

# The Implementation of Organizational Learning and Knowledge Management Towards Organizational Growth Performance

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**ABSTRACT:** This paper investigates the relationship between knowledge management, organizational learning, and growth performance in Malaysian construction firms. Postal questionnaires were mailed to 500 large construction companies (CIDB grade G7). Only 110 out of 500 distributed questionnaires were returned, completed, and usable. The obtained data was analyzed through partial least squares structural equation modelling using SmartPLS software, followed by the development of SPSS macros for mediation analysis. This study discovered that knowledge management, organizational learning, and growth performance have a significant relationship. Organizational learning partially mediates the relationship between knowledge management and growth performance, according to the findings. The findings of this study provide solid evidence that organizational learning improves growth performance via knowledge management initiatives.

**Keywords:** Knowledge Management, Growth Performance, Organization Learning, Construction Companies, Construction Industry

## 1. Introduction

Knowledge is a vital resource for a company as a strategic asset in facing the complex challenges in today's environment, such as globalisation, internalisation of markets, liberalisation of trade, deregulation, and the knowledge economy (Hari et al., 2005), in order to remain relevant, competent, and active in the industry. Industry expansion is the primary objective of the majority of businesses. Growth of a company is frequently equated with business success (Baum, Locke, & Smith, 2001), and growing companies are found to have significant advantages in terms of both internal operations and external environments. However, growth does not occur naturally and must be strategically planned and effectively implemented by organisations (Penrose, 1959). In many nations, the government plays an important role in fostering the growth and development of all industries, including the construction sector (Abu Bakar et al. 2011). Although government initiatives may help companies improve their growth performance, they are not the best option for top management to consider. Knowledge is one of the most important factors influencing growth performance (Hlupic, 2003; Macpherson and Holt, 2007; Pathirage et al., 2007; Abu Bakar et al., 2011). If the company wishes to be dynamic, competitive,

and successful in the business environment, knowledge is crucial. In the construction industry, tacit knowledge is the predominant form of knowledge (Esmi and Ennals, 2009). Know-where, know-who, know-what, know-when, and know-why are its applications. Numerous researchers have acknowledged that companies' knowledge is a valuable asset (Grant, 1996; Spender, 1996; Pathirage et al., 2007). Unfortunately, however, construction companies are losing their knowledge. This is due to the fact that knowledge is retained within the mind of the individual and not disseminated. As a project-based industry, construction firms lose valuable intellectual assets when employees leave because employees are more loyal to the project than to the company (Esmi and Ennals, 2009).

Knowledge Management is widely acknowledged by both academics and practitioners as a mechanism that should be implemented in organisations. Liao and Wu (2010) discovered empirically that the implementation of knowledge management can have a greater impact within an organisation if organisational learning is incorporated into its strategic plan. Alavi et al. (2010) identified the connections between knowledge management and organisational learning, and both interactions are crucial for enhancing the performance of an organisation. Liao and Wu (2009) confirmed that knowledge management and organisational learning are interrelated and discovered that organisational learning mediates the connection between knowledge management and partnership performance.

Grant, 1996; Lei et al., 1996; Simonin, 1997; Fong and Choi, 2009) suggest that organisational learning is a process that plays an important role in enhancing a company's capability and competitive advantage and that may benefit from the implementation of knowledge management. It has been demonstrated that organisational learning mediates the relationship between information technology, competency, and company performance (Tippins and Sohi, 2003), knowledge management and organisational performance (Liao and Wu, 2009; Lee et al., 2012), and knowledge management and innovation (Liao and Wu, 2010). This paper investigates the role of organisational learning as a mediator between knowledge management and growth performance in construction companies in order to confirm this role.

## 2. KNOWLEDGE MANAGEMENT

Knowledge management was introduced more than two decades ago to assist businesses in the systematic creation, sharing, and application of knowledge. Knowledge management is the identification, optimisation, and active management of intellectual assets in order to create value, increase productivity, and achieve and maintain competitive advantage (Webb, 1998). It is also the process of identifying/creating, assimilating, and applying organisational knowledge to exploit new opportunities and improve organisational performance (Yang, 2011). Gold et al. (2001) define the knowledge management process as a coordinated structure for effectively managing knowledge. There is no universally accepted knowledge management methodology. Several key aspects of the knowledge management process, including knowledge acquisition, knowledge conversion, knowledge application, and knowledge protection, have been identified by previous researchers (Gold et al., 2001, Liao & Wu, 2009). These parameters best characterise KM processes as the minimal set of knowledge management activities (Gold et al., 2001; Liao & Wu, 2009) and have been adopted by subsequent studies, including those in the construction industry.

The incorporation of KM into the business world has benefited organisations that employ this mechanism for strategic planning. The implementation of KM provides numerous benefits for organisations. According to a survey conducted by McAdam and McCreedy (1999), the perceived benefits of KM include enhanced quality, increased efficiency, management learning, and decreased costs. The perceived benefits relate to enhancing internal efficiency within the organisations, as well as enhancing consistency and competitiveness by reducing costs associated with efficiency. According to Ng (2005), KM can achieve operational excellence. This is due to the fact that all employees are able to share their knowledge, which will translate into lessons learned for both internal and external application, such as sharing past errors to prevent similar errors in the future. KM can improve customer responsiveness by providing customers with consistent and professional service standards. Additionally, KM can encourage employees to be more innovative when sharing knowledge. In their knowledge-sharing sessions, fresh ideas will be generated.

In the construction industry, the significance of KM has increased over the past decade. Several research projects focusing on various facets of KM have been conducted. Some researchers have concentrated on the human and organisational aspects of KM, while others have sought to develop technologically advanced tools to facilitate KM. Some have researched the necessary mechanisms for integrating and deploying both human-centered strategies and technological solutions in tandem. It is now widely acknowledged that this integrated strategy offers the greatest potential to deliver tangible benefits.

### **3. KNOWLEDGE MANAGEMENT IN THE CONSTRUCTION INDUSTRY**

In the construction industry, tacit rather than explicit knowledge comprises the majority of organisational knowledge. According to Tupenaite et al. (2008), construction company employees prefer to rely on their prior experience and the guidance of mentors rather than on written standard procedures or secondary materials such as textbooks, reports, etc. When an employee in the construction industry relocates, resigns, or retires, the organisation loses a significant amount of its institutional knowledge. In addition, the construction industry is not known for appreciating its employees' contributions (Carillo et al., 2000), which has impeded the sharing of knowledge.

The collective knowledge within construction companies is the result of years of business operation and experience, combined with the knowledge created by individuals and teams (Kogut and Zander, 1996). Construction companies have been managing knowledge informally for years, but the challenges facing the industry today necessitate a more structured and consistent approach to knowledge management from the majority of organisations (Payne and Sheehan, 2004). Knowledge management is a mechanism of organisational strategies and practises that is crucial to the expansion of construction companies. Companies within the construction industry criticised this mechanism more than a decade ago, but it is now widely acknowledged that knowledge management can bring about much-needed innovation and enhanced business performance (Webb, 1998; Egbu et al. 1999, Riebeiro, 2009). Effective knowledge management is recognised as a means for an organisation to address its need for innovation and enhanced business performance, according to Kamara et al. Multiple studies indicate that the business performance of a company is dependent on the effectiveness of its knowledge management (Davenport and Prusak, 1998; Nonaka and Takeuchi, 1995).

Consider the construction industry to be a knowledge-based industry (Gillingham and Roberts, 2006; Esmi and Ennals, 2009). To satisfy stakeholder expectations and requirements, the majority of construction projects require diverse ideas, knowledge, and experience. The majority of construction companies are engaged in multiple projects concurrently, and project management teams must improve project management effectiveness by utilising tools that facilitate knowledge sharing and dynamic adaptation and application of that knowledge (Grisham and Walker, 2006). Knowledge may not be captured and shared in a project because it is buried in unread reports or an outdated filing system, or because individuals move from one project to another and work with different partners. This results in wasted effort and diminished project performance (Carillo et al., 2000). Each new construction project is viewed as a separate assignment, and there is little awareness of the lessons that could be drawn from previous construction projects (Atkin et al. 2003). It is a sign of ineffective knowledge management when there is a significant amount of rework, delays, repetition of past errors, and cost overruns (Anumba et al., 2005). Construction workers' knowledge and expertise are regarded as a valuable asset for growth performance. Thus, by integrating and managing knowledge systematically in the construction industry, the growth performance of construction companies could be enhanced.

#### **4. GROWTH PERFORMANCE**

Various authors have proposed different growth performance indicators for companies. As a result of the correlation between profitability and growth, Singh and Whittington (1968) concluded that growth should be measured in terms of net assets. According to Hillebrandt and Cannon (1990), a construction company's growth can be measured by its assets, corporate turnover, profits, number of employees, and number of shares outstanding. Literature reveals that the majority of researchers used the number of employees and the company's revenue in their studies (Hillebrandt and Cannon, 1990; Abu Bakar, 1993; Watt et al., 1998). Prior to 1959, numerous indicators were proposed to measure growth performance, including revenue, number of employees, total assets, profits, market capitalisation, and many others. However, according to Penrose (1959), there is no method for measuring the rate of expansion or the size of a company that is not subject to serious conceptual objections. According to the most prevalent indicators used by researchers as a foundation for their theories (Abu Bakar et al., 2011). This study measures growth performance based on two indicators: turnover and employee count. Within the construction industry, these two indicators are the most popular method for measuring growth performance because they clearly define a company's size and the data is readily available to all companies participating in the research (Abu Bakar et al., 2011). Employment is the most appropriate metric for measuring the size of an organisation, according to Child (1973), because it is primarily people who are "organised."

#### **5. ORGANISATIONAL LEARNING AS MEDIATOR**

Jerez-Gómez et al. (2005) cite organisational learning as a key indicator of an organization's effectiveness and capacity for innovation and expansion. It has the ability to influence inventiveness and problem-solving (Senge, 1990), as well as organisational behaviour, culture, and productivity (Levitt & March, 1988). Organizational learning can occur at various levels and speeds. According to Crossan et al. (1999), organisational learning is a dynamic process based on the movement of knowledge between different levels of company activities, from the individual level to the group level to the organisational level and back again. The effective development of organisational learning necessitates four conditions: the support of top management, the existence of a collective conscience,

the growth of organisational knowledge, and the organisation's capacity to go beyond adaptive learning (Jerez-Gomez et al., 2005).

A mediator is a variable that facilitates the relationship between two variables (Baron and Kenny, 1986). The most common theoretical application of mediation is to explain why a relationship exists between an independent and dependent construct (Hair et al., 2013). Multiple researchers have argued that organisational learning (OL) is a crucial factor in a company's performance improvement (Brockmand and Morgan, 2003; Dodgson, 1993; Nevis et al., 1995). Learning-capable businesses have a greater chance of detecting market events and trends (Tippins and Sohi, 2003). Consequently, learning organisations are typically more adaptable and quicker to respond to new challenges than their rivals (Day, 1994; Slater and Narver, 1994), allowing them to sustain long-term performance (Dickson, 1996).

In recent years, the use of organisational learning as a mediator in research has increased exponentially (Lin & Kuo, 2007; Liao & Wu, 2010). In various theoretical models, organisational learning has been utilised as a mediator, and the majority of the results indicate that it plays a significant role as a mediator. Liao and Wu (2010) found that organisational learning significantly mediates the relationship between knowledge management and organisational innovation in their model of organisational innovation. According to Liao and Wu (2010), KM will have a greater impact on organisational innovation by using organisational learning as an intervening variable. Liao and Wu (2010) added that if an organisation disregards organisational learning, knowledge management by itself will not directly promote organisational innovation.

Other studies also confirm the mediating role of organisational learning. Liao and Wu (2009) discovered that organisational learning mediates the connection between knowledge management and partnership performance. Liao and Wu (2009) recommended that managers develop OL in order to establish a link between KM and partnership performance. Tippins and Sohi (2003) state that organisational learning mediates the relationship between IT competency and business performance. Su et al. (2004) also discovered that OL plays an important role as a mediator variable in the relationship between KM flow factors and KM flows. Darroch (2005) also discovered that knowledge management had a greater indirect influence on organisational performance than a direct influence, indicating that there is a missing variable that could have a greater impact on the relationship between knowledge management and organisational performance.

## 6. RESEARCH MODEL

The knowledge-based perspective (KBV) highlights the research model in this article (Grant, 1996). The knowledge-based perspective regards a company's knowledge as a valuable resource that can be utilised to improve performance (Gillingham and Roberts, 2006). The dependent variable of growth performance is the primary variable of interest in this study. Knowledge management is the independent variable that may influence the dependent variable. Knowledge Management is comprised of four dimensions: knowledge acquisition, knowledge conversion, knowledge application, and knowledge protection (Gold et al., 2001). In this study, the mediating variable is organisational learning. Four elements comprise organisational learning: management commitment, system perspective, openness and experimentation, and transfer of knowledge. The organisational learning

elements were adapted from Jerez-Gomez et al (2005). Figure 1 depicts the interrelationships between the constructs.

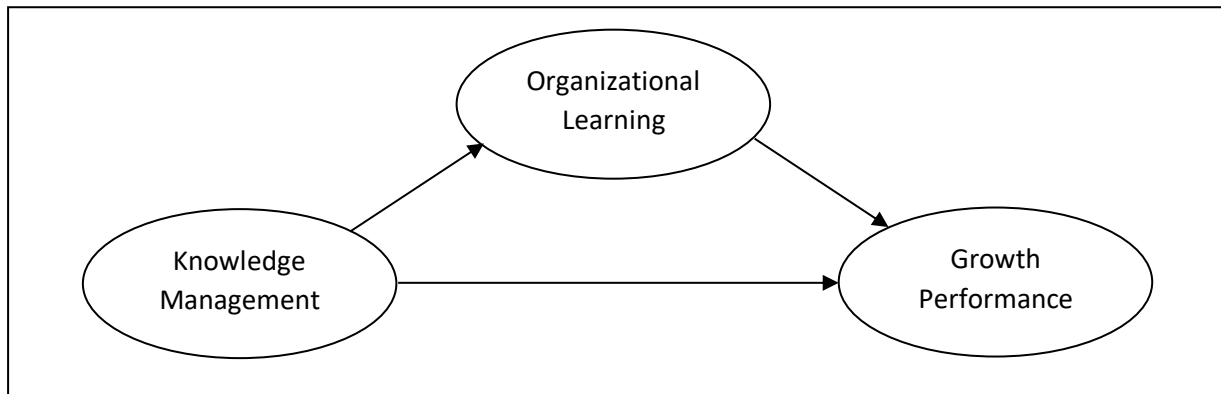


Figure 1. Research Model

## 7. METHODOLOGY

This survey was used to collect primary data from Grade G7 construction companies listed by the Construction Industry Development Board (CIDB) in Malaysia. The questionnaires were distributed to 500 companies, and 110 valid responses were received. The questionnaire included four sections: (1) demographic data, (2) growth performance, (3) knowledge management processes, and (4) organisational learning processes. The collected data was processed and analysed using SmartPLS 2.0 M2 software and partial least-squares (PLS) path modelling (Ringle et al., 2005). This method was chosen because it is suitable for exploratory studies like this one, in which hypothesised relationships between variables have not been tested (Ainuddin et al., 2007).

## 8. ANALYSIS

### Respondent's Profile

The survey was only sent to large (G7) construction firms in Malaysia. Many of the respondents (29%) indicated that they were Project Managers. 26% of respondents were managing directors, the second highest proportion. Executive Managers (14%) and General Managers (2%) also held positions. The majority of respondents (45%) held a Bachelor's degree, while 11% held a Master's degree. Many respondents (47%) have 11–15 years of experience in the construction industry. 33% have worked for greater than fifteen years, 15% for less than five years, and 6% for six to ten years. Consequently, it is evident that the majority of respondents in this study were educated, experienced, and held top management positions directly involved in their respective companies' strategies.

### Partial Least Squares

The paper used Structural Equation Modelling (SEM) as its primary statistical method to generate findings from collected data. SEM is used to explain the relationship between measured variables and latent variables, as well as the relationship between latent variables. According to Chin et al. (2003), SEM gives researchers the flexibility to perform any of the following tasks: model relationships among multiple predictor and criterion variables; construct unobservable latent variables; model errors in measurements for observed variables; statistically test a theoretical and measurement assumption against empirical data. The PLS method and structural equation modelling software (SmartPLS 2.0) (Ringle et al., 2005) were used to analyse the data, as the objective of this study was to predict key

target constructs or identify "driver" constructs (Hair, Ringle, & Sarstedt, 2011). Below are specifics regarding the SEM analysis:

### Measurement Model

The validity and reliability of the measurement model were the two primary evaluation criteria. Reliability is a test of how consistently an instrument measures the concept it is intended to measure, whereas validity is a test of how accurately an instrument measures the concept it is intended to measure (Sekaran and Bougie, 2010). This study was based on two methods of validity: convergent and discriminant validity.

### Analysis of convergent validity and reliability

Cronbach's alpha was the coefficient used to evaluate the measurement items' internal consistency. Table 1 provides a summary of the Cronbach's alpha values, which were all greater than 0.7, as reported by Nunnally (1978) and Nunnally and Berstein (1981). (1994). Consequently, the measurements were accurate. Table 1 also displays convergent validity, or the degree to which multiple items measuring the same concept concur. The tests used composite reliability (CR) and average variance extracted (AVE) to evaluate convergence validity (Hair et al., 2010). Composite reliability, the extent to which construct indicators represent latent constructs, ranged from 0.818 to 0.954 (Table 1), exceeding the recommended value of 0.7. (Hair et al., 2010). To justify the use of a construct, the AVE, which measures the variance captured by indicators relative to measurement error, must exceed 0.50. (Barclay et al., 1995). The AVE varied between 0.597 and 0.704. The results demonstrated that all observable variables were suitable for further investigation.

Table 1. Convergent validity and reliability

Construct	AVE <sup>a</sup>	CR	Cronbach's Alpha	Number of Item
Knowledge Acquisition	0.597	0.930	0.915	9 (12)
Knowledge Conversation	0.604	0.932	0.918	9 (10)
Knowledge Application	0.597	0.942	0.932	11 (12)
Knowledge Protection	0.697	0.954	0.945	9 (10)
Managerial Commitment	0.644	0.844	0.724	3 (5)
System Perspective	0.653	0.850	0.734	3 (3)
Openness and Experimentation	0.600	0.818	0.713	3 (4)
Knowledge Transfer and Integration	0.704	0.877	0.789	3 (4)

### Discriminant validity

Discriminant validity refers to the degree to which each model construct is truly distinct from the other model constructs. It determines whether a concept is unique and distinct from other concepts' measures (Bagozzi et al., 1991). All of the constructs' discriminant validity were evaluated. The assessment of discriminant validity based on the Fornell-Larcker criterion is presented in Table 2. The Fornell-Larcker criterion compares the square root of the AVE value to the correlations between latent variables. In particular, the square root of each construct's AVE should be greater than its highest correlation with any other construct (Hair et al., 2013). Table 2 demonstrates that in every instance the root AVE values were greater than the corresponding off-diagonal correlations, indicating the validity of the discriminant (Hair et al., 2013). Overall, the measurement model's convergent and discriminant validity were adequate.

Table 2. Discriminant Validity (Fornell-Larcker Criterion)

	GP	KAP	KA	KC	KP	MC	OE	SP	TI
GP	<b>0.987</b>								
KAP	0.539	<b>0.773</b>							
KA	0.532	0.759	<b>0.773</b>						
KC	0.540	0.725	0.766	<b>0.777</b>					
KP	0.499	0.626	0.547	0.638	<b>0.835</b>				
MC	0.587	0.384	0.387	0.409	0.283	<b>0.803</b>			
OE	0.514	0.423	0.363	0.437	0.336	0.619	<b>0.775</b>		
SP	0.465	0.405	0.430	0.502	0.279	0.679	0.558	<b>0.808</b>	
TI	0.615	0.553	0.435	0.485	0.453	0.460	0.536	0.493	<b>0.839</b>

### Global goodness of fit (GoF)

The goodness of fit (GoF) index, the geometric mean of the average communality (outer measurement model) and the average R<sup>2</sup> of endogenous latent variables, is an index that globally validates the PLS model in order to find a compromise between the measurement performance and the structural model performance (Tenenhaus et al., 2005). Accounting for the performance of both measurement and structural parameters, the GoF is employed to determine the overall predictive power of the model (Chin, 2010). The current study obtained a GoF value of 0.69, exceeding the formula's threshold value of 0.36 for a large R<sup>2</sup> effect (Wetzels et al., 2009). In comparison to baseline values, the overall model demonstrated superior explanatory power (GoF small = 0.10, GoF medium = 0.25, and GoF large = 0.36)

### Assessment of the Structural Equation Model

Following the measurement of reliability and validity, the structural model was assessed to determine the relationships between the research model's constructs. In this evaluation, the path coefficients ( $\beta$ ), the squared multiple correlation (R<sup>2</sup>), and the t-value were reported as criteria. This paper's primary objective is to establish the role of organisational learning as a link between knowledge management and growth performance. In order to examine the mediating role, the four-step procedure proposed by Baron and Kenny in accordance with the SOBEL test (Baron and Kenny 1986, Judd and Kenny 1981, and James and Brett, 1984) and the bootstrapping method proposed by Preacher and Hayes (2008), and Hayes, was utilised (2009). The SEM test results were depicted in Figures 2, 3, and Table 3. Table 3 displays the PLS analysis result for the mediation effect. These results



are essential for determining whether mediation exists in the relationship between predictor and outcome model, which is followed by the Baron and Kenny four-step test (1986). Below is a discussion of the four steps recommended by Baron and Kenny (1986), based on Table 3:

Step 1: The results reveal a significant relationship between the independent variable (knowledge management) and the dependent variable (growth performance) ( $=0.606$ ,  $t=9.578$ ,  $p<0.01$ ). Consequently, it can be stated that an effect may be mediated by organisational learning (Mediator Variable).

Step 2: This step consists primarily of treating the mediator as if it were an outcome variable. Confirming the second step, the results reveal a significant relationship between organisational learning as the outcome variable and knowledge management as the predictor variable ( $=0.580$ ,  $t=8.371$ ,  $p<0.01$ ).

Step 3: Using the same equation, both Steps 3 and 4's effects are estimated. The third step is confirmed by the fact that the mediator variable of organisational learning has a significant influence on the dependent variable of growth performance ( $=0.481$ ,  $t=5.996$ ,  $p<0.01$ ).

Step 4 is to establish that organisational learning fully mediates the relationship between knowledge management and growth performance; controlling for organisational learning (path c') should result in a value of zero. Table 3 indicates that the value of path c' is 0.327 and significant at a t-value of 3.940, indicating partial mediation (Baron and Kenny, 1986). The introduction of the mediating variable reduces the coefficient value between knowledge management and growth performance from 0.606 (Path c) to 0.327 (Path c'), despite the fact that path c' is not zero.

This paper concludes, based on a Sobel test of Baron and Kenny's guidelines, that organisational learning has partially mediated the relationships between knowledge management and growth performance. In addition, according to Figure 2 (total effect) and Figure 3 (direct effect), the introduction of organisational learning as a mediator increased the R<sup>2</sup> value from 0.367 (or 36.7%) to 0.449 (or 44.7%).

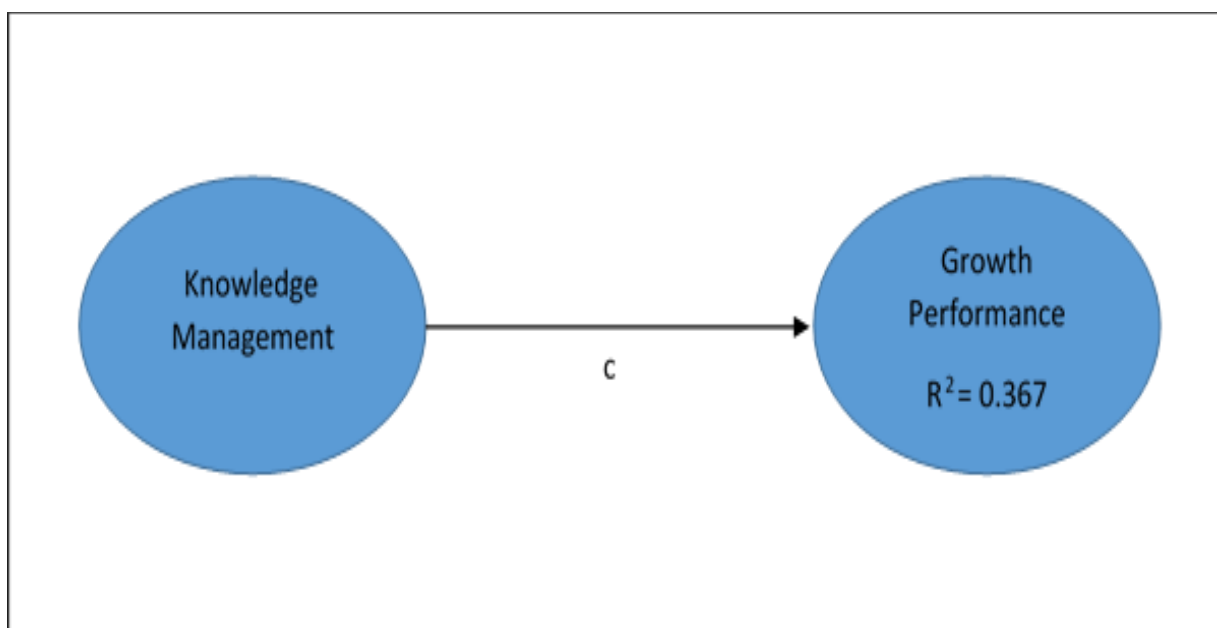


Figure 2. Total Effect

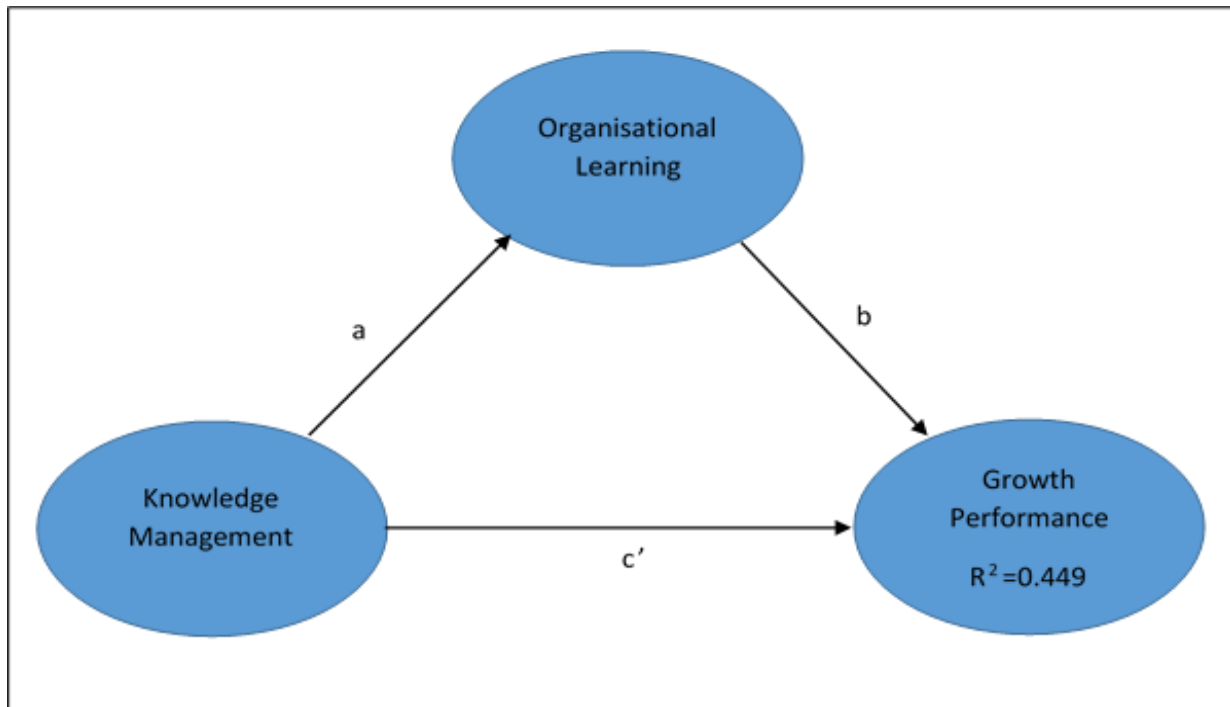


Figure 3. Direct Effect

Table 3. Analysis of Mediation Effect using PLS Analysis

Step (Baron and Kenny, 1986)	Path	Beta Coefficient	t-value
Step 1	C	0.606**	9.578
Step 2	A	0.580**	8.371
Step 3	B	0.481**	5.996
Step 4	C'	0.327**	3.940

Note: \*Significant at  $p < 0.05$ ; \*\*Significant at  $p < 0.01$

## 9. FINDINGS

In this study, we investigated whether organisational learning acts as a mediating role on the connection between knowledge management and growth performance in Malaysian construction companies. According to the findings, organisational learning does, in fact, partially mediate the connection between knowledge management and growth performance, and the amount of variance accounted for by organisational learning is equal to 48%. This finding demonstrates that organisational learning acts as a mediator between knowledge management and the performance of growth. Knowledge management makes a positive contribution to growth performance; however, the inclusion of organisational learning as a mediating variable helps to enrich this growth performance even further. This growth performance is further helped by the inclusion of this mediator. Consequently, in order for construction companies to achieve success, continue to be productive, and expand, they need to place a strong emphasis on knowledge management processes and recognise the significance of organisational learning as an important strategic organisational asset.

## 10. CONCLUSION

Numerous practitioners and academicians have acknowledged that knowledge is a valuable asset that can be utilised to the advantage of businesses. It has also been stated that knowledge is a more valuable resource than land, capital, and buildings. However, this resource is poorly managed within construction companies, and the majority of organisations lose knowledge. In today's challenging business environment, many construction companies have recently realised that knowledge can provide benefits, particularly in terms of sustaining competitive advantage and enhancing growth performance. According to the current findings, the growth performance of construction companies is influenced by knowledge management and organisational learning practises. In other words, companies that incorporate both knowledge management and organisational learning into their strategic planning are more likely to achieve superior growth results.

The implementation of knowledge management and organisational learning practises within an organisation to improve the growth performance of construction companies represents a substantial investment on the part of the companies. To successfully implement these strategies, senior management must comprehend and develop a holistic strategy for implementing a comprehensive knowledge management and organisational learning process. Both practises should be integrated to improve the construction company's growth performance and should not be considered separately. It has been demonstrated that knowledge management initiatives can improve an organization's capacity to acquire, convert, apply, and protect knowledge. It does not ensure that the organisation invests its resources optimally or manages its knowledge in the most effective manner.

This paper provides sufficient evidence that effective knowledge management and organisational learning programmes within an organisation are essential for successfully enhancing construction companies' growth performance. The findings can serve as a basis for strategic decisions made by top management in order to facilitate the growth of a company. For construction companies to remain competitive and grow in a challenging business environment, correct decisions are essential. However, despite the extensive literature available worldwide on this topic, only limited research has examined the construction industry's knowledge management issues. On the basis of evidence from the Malaysian construction industry, this study contributes to the body of knowledge on the organisational learning discipline and knowledge-related management processes.

## CONFLICTS OF INTEREST

There are no conflicts to declare.

## REFERENCES

- Abdul-Rahman, H. and Wang, C. (2010). Preliminary Approach to improve Knowledge Management in Engineering Management. *Scientific Research and Essays* 5(15), pp. 1950-1964.
- Abu Bakar, A. H, Abdul Razak, A., Yusof, M. N. and Abdul Karim, N. (2011). Factors determining growth of companies: A study on construction companies in Malaysia. *African Journal of Business Management*, 5, 8753-8762.
- Abu Bakar, A. H. (1993) Growth Strategy for Construction Companies in Developing Countries, A Malaysian Experience. *CIB W-65 Symposium 93, Port of Spain, Trinidad*.
- Argote, L., Ingram, P., Levine, J., Moreland, R. (2000). Knowledge transfer in organizations. *Organizational Behaviour and Human Decision Processes*, 82(1), pp.1-8.

- Asmi, A., Rasli, A., Majid, M. and Rahman, I. A. (2009). Malaysian Practitioner's Perception on Knowledge Management in Construction Consulting Companies. *Modern Applied Science*, 3, P103.
- Brush C, Vanderwerf PA (1992). A comparison of methods and sources on performance by size and age in small service and retail firms. *J. Bus. Venturing*, 14 (3), pp.157–170.
- Canals, J. (2001). How to think about corporate growth? *European Management Journal* 19(6), pp. 587-601.
- Carrillo PM, Anumba CJ, Kamara JM (2000). Knowledge management strategy for construction: Key IT and contextual issues. *Construction Informatics Digital Library*.
- Chen, L. and Mohamed, S. (2008) Impact of internal business environment on knowledge management within construction organizations. *J. of Construction Innovation*, Emerald, 8(1), pp. 61-81.
- Child, J. (1973) Predicting and Understanding Organizational Structure. *Administrative Science Quarterly*, 18, pp. 168-185.
- Chin-Loy, C., Mujtaba, B. G. and Dastoor, B. (2007). Organizational Knowledge Management Research and Practices for Developing Economies. *Society of Afghan Engineers Journal*, 58.
- Chuang, S. (2004). A resource based perspective on knowledge management capability and competitive advantage: An empirical investigation. *Expert Systems with Application*, 27(3), pp. 459-65.
- Darroch, J. 2003. Developing a measure of knowledge management behaviors and practices. *Journal of Knowledge Management*, 7, 41-54.
- Davenport T, Prusak L (1998). Working knowledge: how organizations manage what they know? Boston: Harvard Business School Press.
- Egbu, C O, Sturgesand, J and B. Bates (1999) Learning from Knowledge Management and Trans-Organizational Innovations in Diverse Project Management Environments, In Proceedings from the 15th Annual Conference of the Association of Researcher in Construction Management (ARCOM), September, Liverpool John Moores University, pp. 95-103.
- Esmi, R. and Ennals, R. (2009). Knowledge management in construction companies in the UK. *AI and Soc.*, 2, pp. 197-203.
- Faraj I., Alshawi M., Aouad G., Child T. and Underwood J. (1999). Distributed object environment: Using international standards for data exchange in the construction industry, *Computer-Aided Civil and Infrastructure Engineering*, 14(6), pp. 395-405.
- Fong, P.S.W. and Choi, S.K.Y. (2009) "The processes of knowledge management in professional services firms in the construction industry: a critical assessment of both theory and practice", *Journal of Knowledge Management*, 13( 2), pp.110 – 126.
- Gold, A. H., Malhotra, A. and Segars, A. H. (2001). Knowledge management: An organizational capabilities perspective. *Journal of management information systems*, 18, pp. 185-214.
- Hamel, G., & Prahalad, C. K. 1994. Competing for the future. *Harvard Business Review*, 72(4), pp.122-129.
- Hari, S., Egbu, C. and Kumar, B. (2005). A knowledge capture awareness tool: An empirical study on small and medium enterprises in the construction industry. *Engineering, Construction and Architectural Management*, 12, 533-567.
- Hillebrandt, P.M. and Cannon, J. (1990) *The Modern Construction Firm*. Macmillan: Basingstoke.

- Kamara JM, Anumba CJ, Carrillo PM. (2000) Integration of knowledge management within construction business processes. In: Faraj I, Amor B, editors. Proceedings of the UK National Conference on Objects & Integration for Architecture, Engineering & Construction, 13–14 March, London: Building Research Establishment Ltd, pp. 95–105.
- Kamara, J.M., Anumba C.J. and Carrillo P.M.(2002) A CLEVER approach to selecting a knowledge management strategy, *International Journal of Project Management* 20 (3), pp. 205–211.
- Lee, L.T. and Sukoco, B.M. (2007). The effects of entrepreneurial orientation and knowledge management capability on organizational effectiveness in Taiwan: the moderating role of social capital. *International Journal of Management*, 24(3), pp. 549-73.
- Liao, S.H.and Wu, C.C. (2009). Knowledge Management and Innovation: The Mediating Effects of Organizational Learning, in Proceedings of the 2009 IEEE IEEM, pp. 1850-1854.
- Liu, P.L., Chen, W.C. and Tsai, C.H. (2005). An empirical study on the correlation between the knowledge management capability and competitiveness in Taiwan's industries, *Technovation*, Vol. 24 No.12, pp.971-977.
- Newcombe, R. (1999). Procurement as a learning process. *Profitable Partnering in Construction Procurement*, E&FN Spon, London, pp.285-94.
- Nonaka I, Takeuchi H (1995). The knowledge creating company: how Japanese companies create the dynamics of innovation. New York: Oxford University Press.
- Omerzel, D. G. (2010) The impact of knowledge management on SME growth and profitability: A structural equation modelling study. *Africa Journal of Business Management*, 4(16), pp. 3417- 3432.
- Penrose, E. (1959). *The Theory of the Growth of the Firm*. London: Oxford University Press.
- Renzel, B. (2008). Trust in management and knowledge sharing: the mediating effects of fear and knowledge documentation, *Omega*, 36(2), pp. 206-22.
- Salojärvi, S., Furu, P. & Sveiby, K. E. (2005). Knowledge management and growth in Finnish SMEs. *Journal of Knowledge Management*, 9, 103-122
- Singh, A. and Whittington, G. (1968) *Growth, Profitability and Valuation: a study of U.K. and Quoted Companies*. Cambridge: The Syndics of the Cambridge University Press.
- Spender, J.C. (1996) Making knowledge the basis of a dynamic theory of the firm. *Strategic Management Journal* 17, pp. 45–62.
- Von Krogh, G., Nonaka, I. and Aben, M. (2001). Making the most of your company's knowledge: a strategic framework. *Long Range Planning*, 34, 421-439.
- Watts, G., Lope, J. and Hulme, M. (1998) Annoff's Matrix, Pain and Gain. *International Journal of Entrepreneurship Behaviour and Research*, 4(2), pp. 101-111.
- Webb, S. P. (1998). Knowledge Management: Linchpin of Change, The Association for Information Management (ASLIB), London.
- Yang, D. (2011) The Effect of Knowledge Management on Product Innovation - Evidence from the Chinese Software Outsourcing Vendors, *iBusiness*, 2011, 3, pp. 16-22.
- Zack, M., Mckeen, J., Singh, S. (2009), "Knowledge management and organizational performance: an exploratory analysis", *Journal of Knowledge Management*, 13(6), pp.392-409.



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