Knowledge Management and Growth Performance in Construction Industry

Mohamad Nizam Yusof, Abu Hassan Abu Bakar, Nordin Abd. Razak and Amin Akhavan Tabassi

School of Housing, Building and Planning, Universiti Sains Malaysia
School of Educational Studies, Universiti Sains Malaysia

ABSTRACT

The growth performance of the companies is often understood as business success while knowledge is recognized as a valuable resource for companies to sustain competitiveness in today’s challenging business environment. The objective of this paper is to investigate the relationship between knowledge management and growth performance in the Malaysian construction industry. Questionnaires were sent to 500 respondents via postal service. From 500 questionnaires disseminated, 110 of the questionnaires were returned, completed and usable. The data were analysed through partial least squares structural equation modelling using SmartPLS© software. The findings show a positive relationship between knowledge management and growth performance in the Malaysian construction industry. The results of this study are valuable in establishing a valid and reliable survey instrument for construction companies especially in Malaysia.

INTRODUCTION

Empirically, knowledge is one of the greatest contributing factors in the growth of construction companies [1]. Knowledge is a vital resource for organizations. It is valuable because it embodies best practices, routines, lessons learned, problem-solving methods, and creative processes that cannot be easily imitated by competitors [2]. Lee and Sukoco[3] found that most organizations that enhance their business performance depend not only on successfully deploying tangible and natural resources but also on effectively managing its knowledge. Although, knowledge is a valuable resource for the organization, Newcombe[4] and Argote et al. [5] emphasized that knowledge is difficult to transfer within the construction sector. Knowledge in the construction industry is sometimes difficult to manage [6] and results in enormous wastage of resources and produces a detrimental effect on quality [7]. Thus, this paper aims to examine the relationship between knowledge management and growth performance with evidence from the Malaysian construction industry.

Research framework:

Knowledge is a constant source of organizational performance [8]. The resource-based view regards knowledge as a valuable resource that can be utilized by the company to enhance performance. Based on previous studies, the main variable of interest in this study is the dependent variable of growth performance, which is measured by two indicators, turnover and number of permanent employees. This dependent variable may be influenced by the independent variable of knowledge management. Knowledge management has four dimensions, namely, knowledge acquisition, conversion, application, and protection [9]. The relationship between the dependent and independent variables in this study is shown in Figure 1. The model indicates that knowledge management positively influences the growth performance of companies.
Fig. 1: Relationship between knowledge management processes and growth performance

Research method:
The study used a quantitative approach, that is, a survey was conducted to collect primary data. Five hundred questionnaires were sent to selected individuals in 4000 G7 construction companies registered under the Construction Industry Development Board in Malaysia. A total of 110 completed questionnaires were returned and deemed usable. The collected data were processed and analyzed by partial least-squares path modeling with Smart PLS M2 2.0.

Analysis:
Background of Respondents:
The responses indicated that many of the respondents (29%) were project managers. Managing directors accounted for 26% of the respondents, the second highest proportion. Other positions were executive managers (14%) and general managers (2%). Many of the respondents held bachelor’s degrees (45%), whereas 11% held master’s degrees. A majority of the respondents (47%) had been working in the construction industry for 11–15 years. Thirty-three percent had been working for more than 15 years, 15% for less than 5 years, and 6% for 6–10 years. Thus, most of the respondents in this study were educated and experienced and held top management posts directly involved in strategy in their companies.

Goodness of measures:
The two main criteria used to test the goodness of measures are validity and reliability. Reliability is a test of how consistently a measuring instrument measures the concept it measures, whereas validity is a test of how well an instrument measures the particular concept it is intended to measure [10]. The current study used two validity methods, convergent validity and discriminant validity. The cutoff value for loadings was a significant level of 0.7 [11]. Thus, items with a loading higher than 0.7 on two or more factors were deemed to have significant cross-loadings. Overall, the measurement model in this paper demonstrated adequate convergent validity and discriminant validity.

Path Coefficients:
The current study obtained a GoF value of 0.69, exceeding the cutoff value of 0.36 for a large effect of $R^2$ according to the formula. The result indicates that the overall model had excellent explanatory power in comparison with baseline values (GoF small = 0.10, GoF medium = 0.25, GoF large = 0.36). The path coefficients in a PLS model are similar to the standardized beta coefficients in a regression analysis [11]. Whereas great path weights indicate both positive and negative relationships in a PLS model, the significance of path coefficients must be analyzed through t-tests. Figure 2 presents the results. Figure 2 shows that predictive quality yielded a $Q^2$ value of 0.36 for the dependent variable, exceeding the cutoff value of 0.35[11] and thus indicating the desired predictive relevance of the model. The $R^2$ value was 0.367, suggesting that 36.7% of the variance in growth performance can be explained by the processes of knowledge management, namely, knowledge acquisition, conversion, application, and protection. Knowledge management was positively related to growth performance at $t=9.221$, $p<0.01$, indicating that knowledge management was a significant predictor of growth performance.
**Findings:**

The results show that knowledge acquisition, conversion, application, and protection (the dimensions of knowledge management) had a significant relationship with growth performance ($t=9.221$, $R^2=0.367$, $p<0.01$), predictive relevance $Q^2=0.36$ (0.02 small, 0.15 medium, and 0.35 large), and an excellent global GoF ($GoF=0.69$).

Among these four processes, knowledge conversion was the main contributor to knowledge management, having the highest beta value ($\beta=0.902$). This contributor was followed by knowledge application ($\beta=0.898$), knowledge acquisition ($\beta=0.882$), and knowledge protection ($\beta=0.804$). Thus, in terms of relationship with growth performance, knowledge conversion had the largest effect and knowledge protection had the lowest effect.
effect of all four processes in knowledge management. The findings reveal that knowledge management should be considered in the organization to increase growth performance.

**Conclusion:**

Knowledge vitally influences the challenging business environment and significantly contributes to sustaining business performance. Most companies aim to grow and succeed in their businesses. The high growth of enterprises is a key contributor to employment, innovation, and competitiveness. Companies that significantly grow contribute actively to their overall development. Growth is vital to the well-being of businesses, and knowledge is an essential resource that should be effectively managed to enhance growth performance.

This study provides sufficient evidence that effective knowledge management programs in an organization are critical to successfully enhancing growth performance in the construction industry. This finding is consistent with the research done by Darroch[12], where this researcher also found a positive relationship between knowledge management and organisation benefit. The results of this study can be utilized as a basis for the strategic choices of top management to enable a company to grow. Right decisions are crucial for construction companies to remain competitive and grow in the challenging business environment. However, despite vast literature available globally on this issue, limited research has examined the problems related to knowledge management faced by the construction industry. Thus, this study contributes to the body of knowledge on knowledge management processes in the construction industry in Malaysia.

**REFERENCES**