University-Industry Collaboration (UIC) and The Resource-Based View (RBV)

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Abstract: *Small and medium enterprises (SMEs) is known as the entity that always in need for support due to disadvantages of business form entity. Indeed, knowledge transfer is seen as a major resource of long-term growth of SMEs. Besides, technology transfer to the firm is critical and significant for SMEs performance. The purpose of this paper is to improve understanding of* University *Industry Collaboration (UIC) concept and how its function can uplift the performance of SMEs. The UIC will consider knowledge transfer and technology transfer activities from university to SMEs. This paper also will discuss on the Resource-Based View (RBV) Theory and its links between UIC and SMEs performance. This paper presents literature analysis concerning this research topic and explores the meaning of UIC, knowledge transfer, technology transfer, and RBV. There is evidence to support that knowledge transfer and technology transfer activities have an impact on SMEs performance. Theoretically, RBV can explain the relationship between UIC and SMEs performance by elaborating the contribution of resources towards performance. This finding may pave the way for SMEs to collaborate with university in order to achieve high performance.*

Keywords: *University-Industry Collaboration (UIC), Resource-Based View, Knowledge Transfer, Technology Transfer*

Introduction

Small and Medium Enterprises (SMEs) play a vital role in the country's economic development and are considered to be the backbone of industrial development in the country. According to the Prime Minister of Malaysia, SMEs has been one of the major engines of growth of Malaysia's economy. The latest statistics indicate that SMEs constitute 99.2% of the total business establishments, and contribute about 32% of GDP and 59% of total employment.

The definition of SMEs is based on two criteria. It is either based on the total sales turnover/revenue by a business in a year or the number of full-time employees by a business. Generally SMEs in Malaysia are defined as sales turnover of less than RM25 million or full-time employee of less than 150 for manufacturing sector while for services and other sectors, the definition is defined by sales turnover of less than RM5 million or full time employee of less than 50

Problem Statement

Presently, in order for SMEs to be competitive in the global economy, the quality of their products and services cannot be under estimated. Therefore in today's economic climate, SMEs competitions are greater than ever may in local or global. The quality of goods and services are most important thing for SMEs to continue for grow and survive.

With the purpose of accelerating performance of SMEs to the next level, it is important to understand the forces that drive SMEs performance. Analysis of findings from the World Bank Productivity and Investment Climate Surveys has revealed that there are six factors which influence the performance of Malaysian SMEs.

The analysis found that innovation and technology adoption was the most important performance lever, having the highest impact on total factor productivity and employment growth. This was followed by human capital development, access to financing, market access and to a lesser extent regulations and infrastructure. All these performance levers should be enhanced simultaneously or else shortcomings in any of these levers will prevent SMEs from reaching their full potential.

University-Industry Collaboration (UIC)

From the literature study it is obvious that university-industry collaboration (UIC) is generating interest in political, economic, and academic fields. Indeed, knowledge and technology are seen as a major source of long-term economic growth and technology transfer to the SMEs is critical and significant for SMEs performance. The UIC enables the sharing of personnel, technologies, and knowledge to happen between industrial SMEs and university. Consequently, it creates excellent knowledge pool, and competent highly trained graduates that enhance knowledge creation and transfer as well as innovation, development and commercialization of new valuable technology (Gopalakrishnan & Santoro, 2004).

Government pressure, business environment surrounding and collaboration benefits are among reasons for industry to collaborate with university. However, the literature discloses that, despite pressure from the government, there are a lot of different reasons for universities and firms to collaborate (Plewa, Quester & Baaken, 2005) and one of it is business environment pressure. Business environment now under pressure as a result of the global economic environment, have made big changes to the landscape of UIC. Many industries have experienced a structural change from just being a local business to being a global business, to be more dynamic and competitive and these changes have made the industries to open up to work with the university in order to maintain their survival (Bettis & Hitt, 1995). Organisation for Economic Co-operation and Development (OECD, 2009) is quoted to say that university has been modified in recent years to suit the needs of business with a stress on knowledge innovation, knowledge

exchange, knowledge transfer (KT) and partnership with the private sector. A range of initiatives are specially designed to stimulate economic development considering all factors of growth.

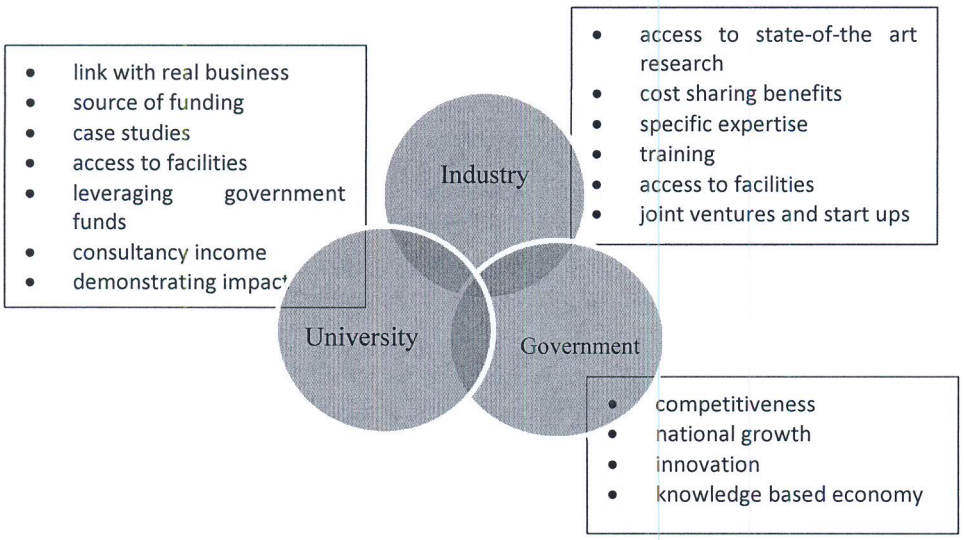

Figure 1: Potential benefits from university industry collaborations. This figure adapted from Link and Tassey (1989); Lambert (2003); Landry (2007); Etzkowitz and Dzisah (2008) cited in Schofield, nd

Generally, resources can be thought as inputs that enable organization to carry out its activities. Furthermore, resources consist of three sub-groups: tangible assets, intangible assets and capabilities. Tangible assets are fixed and current assets whereas intangible assets include intellectual properties. Capabilities are often described as invisible assets (Itami,1987) and encompass the skills of individuals or groups. It could be argued that intangible assets and capabilities can be categorized under or derived from the knowledge. Managing knowledge is one of the challenges of practicing managers in RBV where in an organization, managing knowledge requires deep understanding of characteristics and everybody needs to modify their behaviour. The interest in knowledge management affected the perception towards resources and capabilities as argued by Grant (2005). Another challenge is organization's ability to innovate. Innovation is also derived from knowledge and it involves continuous product development. D Aveni (1991) argues that an organization to innovate in product to stay one step ahead of competitors. Cooperation and coordination of resources is needed to be productive and competitive.

The Resource-Based View (RBV) and SMEs Performance

The resource based view emerged in 1984 and served as a popular theory of competitive advantage. The term was originally explored by Wernerfelt and its assumption is the desired outcome of managerial effort within the firm is a sustainable competitive advantage (SCA). He developed the RBV due to his frustration upon looking at the course syllabus and course materials when he was supposed to teach Strategy to university students. He disagreed that opportunities and threats can be exploited solely through the external positioning of businesses. He felt too much management research was focused on the external environment rather than on the strengths of the firm.

Thus he explored the important role of resources related to creating advantage compared to competitors. He explores the usefulness of analyzing firms from the resource side rather than from the

product side. Wernerfelt's (1984) conceptual article entitled "A Resource-Based View of the Firm" was a popular article where from there he goes on to analyze on the resources perspective. In the article he direct strategy scholars back toward resources as important antecedents to products and finally to firm performance. Another contribution of his 1984 paper is that the firm should base their strategy on their strengths and tomorrow's strength will be developed from today's strength.

Then conceptual work focused on the characteristics of firm resources that can contribute to a sustainable competitive advantage is done by other scholars such as Barney, Rumelt, Diericks and Cool. Then RBV evolved based on the need to address the issue of the role of resources in diversification based on Penrose discussion (1959) which lead to firm expansion into new products and markets.

Due to this reason, RBV theory emerged and being discussed widely by many scholars. Extension to RBV has generated new dimensions for the firm to be more competitive. The general principle in resource based theory is that rival firms compete on the basis of their resources and capabilities. The **main elements of the resource based view** are:

- sustainable competitive advantage and superior performance
- the characteristics and types of advantage-generating resources
- strategic choices by management

Wernerfelt (1984) and Barney (1991) shaping the works on RBV. In his framework, Barney state that organization resources that are valuable (contribute to firm efficiency or effectiveness), rare (not widely held), inimitable (difficult to duplicate) and non-substitutable (other resources cannot fulfil the same function) can yield sustained competitive advantage. This framework has been used as base for many RBV studies. However, in the process of extending Barney's framework, most researchers fail to further define the original underlying RBV constructs and specify the causal relationships.

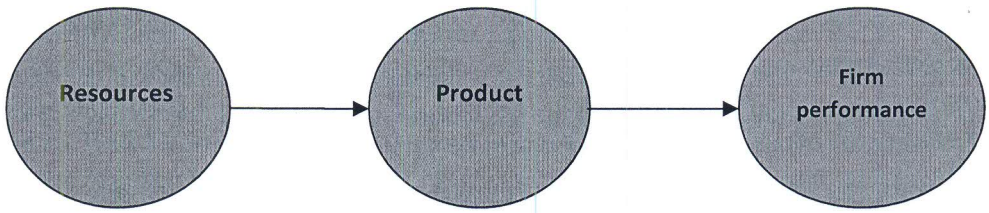

Figure 2: Wernerfelt (1984) model

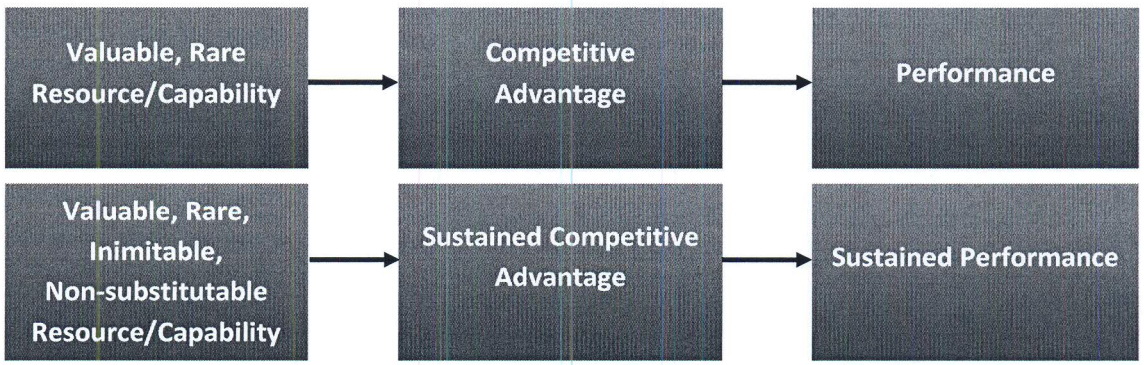

Figure 3: Barney's (1991) conceptual model

Sustainable competitive advantage is the prolonged benefit of implementing some unique value-creating strategy based on unique combination of internal organizational resources and capabilities that cannot be replicated by competitors. Sustainable competitive advantage allows the maintenance and improvement of the enterprise's competitive position in the market. It is an advantage that enables business to survive against its competition over a long period of time.

There is evidence to support that knowledge transfer and technology transfer activities have an impact on SMEs performance. Theoretically, RBV can explain the relationship between UIC and SMEs performance by elaborating the contribution of resources towards performance. This finding may pave the way for SMEs to collaborate with university in order to achieve high performance.

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