

INNOVATION CAPABILITY: AN EXPLORATION INTO ITS ROLE IN DETERMINING FIRM PERFORMANCE

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Abstract

The recognition of innovation capability as a key success factor in determining performance has gained widespread attention from academicians and practitioners. They studied innovation capability in a variety of contexts including in relation to the business development, technology, policy design and social systems. Innovation capability is the ability of a firm to transform an idea into a something new which carries an economic value. The economic value would then increase profit and consequently firm performance. However, prior empirical study on innovation capability does not provide conclusive evidence regarding the relationship between innovation capability and firm performance. This paper tends to explore the conflicting results that link between the two variables. The unit of analysis for the study is Small and Medium Enterprises operating in Malaysia.

Keywords: Innovation, Innovation Capability, Performance, Small and Medium Enterprise.

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Introduction

Many scholars could not deny that innovation capability is perceived as a critical source of competitive advantage. It plays a vital role in creating values for firms and thus, has gained widespread attention from academicians and practitioners. They studied innovation capability in a variety of contexts including in relation to the business development, technology, policy design and social systems. Despite thousands of researches on innovation has been published, its relationship with performance remains unclear and underexplored. There were conflicting results that linked between the two variables. This paper tends to explore the relationship between innovation capability and firm performance.

Innovation Capability

A Google search of academic publications using the keyword innovation has resulted thousands of definitions. Some researchers used the term innovation capability to refer to innovation or innovative organization or innovativeness. Innovation capability is the ability of a firm to transform an idea into a something new which carries an economic value. Economic value is something that is relatively worth which determines wealth creation. It would then increase profit and consequently improve performance.

Innovation capability is derived from the word innovation and capability. Innovation is production or adoption, assimilation, and exploitation of a value-added novelty in economic and social spheres; renewal and enlargement of products, services, and markets development of new methods of production; and establishment of new management systems (Crossan & Apaydin, 2010). It involves the process of identifying and matching external opportunities with internal opportunities in order to deliver new superior product and explores new markets (Ibrahim, Zolait, & Subramanian, 2009). On the other hand, capability is the processes and functions that enable a firm to deliver high quality product and services with speed, efficiency and high customer service (Allee, 1999). It is through capabilities that enable firms to create value and stay competitive.

Performance

Performance refers to a standard that a firm does something. It can be measured based on two concepts either an objective concept based on absolute measures of performance or a subjective

concept based on self-reported measures. Objective measures are directly taken from external recorded and audited accounts using absolute measures; whilst subjective measures are based on the respondents' ratings of their company performance (Wall, et al., 2004). The study has employed subjective measures to evaluate performance because of two reasons. First, subjective measure is cost effective where data is collected from questionnaires or interview surveys. It is widely used to measure business performance of public services, voluntary sector organizations and small enterprises. Second, financial data from firms are generally confidential and are publicly hard to obtain. It is expected that the respondents would be less willing to share their financial data. Even some of them, especially those small entities might not have proper financial records (Kapelko, 2006).

Nothnagel (2008) further explained that firm performance is measured according to level of performance, either firm-level performance or lower level performance. Firm level performance is known as organizational performance whilst lower level performance is known as operational performance. Organizational performance is distinguished into four groups namely accounting returns, stock markets, growth measures and hybrids whilst operational performance consists of outcome measures that are narrowed down into a specific value chain activity rather than disaggregated performance level. The outcome measures are divided into five groups namely service outcomes, human resource outcomes, technology development outcomes, infrastructure outcomes and operations outcomes. The study has employed hybrid organizational performance looking at the financial and non-financial indicators of each firm.

Innovation Capability and Performance

Innovation capability is one of the crucial factors for firms to survive and succeed. Chaveerug and Ussahawanitchakit (2008); Fruhling and Siau (2007); Rujirawanich, Addison and Smallman (2011); Phusavat, Comepa, Sitko-Lutek and Ooi (2011) cited that innovation is related to firm performance Chaveerug and Ussahawanitchakit (2008) and Fruhling and Siau (2007) empirical evidences showed that innovation has a positive and significant relationship with performance. Battor and Battor (2010) further highlighted that 22 percent of profit and 28 percent of sales growth from 700 companies with 13,311 new products between year 1976 and year 1981 came from new product launches.

Conversely, there are several empirical studies showed conflicting results that link between the two variables. For instances, Booz & Company conducted two studies looking into the statistical relationships between R&D investment and business result in the year 2005 and year 2009; where R&D investment is used to measure innovation capability. The company found that R&D to sales ratio which is the percentage of an organization's revenue that it spends on R&D has no discernible relationship with most measures on financial performance (Jaruzelski & Dehoff, 2005; Jaruzelski & Dehoff, 2009). Jaruzelski and Dehoff (2005) also found that using firms listed in the Global Innovation 1000, Intel (no. 12) spent 130 times as much as Cymer (no. 766), but their R&D to sales ratio was only 14 percent in the year 2004.

In relation, Battor and Battor (2010) claimed that the failure rate of new products is somewhere between 40 percent and 75 percent; and nearly 50 percent of new products that are introduced each year had failed. This failure rate implies costs that must be borne by firms which consequently deteriorate their performance. Due to this, Ahmad (1998); and Ibrahim, Zolait and Subramanian (2009) concluded that innovation is linked to risks, and as a result most firms remain averse to give commitment and invest in innovation activities.

Specifically, this study will look into SME performance. Gathering information from previous studies, small firms are subject to higher rate of failure relative to older and more established firms; where most business failures of SMEs were within the first year of establishment (Lee, Kelly, Lee, & Lee, 2012; Castrogiovanni, 1996). Headd (2003) agreed with the findings and stated that there was an alarming sound at US Small Business Administration that nine out of ten small businesses failed closed in their first year of operation.

Persson (2004) further made remarks that the survival of firms moves the same direction with age, size and educational attainment of the employer. Business failure happens in small firm due to the fact that older firms have established relationships and access to resources (V. Singh, J. House, & J. Tucker, 1986). Hooi (2012) added that SMEs possessed lack of skilled workers and their relational capital were not very strong. Saleh and Ndubisi (2006) made an evaluation on Small and Medium Enterprise (SME) development in Malaysia and concluded that lack of quality human capital due to insufficient knowledge on market and customer was their most significant challenge. Firms which concern on the knowledge development are a step ahead and possess state-of-the-art technology, which leads to greater innovation capability thus greater profitability. In this regard, Bontis (1998) stressed that knowledge determines the innovativeness

of firms and Chaveerug and Ussahawanitchakit (2008); Fruhling and Siau (2007) found a positive and significant relationship between innovation and performance. Therefore, the study will look into the relationship of innovation capability with SME performance.

Data collection and Instrumental Design

There are two types of data collection that were used in this study. First, the primary data collection consists of 1,071 sets of questionnaire and second, the secondary data collection containing data which was gathered from documentation and archival evidence such as articles, journals, reference books, annual reports, websites and other materials related to the study. The primary data collection period of this study was seven months. The study has utilized systematic random sampling technique as it allows a system of random selection of subjects to occur and provides assurance that the population will be evenly sampled (Zikmund, Babin, Carr, & Griffin, 2010). The unit of analysis for the study is SMEs operating in Malaysia.

The respondents were reached using postal mail survey and online survey as they are commonly used in the similar kind of studies. Both medium have an advantage of wider geographical coverage. Of 1,071 set of questionnaires sent, 185 sets were received and 172 sets were usable; which translates to about a 17.3 percent response rate.

Concerning instrumental design, the study has utilized questions designed by Wang and Ahmed (2012) as the indicators of innovation capability. They defined innovation capability in the form of organizational innovativeness and distinguished the indicators of innovation based on the type of innovation which are behavior innovativeness, product innovativeness, process innovativeness, market innovativeness and strategic innovativeness. All these items were measured using a seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The indicators of firm performance were adopted from questions designed by Abd Aziz and Mahmood (2011); where the respondents were asked to rate their firm performance based on firm's growth, financial performance and overall performance using seven points Likert scales ranging from 1 (much lower) to 7 (much higher).

Data Analysis and Result

The data was analyzed with non-response bias test and common method bias test using SPSS software and it is found free from any issues that could lead to inconsistency and inaccurate conclusions. There are no multivariate outliers found in the data set and the data distribution is not normal. Analysis of discriminant validity, internal consistency, convergent validity and path significance were using Smart-PLS software as the objective of the study is to explore the relationship between innovation capability and performance; and the conceptual model of the study is complex with a sample size of 172. Concerning this, Hair, Ringle and Sarstedt (2011) stressed that Smart-PLS has the ability to perform multivariate analysis under the conditions of non-independence of data with small sample size and without distributional assumptions.

Initial assessment of the data shows that it violates the discriminant validity requirement where most of the correlation values of the constructs have exceeded the square root of Average Variance Extracted. Due to this, high correlation values that load strongly in other construct rather than on their own construct were deleted as suggested by Gefen, Straub and Boudreau (2000). Further assessment of the data internal consistency and convergent validity showed satisfactory results. Looking at the path significant analysis, the study indicates that innovation capability has a positive relationship with performance (where $p < 0.05$, t Statistics > 2.0281). The result is parallel with previous studies performed by Chaveerug and Ussahawanitchakit (2008); Fruhling and Siau (2007); Rujirawanich, Addison and Smallman (2011); Phusavat, Comepa, Sitko-Lutek and Ooi (2011). The study concludes that innovation capability has influence on SME performance.

Conclusion

Despite thousands of studies on innovation capability have been published to show its relative importance and relationship with performance, there were no agreements between scholars that innovation capability is associated with performance. Thus, the link between the two variables remains uncertain; creating a gap in the academic field. Future studies should investigate further and look into other factors such as firm age, organizational culture, technological facilities or ICT infrastructure that may have existed between the two variables.

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