the purpose of identifying relevant constructs to form a model.

Second, case study needs a groups of respondent whereby the researcher focuses on learning the meaning that the respondent hold about the problem or issue. The researcher collects data from the case study through observations or interviews. The issues arise when conducting the interviews because there is a possibility to obtain few participants from the facilities management organisation in Malaysia. Few participations will not efficiently represent the whole population of FM practitioners. Third, case study using inductive approach for the reason of low information of theory or literature reviews, whereas this research applied deductive approach, using the theories of RBV and KBV as the basis to operationalise the constructs through literature reviews.

This research can cover any country in Asia, but this research is more effective with investigating starting with Malaysia and concentrating on active practitioners in FM. The findings highlighted by Mustapa and Adnan (2008), Kamaruzzaman and Zawawi (2010), Myeda and Pitt (2014), whereby the lack of managing and applying FM knowledge base in Malaysia has resulted in lack of understanding and good practices in FM implementation. Therefore, it is highly recommended adopting the future research model with a wider sampling frame from other countries because different cultural contexts might influence the respondent's perceptions, attitudes and behaviours to view the relationships in the model of FM organisational performance.

## 7. Implications and future research

This research extends the prior research work (Pathirage *et al.*, 2008; Baharum and Pitt, 2009; Yiu, 2008; Gao and Cao, 2011) on finding the mediating constructs that mediate the relationships between knowledge and the organisational performance within the FM context. Moreover, an intensive review of literature did not reveal any study on the relationships of all the knowledge elements and mediating constructs tested simultaneously on the FM organisational performance. Therefore, it is possible to say that the previous findings may reflect non-specific organisations. Thus, this research is expected to bring a

new dimension result from the perspective of the implication of a group of constructs (knowledge elements, mediating constructs and the FM organisational performance).

Second, the proposed model would assist the FM organisation to use their resources more effectively to control or to improve their performance. In addition, the findings from this conceptual paper would contribute by providing insights in optimising the power of knowledge by bridging the gap towards the best performance in FM organisation especially in Malaysia.

This paper suggests for future research to implement the statistical testing for the proposed model on the mutual relationship between IC and KM; and other constructs such as efficiency, innovation, dynamic capabilities, customer performance and learning cultures that have relationships with the FM organisation performance. The results that would be achieved from the future analysis will be reviewed consistently with the prior literature. Also, with the validation of the proposed model, further explanation will be provided on the significant relationship between the knowledge elements, mediating constructs and FM organisational performance. The aim is to provide further understanding of the pattern of interrelationships among the knowledge elements, mediating constructs and FM organisational performance.

Finally, this study intends to examine the significance of the proposed model to the FM organisations in Malaysia. Thus, it would also suggest that there is a possibility in which the findings could be different when other cultural groups from FM organisations in other countries are considered. According to Myeda and Pitt (2014), besides Malaysia, several Asian countries such as Japan, Hong Kong, Korea and Singapore have also shown a positive growth in the FM field.

## 8. Conclusion

The current situation obviously leverages the importance of using knowledge through the identification of the mediating constructs that have relationships with the FM organisational performance. This research proposed an area of research within epistemology that is related to FM. Also, there will be an empirical testing for a comprehensive model on the mutual relationship (Awang and Ariffin, 2012) between all constructs in the model of FM organisational performance. Thus, this research's aim is to improve the existing model developed by Hsu and Sabherwal (2012) by developing a new dimension of the relationships between a group of constructs (knowledge elements, mediating constructs and FM organisational performance) in the model of FM organisational performance. The results from the future analysis will be reviewed as to whether the model is consistent with the discussion in the prior literature. Thus, the findings from this research will provide insights on optimising the power of knowledge by bridging the gap towards the best performance in FM organisation.

## References

- Abu-jarad, I.Y., Yusof, N.A. and Nikbin, D. (2010), "A review paper on organizational culture and organizational performance", *International Journal of Business and Social Science*, Vol. 1 No. 3, pp. 26-47.
- Adler, P.S., Goldoftas, B. and Levine, D.I. (1999), "Flexibility versus efficiency? A case study of model changeovers in the toyota production system", *Organization Science*, Vol. 10 No. 1, pp. 43-68.
- Alavi, M. and Leidner, D.E. (2001), "Knowledge management and knowledge management systems: conceptual foundations and research issues", *MIS Quarterly*, Vol. 25 No. 1, pp. 107-136.
- Alexander, K. (2003), "A strategy for facilities management", *Facilities*, Vol. 21 Nos 11/12, pp. 269-274.

- Alexander, K. and Nielsen, S.B. (2012), *How to Increase the Usability of Academic FM Research for Practitioners?*, A EuroFMPublication-INSIGHT, Vol. 23, pp. 1-14.
- Amaratunga, D. and Baldry, D. (2002), "Moving from performance measurement to performance management", *Facilities*, Vol. 20 Nos 5/6, pp. 217-223.
- Amit, R. and Schoemaker, P.J.H. (1993), "Strategic assets and organizational rent", *Strategic Management Journal*, Vol. 14 No. 1, pp. 33-46.
- Andreeva, T. and Kianto, A. (2012), "Does knowledge management really matter? Linking knowledge management practices, competitiveness and economic performance", *Journal of Knowledge Management*, Vol. 16 No. 4, pp. 617-636.
- Anker Jensen, P., Van der Voordt, J.M.T. and Coenen, C. (2014), "Reflecting on future research concerning the added value of FM", *Facilities*, Vol. 32 Nos 13/14, pp. 856-870.
- Awang, Z. and Ariffin, J.T. (2012), *Research Proposal: A Comprehensive Guide in Writing a Research Proposal*, UiTM Press, Selangor.
- Baharum, M.R. and Pitt, M. (2009), "Determining a conceptual framework for green FM intellectual Capital", *Journal of Facilities Management*, Vol. 7 No. 4, pp. 267-282.
- Barney, J. (1991), "Firm resources and sustained competitive advantage", *Journal of Management*, Vol. 17 No. 1, pp. 99-120.
- Bierly, P. and Chakrabarti, A. (1996), "Generic knowledge strategies in the US pharmaceutical industry", *Strategic Management Journal*, Vol. 17 No. 2, pp. 123-135.
- Blyler, M. and Coff, R.W. (2003), "Dynamic capabilities, social capital, and rent appropriation: ties that split pies", *Strategic Management Journal*, Vol. 24 No. 7, pp. 677-686.
- Bontis, N. (1998), "Intellectual capital: an exploratory study that develops measures and models", *Management Decision*, Vol. 36 No. 2, pp. 63-76.
- Camisón, C. and Monfort-Mir, V.M. (2012), "Measuring innovation in tourism from the schumpeterian and the dynamic-capabilities perspectives", *Tourism Management*, Vol. 33 No. 4, pp. 776-789.
- Chen, Y.-Y. (2012), "Does knowledge management 'fit' matter to business performance?", *Journal of Knowledge Management*, Vol. 16 No. 5, pp. 671-687.
- Decarolis, D.M. and Deeds, D.L. (1999), "The impact of stocks and flows of organizational knowledge on firm performance: an empirical investigation of the biotechnology industry", *Strategic Management Journal*, Vol. 20 No. 10, pp. 953-968.
- Delaney, J.T. and Huselid, M.A. (1996), "The impact of human resource management practices on perceptions of organizational performance", *Academy of Management Journal*, Vol. 39 No. 4, pp. 949-969.
- Donate, M.J. and Canales, J.I. (2012), "A new approach to the concept of knowledge strategy", *Journal of Knowledge Management*, Vol. 16 No. 1, pp. 22-44.
- Drnevich, P.L. and Kriauciunas, A.P. (2011), "Clarifying the conditions and limits of the contributions of ordinary and dynamic capabilities to relative firm performance", *Strategic Management Journal*, Vol. 32 No. 3, pp. 254-279.
- Easterby-Smith, M. and Prieto, I.M. (2008), "Dynamic capabilities and knowledge management: an integrative role for learning?\*", *British Journal of Management*, Vol. 19 No. 3, pp. 235-249.
- Eisenhardt, K.M. and Martin, J.A. (2000), "Dynamic capabilities: what are they?", *Strategic Management Journal*, Vol. 21 Nos 10/11, pp. 1105-1121.
- Eisenhardt, K.M. and Santos, F.M. (2002), "Knowledge-based view: a new theory of strategy?", in Pettigrew, A., Thomas, H. and Whittington, R. (Eds), *Handbook of Strategy & Management*, SAGE Publication, pp. 139-166.
- Ferraresi, A.A., Quandt, C.O., Dos santos, S.A. and Frega, J.R. (2012), "Knowledge management and strategic orientation: leveraging innovativeness and performance", *Journal of Knowledge Management*, Vol. 16 No. 5, pp. 688-701.

- Firdauz, A.M., Sapri, M. and Mohammad, I.S. (2015), "Facility management knowledge development in Malaysia: added value in hospitality managerial competency", *Facilities*, Vol. 33 Nos 1/2, pp. 99-118.
- Gao, X. and Cao, J. (2011), *The Research of Facility Management Based on Organization Strategy Perspective*, Springer, Vol. 4, pp. 161-167.
- Gold, A.H., Malhotra, A. and Segars, A.H. (2001), "Knowledge management: an organizational capabilities perspective", *Journal of Management Information Systems*, Vol. 18 No. 1, pp. 185-214.
- Grant, R.M. (1996), "Prospering in dynamically environments: organizational capability as knowledge integration", *Organization Science*, Vol. 7 No. 4, pp. 375-387.
- Grant, R.M. (1997), "The knowledge-based view of the firm: implications for management practice", *Long Range Planning*, Vol. 30 No. 3, pp. 450-454.
- Gupta, B., Iyer, L.S. and Aronson, J.E. (2000), "Knowledge management: practices and challenges", *Industrial Management & Data Systems*, Vol. 100 No. 1, pp. 17-21.
- Hooley, G.J., Greenley, G.E., Cadogan, J.W. and Fahy, J. (2005), "The performance impact of marketing resources", *Journal of Business Research*, Vol. 58 No. 1, pp. 18-27.
- Hsu, I. and Sabherwal, R. (2011), "From intellectual capital to firm performance: the mediating role of knowledge", *IEEE Transactions on Engineering Management*, Vol. 58 No. 4, pp. 626-642.
- Hsu, I.-C. (2008), "Knowledge sharing practices as a facilitating factor for improving organizational performance through human capital: a preliminary test", *Expert Systems with Applications*, Vol. 35 No. 3, pp. 1316-1326.
- Hsu, I.-C. and Sabherwal, R. (2012), "Relationship between intellectual capital and knowledge management: an empirical investigation", *Decision Sciences*, Vol. 43 No. 3, pp. 489-524.
- Hsu, L.-C. and Wang, C.-H. (2012), "Clarifying the effect of intellectual capital on performance: the mediating role of dynamic capability", *British Journal of Management*, Vol. 23 No. 2, pp. 179-205.
- Huang, C.F. and Hsueh, S.L. (2007), "A study on the relationship between intellectual capital and business performance in the engineering consulting industry: a path analysis", *Journal of Civil Engineering and Management*, Vol. 13 No. 4, pp. 265-271.
- IFMA (2009), "What is FM - definition of facility management what is facility management?", available at: [www.ifma.org/about/what-is-facility-management](http://www.ifma.org/about/what-is-facility-management)
- Iii, H.A.N. (2012), "Linking knowledge processes with firm performance: organizational culture", *Journal of Intellectual Capital*, Vol. 13 No. 1, pp. 16-38.
- Jensen, P.A. (2010), "The facilities management value map: a conceptual framework", *Facilities*, Vol. 28 Nos 3/4, pp. 175-188.
- Junnonen, J. (2012), "Factors affecting service innovations in FM service sector", *Facilities*, Vol. 30 Nos 11/12, pp. 517-530.
- Kamaruzzaman, S.N. and Zawawi, E.M.A. (2010), "Development of facilities management in Malaysia", *Journal of Facilities Management*, Vol. 8 No. 1, pp. 75-81.
- Kamaruzzaman, S.N., Zawawi, E.M.A., Shafie, M.O. and Mohd Noor, S.N.A. (2016), "Assessing the readiness of facilities management organizations in implementing knowledge management systems", *Journal of Facilities Management*, Vol. 14 No. 1, pp. 69-83.
- Kang, S.-C. and Snell, S.A. (2009), "Intellectual capital architectures and ambidextrous learning: a framework for human resource management", *Journal of Management Studies*, Vol. 46 No. 1, pp. 65-92.
- Katou, A.A. and Budhwar, P.S. (2012), "The link between HR practices, psychological contract fulfillment, and organizational performance: the case of the greek service sector", *Thunderbird International Business Review*, Vol. 54 No. 6, pp. 793-809.
- Kim, H.-S. and Kim, Y.-G. (2009), "A CRM performance measurement framework: its development process and application", *Industrial Marketing Management*, Vol. 38 No. 4, pp. 477-489.

- Kindström, D., Kowalkowski, C. and Sandberg, E. (2013), "Enabling service innovation: a dynamic capabilities approach", *Journal of Business Research*, Vol. 66 No. 8, pp. 1063-1073.
- Kong, E. and Thomson, S.B. (2009), "An intellectual capital perspective of human resource strategies and practices", *Knowledge Management Research & Practice*, Vol. 7 No. 4, pp. 356-364.
- Lee, H. and Choi, B. (2003), "Knowledge management enablers, processes, and organizational performance: an integration and empirical examination", *Journal of Management Information Systems*, Vol. 20 No. 1, pp. 179-228.
- Lee, H. and Kelley, D. (2008), "Building dynamic capabilities for innovation: an exploratory study of key management practices", *R&D Management*, Vol. 38 No. 2, pp. 155-168.
- Leonard-Barton, D. (1992), "Core capabilities and core rigidities: a paradox in managing new product development", *Strategic Management Journal*, Vol. 13 No. 1, pp. 111-125.
- Levitt, B. and March, J.G. (1988), "Organizational learning", *Annual Review of Sociology*, Vol. 14 No. 1, pp. 319-338.
- Marr, B., Gupta, O., Pike, S. and Roos, G. (2003), "Intellectual capital and knowledge management effectiveness", *Management Decision*, Vol. 41 No. 8, pp. 771-781.
- Moustaghfir, K. (2009), "How knowledge assets lead to a sustainable competitive advantage: are organizational capabilities a missing link?", *Knowledge Management Research & Practice*, Vol. 7 No. 4, pp. 339-355.
- Mustapa, S.A.H.S. and Adnan, H. (2008), "Facility management challenges and opportunities in the Malaysian property sector", *Journal of Sustainable Development*, Vol. 1 No. 2, pp. 79-85.
- Myeda, N.E. and Pitt, M. (2014), "Facilities management in Malaysia understanding the development and practice", *Facilities*, Vol. 32 Nos 9/10, pp. 490-508.
- Newbert, S.L. (2008), "Value, rareness, competitive advantage, and performance: a conceptual-level resource-based view of the firm", *Strategic Management Journal*, Vol. 29 No. 7, pp. 745-768.
- Nonaka, I. (1994), "A dynamic theory of organizational knowledge creation", *Organization Science*, Vol. 5 No. 1, pp. 14-37.
- Nonaka, I. and Takeuchi, H. (1995), *The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation*, Oxford University Press, New York, NY.
- Nutt, B. (2000), "Four competing futures for facility management", *Facilities*, Vol. 18 Nos 3/4, pp. 124-132.
- O'Reilly, C.A. and Tushman, M.L. (2008), "Ambidexterity as a dynamic capability: resolving the innovator's dilemma", *Research in Organizational Behavior*, Vol. 28, pp. 185-206.
- Pathirage, C., Haigh, R., Amaratunga, D. and Baldry, D. (2008), "Knowledge management practices in facilities organisations: a case study", *Journal of Facilities Management*, Vol. 6 No. 1, pp. 5-22.
- Peltier, J.W., Zahay, D. and Lehmann, D.R. (2013), "Organizational learning and CRM success: a model for linking organizational practices, customer data quality, and performance", *Journal of Interactive Marketing*, Vol. 27 No. 1, pp. 1-13.
- Rothaermel, F.T. and Hess, A.M. (2007), "Building dynamic capabilities: innovation driven by individual-, firm-, and network-level effects", *Organization Science*, Vol. 18 No. 6, pp. 898-921.
- Saarenketo, S., Puumalainen, K., Kuivalinen, O. and Kylaheiko, K. (2009), "A knowledge-based view of growth in new ventures", *European Business Review*, Vol. 21 No. 6, pp. 531-546.
- Santos-Vijande, M.L., López-Sánchez, J.Á. and Trespalacios, J.A. (2012), "How organizational learning affects a firm's flexibility, competitive strategy, and performance", *Journal of Business Research*, Vol. 65 No. 8, pp. 1079-1089.
- Shieh, C.-J. (2011), "Study on the relations among the customer knowledge management, learning organization, and organizational performance", *The Service Industries Journal*, Vol. 31 No. 5, pp. 791-807.
- Siggelkow, N. (2002), "Evolution toward fit", *Administrative Science Quarterly*, Vol. 47 No. 1, pp. 125-159.

- Spender, J. and Grant, R.M. (1996), "Special issue-knowledge and the firm overview\_spender&grant\_1996.pdf", *Strategic Management Journal*, Vol. 17, pp. 5-9.
- Subramaniam, M. and Youndt, M.A. (2005), "The influence of intellectual capital on the types of innovative capabilities", *Academy of Management Journal*, Vol. 48 No. 3, pp. 450-463.
- Taher, M. (2012), "Resource-based view theory", in Dwivedi, Y.K., Wade, M.R. and Schneberger, S.L. (Eds), *Information Systems Theory: Explaining and Predicting Our Digital Society Integrated Series in Information Systems 28*, Springer, New York, NY, Vol. 1, pp. 151-163.
- Tucker, M. and Pitt, M. (2009), "Customer performance measurement in facilities management: a strategic approach", *International Journal of Productivity and Performance Management*, Vol. 58 No. 5, pp. 407-422.
- Van De Voorde, K., Paauwe, J. and Van Veldhoven, M. (2012), "Employee well-being and the HRM-organizational performance relationship: a review of quantitative studies", *International Journal of Management Reviews*, Vol. 14 No. 4, pp. 391-407.
- Venkatraman, N. and Ramanujam, V. (1986), "Measurement of business performance in strategy research: a comparison of approaches", *Academy of Management Review*, Vol. 11 No. 4, pp. 801-814.
- Wang, C.L. and Ahmed, P.K. (2007), "Dynamic capabilities: a review and research agenda", *International Journal of Management Reviews*, Vol. 9 No. 1, pp. 31-51.
- Wiig, K.M. (1997), "Integrating intellectual capital and knowledge management", *Long Range Planning*, Vol. 30 No. 3, pp. 323-405.
- Wu, L.-Y. (2006), "Resources, dynamic capabilities and performance in a dynamic environment: perceptions in Taiwanese IT enterprises", *Information & Management*, Vol. 43 No. 4, pp. 447-454.
- Wu, L.-Y. (2007), "Entrepreneurial resources, dynamic capabilities and start-up performance of Taiwan's high-tech firms", *Journal of Business Research*, Vol. 60 No. 5, pp. 549-555.
- Yiu, C.Y. (2008), "A conceptual link among facilities management, strategic management and project management", *Facilities*, Vol. 26 Nos 13/14, pp. 501-511.
- Youndt, M.A., Subramaniam, M. and Snell, S.A. (2004), "Intellectual Capital profiles: an examination of investments and returns", *Journal of Management Studies*, Vol. 41 No. 2, pp. 335-361.
- Zahay, D., Peltier, J. and Krishen, A.S. (2012), "Building the foundation for customer data quality in CRM systems for financial services firms", *Journal of Database Marketing & Customer Strategy Management*, Vol. 19 No. 1, pp. 5-16.
- Zollo, M. and Winter, S.G. (2002), "Deliberate learning and the evolution of dynamic capabilities", *Organization Science*, Vol. 13 No. 3, pp. 339-351.

#### Corresponding author

Maimunah Sapri can be contacted at: [maimunahsapri@utm.my](mailto:maimunahsapri@utm.my)

---

For instructions on how to order reprints of this article, please visit our website:

[www.emeraldgroupublishing.com/licensing/reprints.htm](http://www.emeraldgroupublishing.com/licensing/reprints.htm)

Or contact us for further details: [permissions@emeraldinsight.com](mailto:permissions@emeraldinsight.com)