

Research Capability, Job Satisfaction, and a Multiple Approach of Competitiveness: A Conceptual Framework for University Kuala Lumpur, Malaysia

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Abstract

Despite extensive empirical research linking research capability and competitiveness in the context of manufacturing companies, little attention has focused on the service sector, particularly the educational sector. A review of previous related literature reveals no evidence of research that investigated the relationship between the research capabilities of universities and the multidimensional competitiveness approach. Using the knowledge-based view theory, the study assumes that knowledge is a critical source of competitiveness and there is significant relationship between research capabilities and competitiveness. Additionally, it assumes that such a relationship could be indirect through the mediating effect of job satisfaction. The study contributes to the body of knowledge by testing this theory in the educational field. Additionally, the study uses a multidimensional approach to measure the competitiveness instead of using one proxy of outcomes, which has been widely neglected by similar studies.

Keywords: Research capabilities, Job Satisfaction, Porter's Five Competitive Forces Model, Structure Equation Modeling, Resources- Based View.

1. Introduction

It is widely accepted that a nation's competitiveness relies on the competitive ability of organisations (Iraldo, Testa, & Frey, 2009; Porter & Van der Linde, 1996; Swift & Zadek, 2002). Organisations strive to make themselves more effective and efficient by utilising as many resources possible to ensure stability and growth in the modern market environment. Such efforts cause corporations to not only focus on financial returns, but to extend their interests to include dimensions of competitiveness (Lankoski, 2000; López-Gamero, Molina-Azorín, & Claver-Cortés, 2009).

Competitiveness refers to the results of the match between the internal capabilities of the organisation and its external changes (Hart, 1995). Competitiveness results from the efficient use of a firm's tangible and intangible assets (Wernerfelt, 1984; 2011). In other words, resources represent the strengths and weaknesses of the organisation (Duncan, Ginter, & Swayne, 1998).

In the academic field, the competitiveness of universities in most cases relies on their capabilities such as science research capability, which represent the core capability of universities and the main indicator of any powerful university (Liu & Shi, 2008). Knowledge-based view theory advocates knowledge possessed and practiced by firm members constitutes a firm's primary resource. This view challenges the shareholder value approach (Grant, 1996). Research capability refers to a process of individual and institutional development which leads to higher level of skills and greater ability to perform useful research (Pickstone, Nancarrow, Cooke, Vernon, Mountain, Boyce, & Campbell, 2008, p. 77).

1.1 Background and the issues of study

A university's capabilities largely determines its competitive advantage (Giménez, & Martínez, 2006; Liu & Shi, 2009; Noruzi & Vargas-Hernández, 2010; Yang, Lin, & Li, 2010). In the context of universities, such capabilities constitute their tacit knowledge (Audretsch, Hülsbeck, & Lehmann, 2012; Grant, 1996; Liu & Shi, 2008; Sveiby, 2001). This background explains the importance for universities to take stock and evaluate and their capabilities for optimal use (Liu & Shi, 2008).

Naturally, universities focus on developing their research abilities yet this is often not included when seeking to determine and evaluate their competitive capabilities (Boccardelli & Magnusson, 2006; Helfat & Peteraf, 2003; Liu & Shi, 2008; McEvily & Marcus, 2005; Teece, 2007; Liu & Shi, 2008; Siegel, Waldman, Atwater & Link, 2004), and knowledge creation issues (Noruzi & Vargas-Hernández, 2010). Noruzi and Vargas-Hernández added that there is a need to consider the extent to which scientific research capability in universities contributes in a sufficient way, to its competitive capability. Additionally, reviewing related literature showed that there is a paucity of studies concerning the relationship between science research capability and competitiveness. To fill such gaps, the current study evaluates the science research capability of University Teknikal Mara (UniKL), and investigates whether the competitiveness of Majlis Amanah Rakyat (MARA) can be explained by its science research capability.

UniKL is a regional leader in engineering technology education. It was established on 20 August 2002 and is owned by MARA, an agency under the Ministry of Rural and Regional Development (KKLW), Malaysia (www.unikl.edu.my). The university is tasked with advancing technical education in Malaysia. UniKL seeks to endow its graduates with solid technological knowledge coupled with business savvy to meet industry demands.

It maintains close links with industry through research development projects and product and research commercialisation (www.unikl.edu.my). The university receives support and funding from the industry in exchange for research and innovation. This dynamic is challenged by the increasing number of universities vying for support from the industry (Ahsan, Abdullah, Fie, & Alam, 2009; Consilz, 2008). In its pursuit to advance its global ranking, universities in Asia are exploring different strategies to best optimise its resources and realise its potentials (Mok, 2015). In this regard, analysis has revealed that the academic research of Malaysian universities is failing to meet acceptable standards (Shamsul, Rose, & Azizah, 2008). To improve its global ranking, the Malaysian government has introduced various categories of universities including the status of Research University (RU) and Accelerated Program For Excellence (APEX) university status. It has encouraged the establishment of new private universities and the introduction of foreign universities (Basaruddin, Haron, & Noodin, 2012; www.waset.org). Such initiatives are in line with its vision 2020 to become a centre for academic excellence (Consilz, 2008; Mohsin & Kamal, 2012; www.waset.org). Achieving such a goal requires continuous evaluation of the current capabilities and performances of Malaysian universities. The current study addresses several aspects regarding this issue.

Based on previously mentioned practical issues (the need to evaluate both the research capabilities and competitiveness of Malaysian Universities) and existing theoretical gaps (the lack of a clear theoretical framework to investigate the link between research capabilities and competitiveness within an educational organisation), this study seeks to answer the following questions:

1. To which extent is UniKL capable to perform useful research?
2. To which extent is UniKL able to compete in the current local market?
3. To what extent can the research capability explain the competitiveness of UNIKL?

1.2 Research framework and hypotheses

The study is a theory testing empirical research examining the impacts of research capabilities on competitiveness in UniKL. Based on the relevant literature and resources and knowledge-based theories, the researcher proposes that the research capabilities will work as predictors of the competitiveness, and job satisfaction will mediate this relationship as shown in the following figure:



Figure (1): Research Framework

Barney, Wright, & Ketchen (2001) articulated that corporations could gain sustained competitive advantage when adopting unique strategies, which are not adopted by other corporations. They added that the corporations' resources become sources of competitive advantage if they achieve the following principles: (1) they are valuable, which means that these resources give the corporation the ability to gain opportunities or avoid threats; (2) they are rare among the market or competitors; (3) they are imperfectly imitable, and (4) they have no strategic equivalent, which indicates that one resource cannot be used as an alternative to another resource. As for research capabilities, it is a source of competitive advantage in view of being tacit knowledge unique to the institution (Audretsch, Hulsbeck, & Lehmann, 2012; Grant, 1996; Sveiby, 2001; Yang, Lin & Li, 2010). Accordingly, we state the following propositions:

Proposition 1: Research capabilities affect the competitiveness of UniKL.

There are several indicators that management support positively influences job satisfaction (Pineau, Spence, Regan, & Wong, 2015; Du Preez & Bendixen, 2015). Additionally, perceptions of organisational support should increase individuals' sense of self-regard and increase the likelihood of employee identification and satisfaction (Edwards & Peccei, 2015; Ugboro & Obeng, 2000). Moreover, Babin & Boles (1996) found job satisfaction can result from employee perceptions of co-worker involvement and supervisory support. The results reveal positive correlation between top management leadership, employee empowerment, job satisfaction, and customer satisfaction. Based on previous literature we conclude that:

Proposition 2: Managerial support affects employees' satisfaction in UniKL

The relationship between employees' attitudes and behaviours and organisational performance has been discussed in many studies (e.g. Barrick, Thurgood, Smith, & Courtright, 2015; Hijal-Moghrabi, Sabharwal, & Berman, 2015; Ostroff, 1992; Zutshi & Sohal, 2004; Vermeeren, Kuipers, & Steijn, 2014). Zutshi and Sohal (2004) found that involving employees in the planning of the environmental management systems benefitted the corporations in enhancing morale building within the corporation, and fulfilling the customer expectations due to considering employees as stakeholders. This is in line with the argument that employee satisfaction and organisational performance are correlated and a strong relationship is expected between them (Ostroff, 1992). As empirically supported, motivating work design could positively affect organisational performance (Barrick, et al., 2015; Hijal-Moghrabi, et al., 2015). Moreover, Vermeeren et al. (2014) found that job satisfaction positively affects organisational performance. Consequently, the study formed the following hypothesis:

Proposition 3: Employees' satisfaction affect organisational competitiveness of UniKL

This research also seeks to test the mediating effects of job satisfaction on the relationship between research capability and competitiveness by using Baron and Kenny's (1986) model. Job satisfaction serves as a mediator when it is significantly related to each dimension of research capability and competitiveness.

In line with the above conditions, we consider the mediating effects of job satisfaction to be between managerial support and competitiveness. Thus, the last hypothesis is:

Proposition 4: Job satisfaction mediates the relationship between managerial support and competitiveness.

2. Research methodology

2.1 Research Philosophy

The study adopts a survey questionnaire design for theory testing. The data is collected from a sample of fulltime lecturers in UniKL. The questionnaire is adopted from previous literature to measure the variables of this study. It contains two sections related to the research capability and competitiveness.

2.2 Instrumentation

Competitiveness is measured using 31 items adopted from Ronquillo (2012). These items reflect the Porter's Five Competitive Forces Model.

Research capability will be measured using 50 items adopted from Bay and Clerigo (2013). The chosen items measure the three capabilities called institutional and department support, and faculty confidence. The instrument will be tested for its reliability and validity in the pilot study stage.

2.3 Pilot Study

Achieving reliability and validity of the questionnaire means that the questions asked are clear to the respondents, and

the response options are comprehensive and appropriate (Watson, 1998). Such procedures can be achieved by conducting a pilot study. The pilot study is strongly recommended to test the questionnaire (Babbie, 1995; Hair et al., 2007; Watson, 1998). Even though the questionnaire used in this study was adopted from similar previous studies, a pre-test of the questionnaire is required. Hair et al. (2007) articulated that:

If a researcher has used a questionnaire in England and is asked to use it in the US it must be pretested. And of course, if the questionnaire were translated into French for use in France it must be extensively pretested (p. 279).

Hair et al. (2007) suggested that the minimum number for the pre-test should be four or five individuals while the largest number of the pre-test should be no more than 30. The reliability coefficient scores are considered poor when the Alpha coefficient range < 0.6, moderate when the range is between 0.6 and 0.7, good when the range is between 0.7 and 0.8, very good between 0.8 and 0.9, and excellent when the Alpha coefficient range equal to or more than 0.9 (Hair et al., 2007; Nunnally, Bernstein, & Berge, 1967). Alpha > 0.95 requires checking to certify that they indeed measure the various aspects of the concept (Hair et al., 2007).

After assuring the validity and reliability of the instrumentation, the questionnaires will be distributed to the participants of this study, which are all fulltime lecturers in UniKL. They were chosen because they represent the main persons who engaged in research activities.

2.4 Sampling

Collecting the data from multiple respondents is important because it minimizes the potential of bias from a single informant (Delmas, 2001).

Cavana et al. (2001) identified two types of sampling techniques, namely proportionate and disproportionate sampling. By analysing the different approaches, the researcher believes that proportionate stratified sampling was more accurate and promising to reflect the population. This is because the proportionate stratified sampling technique can give equal chances for each institute to be represented by a number of academicians relative to the total population of the institute (Hair et al., 2007). By doing so, the researcher can ensure that all institutions have been represented in the sample.

Choosing the sample of this study depends on the list of all fulltime lecturers (PhD and Master Holders) in the 14 UniKL institutions, which equals 1101. The next section discusses the procedures of determining the sample size.

This study adopted the formula of Dillman (2000) to calculate the sample size:

$$n = \frac{(N)(p)(1-p)}{(N-1)\left(\frac{B}{1.96}\right)^2 + (p)(1-p)} \quad (1)$$

When

N = population of the study

p = the population proportion

B = the acceptable margin of errors that the researcher is willing to accept for its study

C = Z statistic associated with the confidence level.

n = sample size required at desired level of precision.

N= 1101, p is assumed to be 0.05 since this would provide the maximum sample size (Krejcie & Morgan, 1970).

Following this, C is considered to be 1.96 because the Z value at confidence level of 0.95 corresponds with 1.96 (Krejcie & Morgan, 1970). B= .05 (meaning the researcher accepted a 5% margin of error for the study). Consequently, the sample size is calculated as:

$$n = \frac{(N)(0.05)(1-0.05)}{(N-1)\left(\frac{0.05}{1.96}\right)^2 + (0.05)(1-0.05)} \quad (2)$$

Additionally, we support our calculations by the sample size table provided by Cavana et al. (2001) and Krejcie & Morgan (1970). The largest sample will be used following the recommendation that the bigger sample size, the more likely the results are credible and generalizable (Hair et al., 2010; Sekaran).

According to Krejcie & Morgan (1970), a sample size of n=285 can represent a population of 1101. Therefore, the sample size of this study is 285.

The total sample size is the total number of fulltime lecturers in UniKL. Therefore, the number of respondents chosen from each institute will be based on the relative frequency of the institute (Size of particular institute relative to the total number of fulltime lecturers in UniKL).

The percentage is calculated as following:

The percentage of each institute = n/ N

N= Total number of fulltime lecturers in UniKL

n= Size of particular institute measured by its number of fulltime lecturers

The participants from each institute will be selected randomly using Excel random numbers generation software.

2.5 Data Analysis

Prior to testing the main research questions, the data will be detected to ensure its ability to reflect the phenomena under study (data screening). Screening the data considers aspects such as the response rate, non-response bias, and outliers. Ignoring such issues can affect the validity of data and, accordingly, the results of study.

Descriptive statistics will be applied to determine the state of both the research capability and competitiveness, as well as the characteristics of the sample.

Structure Equation Modelling will be used as a group of statistics methods to investigate the relationships among multiple variables, and examine the structure of the interrelationships in a series of equations (Hair et al., 2010).

3. Conclusion

Existing empirical research studying the linkage between research capability and competitiveness have focused on the manufacturing companies (e.g., Dhewanto & Sohal, 2014; Carneiro, 2000; Guan & Ma, 2003; Guan, Yam, Mok, & Ma 2006; Liu, Chen, & Tsai, 2004). Little attention has been awarded to the service sector, particularly the educational sector (Liu & Shi, 2008; Siegel, Waldman, Atwater & Link, 2004). Reviewing the previous literature showed that there is no evidence of research that has investigated the relationship between the research capabilities of universities and multidimensional competitiveness.

Theoretically, this study provides support for both the resource-based view and knowledge-based view theories. Resource-based view has been criticised for its focus on the highly aggregated dependent variable, firm performance (Ray, Barney, & Muhanna, 2004). Classifying competitiveness into five dimensions according to Porter's Five Competitive Forces Model can shine a light on the importance of disaggregating the dependent variable, instead of using the overall corporate performance. Additionally, Chabowski, Mena, & Gonzalez-Padron (2011) recommended future studies investigate the internally and externally capabilities-based resources that help the universities in achieving competitiveness. Moreover, the study is an empirical investigation on how universities can improve their competitiveness by creating, extending or modifying its resource base, as suggested by Ambrosini, Bowman, and Collier (2009).

From the practical point of view, the study benefits the decision-makers by highlighting research capability as a predicted tool to improve the competitiveness of the university. By doing so, the study directs the decision-makers to the most appropriate practices for improving both the research capabilities and competitive position.

Finally, methodologically, using the quantitative approach can serve as a base for comparison between the findings of this study and the findings of other studies, which in turn, will enhance the construction validity of the previous studies conducted in different sectors.

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