FACTORS INFLUENCING THE SUSTAINABILITY OF MALAYSIAN BUMIPUTERA NEW TECHNOLOGY-BASED SMALL FIRMS

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ABSTRACT
Entrepreneurship is viewed as the essence of free enterprise, especially with the creation of new business, which influences the market economy and hence its sustainability. Since its independence in 1957, Malaysia has implemented significant national strategies in the development of its economy through the engagement of the Bumiputera (Indigenous) community into entrepreneurial activity. However, with this significant growth, little empirical research has been conducted on assessing the critical factors that assist Bumiputera New Technology-Based Small Firms (NTBSFs) to sustain their business. Based on an international review of the literature, this conceptual paper aims to identify the critical human capital factors that may assist, or constrain, the sustainability of Bumiputera NTBSFs.

INTRODUCTION
Nowadays, the field of entrepreneurship has been considered as one of the important areas in a country’s economic growth including job creation (van Praag and Versloot 2007) and economic development (McMullen, Bagby and Palich 2008; Audretsch 2007; Shu 2001). As a result, the entrepreneurship field has received much attention from public and private sectors as well as the government. This is evident with the formulation of government policies to foster and facilitate entrepreneurial activities in a country (Minniti 2008) through the provision of funding; advisory and guidance services; and also via the development of business infrastructure such as technology parks and incentives for entrepreneurs to buy new machinery and equipment for production. Over the past three decades, the development of the field of entrepreneurship in Malaysia has significantly increased and may be attributed to the introduction of the New Economic Policy (NEP) in 1970. In addition, two recent prominent government policies; the Ninth Malaysian Plan (9MP: 2006-2010) and the Third Industrial Master Plan (IMP3: 2006-2020) have further strengthened entrepreneurial development based on the national mission as outlined in the NEP which is (a) to reduce absolute poverty irrespective of race and (b) to restructure society to correct economic imbalances. The 9MP emphasizes several national strategies for enhancing the country’s economic issues, especially overcoming the inequalities in socio-economic groups amongst its citizens. One of the stated strategies outlined for obtaining this objective was the development of competitive Bumiputera, or Indigenous people of Malaysia, entrepreneurs. According to BERNAMA (2008), since its inception, a total of 73,334 entrepreneurial start up businesses began under the 9th Malaysian Plan. The Third Industrial Master Plan focuses on long-term global competitiveness through transformation and innovation of the manufacturing and services sectors. This policy emphasizes promoting the Bumiputera Commercial and Industrial Community (BCIC), especially in the industrial manufacturing and services sectors.

In addition, efforts by the Malaysian government in fostering entrepreneurial activities in technology-based industries are implemented in order to increase the number of Bumiputera in industrial sectors. Moreover, lack of technical capabilities, knowledge and skills such as product development, Research and Development (R&D) management, and low technology
(Ismail and Sulaiman 2007) have been identified as major factors that impede the development of Bumiputera technology entrepreneurs. In order to overcome these problems, the 1968 Investment Incentives Act and the 1975 Industrial Coordination Act (ICA) were introduced by the Malaysian government, which requires any technology transfer agreement to be registered with the Technology Transfer Unit in the Ministry of International Trade and Industry. Thus, the government can monitor the progress of technology transfer activities in Malaysia especially between Foreign Multinational Corporations (MNCs) and local technology-based companies. As a result, local technology-based firms could learn and develop their technology from foreign MNCs. The Council of Trust for Indigenous People (MARA) has implemented the technical entrepreneur program in 1997 to expedite the creation of the BCIC. It is envisaged that this program will reduce the current socioeconomic imbalance between Bumiputera and non-Bumiputera in Malaysia.

However, with this significant growth, little empirical research has been conducted on assessing the critical factors that assist Malaysian New Technology-Based Small Firms (NTBSFs) to sustain their business, especially amongst the Bumiputera community (Mohd Osman 2002). Additionally, identification of factors that may influence the sustainability of business amongst new technology-based firms is crucial in investigating the viability of business operation in the long term since there are an increasing number of Malaysian businesses failing to survive from year to year (see Appendix 1). Moreover, based on the Mid-Term Review of the Ninth Malaysia Plan (9MP) in 2006, Bumiputera corporate equity ownership was just 19.4 percent (Economic Planning Unit 2008), which is far below the targeted 30 percent as outlined in the NEP and other current policies such as the IMP3 and the Third Outline Perspective Plan of Malaysia (2001-2010). In fact, there is a significant gap between the Bumiputera and the Non-Bumiputera ownership structure in Malaysia corporate equity (see Appendix 2).

In April 2009, the Ministry of Entrepreneurship and Cooperative Development had recently been abolished from the government administration structure by the newly-appointed Malaysian Prime Minister, Najib Abdul Razak. Furthermore, he announced a new liberalisation policy for the service and financial sectors. This liberalisation policy aims to enhance “equity” within Malaysia’s competitiveness in the global economy. With the introduction of this policy, 27 service sub-sectors were liberalised, which means that the government will not impose any equity conditions in these two sectors and other sub-sectors. As a result, 30% of Bumiputera equity conditions for these sub-sectors were removed. Eventually, this policy will directly affect the business sustainability of Bumiputera entrepreneurs especially in the technology-based industries, which requires a massive amount of initial funding from investors and technology expertise.

Based on an international review of the literature, this innovative conceptual paper aims to identify the critical factors that may assist, or constrain, the sustainability of the Bumiputera NTBSFs. Thus, the research question underpinning this study is “What are the critical factors that may assist, or constrain, the sustainability of the Bumiputera NTBSFs?” Synthesizing the existing body of international literature generated a conceptual model for the purpose of providing a framework to investigate the factors that contribute to, or impede, sustainable business practices of Malaysian Bumiputera NTBSFs. The conceptual model is underpinned by the integration of the resource-based view (RBV) theory and the human capital (HC) theory. The RBV theory accentuates the capabilities and abilities of an organization to achieve its competitive advantage via organizational resources and knowledge (Fahy 2002, 2000; Wernerfelt 1984). The employment of the RBV theory in this study may enhance the literature development as many studies had only been conducted in developed countries such as the United Kingdom, United States, Japan and Australia (Galbreath 2005; Ray, Muhanna and Barney 2005; Fahy 2002). Thus, one would question whether the knowledge principles proposed by studies conducted in developed countries may be applicable to developing countries such as Malaysia. Moreover, previous studies only focused on the western non-indigenous population in developed countries. Therefore factors such as culture and government policies need to be considered in the study of indigenous entrepreneurship in a developing country such as Malaysia. Meanwhile, human capital theory contends that having high human capital through the firm’s founder such as skills and experience, may improve probabilities of sustainability for a firm (Diochon, Menzies and Gasse 2008). Nevertheless, many discussions on the effects of human capital of founders towards business sustainability have been only discussed obliquely by many scholars especially in correlating the founder’s knowledge (West and Noel 2009; Sun, T 2004), skills (Roodt 2005), experiences (Jo and Lee 1996; Reuber and
Fischer 1994), education (Dickson, Solomon and Weaver 2008) and family background (Tervo 2006; Anderson and Miller 2003) with firm’s performance. Furthermore, there is a paucity of studies that explicitly employed human capital theory into business performance and sustainability studies (Brüderl, Preisendörfer and Ziegler 1992) even though human capital is a key resource for a firm (Zigan, Macfarlane and Desombre 2008). Hence, a study on sustainability of business amongst newly-established firms in technology industry is needed in order to reduce the literature gap in human capital theory. Hence the discussion of the theories underpins the conceptual model in identifying the human capital factors based on the individual-specific resources that lead to the sustainability of Bumiputera NTBSFs, particularly after the introduction of the new liberalisation policy by the government.

This paper proceeds as follows. In the next section, we briefly discuss Malaysian Indigenous entrepreneurship in general. Then, an in-depth discussion on business sustainability is provided, which is followed by technology-based firm in Malaysia in order to show the development of Bumiputera NTBSFs in Malaysia. We then present five prominent human capital factors that we believe are the main resources for Bumiputera NTBSFs and discuss their implication towards sustainable business. In the subsequent subsections, a discussion of the main findings and directions for future research concludes the paper.

MALAYSIAN INDIGENOUS ENTREPRENEURSHIP

An ‘Indigenous’ person refers to an individual who is an original owner of a country’s resources, or a descendent (Lindsay 2005). Meanwhile, Dana (2007b) contends that Indigenous nations refers to a group of people whose ancestors were living within a nation-state prior to colonisation or formation of a nation-state. From Malaysia’s perspective, the term Indigenous people is also referred to as Bumiputera, which is literally translated from Sanskrit meaning “son of the soil” (Husin Ali 2008; Omar 2003). According to Lindsay (2005), Indigenous entrepreneurship can be understood by the creation of a new venture in which this new venture is managed and developed by Indigenous people for the benefit of Indigenous people. Foley (2003) argues that the most crucial factor for Indigenous entrepreneurs is the recognition of the business opportunity based on the distinct resources that can create value for the customers, specifically and generally to the community.

Since its independence in 1957, Malaysia implemented significant national strategies in the development of its economy through the engagement of the Bumiputera community into entrepreneurial activity (Othman, Ghazali and Sung 2006; Ahmed, Mahajar and Alon 2005). Commitment to the development of Bumiputera entrepreneurship is evidenced with the establishment of the National Entrepreneurship Institute Entrepreneurship (INSKEN) in 2006 under the Ministry of International Trade and Industry (MITI). This Institute acts as a prominent entrepreneurship training centre in Malaysia so as to support the creation of the Bumiputera Commerce and Industrial Community (BCIC) and to cater for an environment that is conducive to entrepreneurial development in Malaysia. Basically, the development of Bumiputera entrepreneurship was being taken seriously by the government after the ‘bloody riot’ that happened in Kuala Lumpur in 1969 as there was conflict between the Malays and Chinese, especially in terms of economic gaps (Omar 2003). Thus, in 1970 the Malaysian government introduced a prominent policy called the New Economic Policy (NEP) where the essence of the policy aimed to reduce poverty specifically among Bumiputera community, and to achieve more ethnic parity (Dana 2007a). This policy is still applicable as most of the Malaysia’s current policies are formulated based on the NEP. Yet, the introduction of the new liberalisation policy in 2009 may directly affect the sustainable business operations, specifically towards Bumiputera technology entrepreneurs as the 30 per cents of equity corporate ownership has been abolished by the government.

BUSINESS SUSTAINABILITY

Definition and Elements of Business Sustainability

Business sustainability has been defined as the ability of a firm to be able to continue the same type of business into the next generation (Elliott 2005; Mann and Gazzarin 2004). This concept has also been viewed as a measurement of an enterprise’s long-term viability (Ma 1999). Business sustainability may comprise of two main elements: continuation of the same type of business and long-term viability (Mann and Gazzarin 2004; O’Gorman 2001). The continuation of the same business has been associated with reflecting in a firm’s success (Lussier and Halabi 2008). This has been claimed because the simplest definition of a firm’s
success is reflected in the continued business operation or trading activities, whilst failure is equivalent to ceased trading (Simpson, Tuck and Bellamy 2004; Yrle, Hartman and Yrle-Fryou 2000; Watson, Hogarth-Scott and Wilson 1998). The second element of sustainability is concerned with the viability and growth of a business in the long term (O’Gorman 2001). This is because sustainability of a business amongst small firms can be predicted by looking at the capability of firms to operate business in the long term. According to Acquaah (2003), capabilities of firms to survive in a business likely depend on the firm’s corporate management capabilities that enable firms to generate a sustainable competitive advantage. A firm’s possession of resources and capabilities that are valuable, rare, imperfectly imitable and substitutable may be likely to influence a firm’s profitability and performance for an extended period of time (Brand, Preez and Schutte 2007; Acquaah 2003).

From a study conducted by Esteve-Pérez and Mañé-Castillejo (2008), one of the variables that was used in explaining survival outcome is the firms age. Esteve-Pérez and Mañé-Castillejo (2008) argue that the exit probability of new entrants is initially low, then increases to reach a peak and then eventually decreases. In contrast, Honjo (2000) contends that newly-established firms are less likely to survive in an industry specifically in competitively-characterised industries, which have high entry rates, such as the electrical machinery industry and printing industry. Moreover, these various findings show that the survival rate of newly established companies may not be only affected by the number of years that company is in business, but also may be affected by other external factors such as the industry’s competitive environment. For example, the Asian financial crisis in 1997 had negatively impacted firms (De Sausmarez 2007). This could be explained when the currencies of several countries rapidly depreciated; many firms were not able to raise funds for buying foreign currency, thus eventually affecting the firms’ capability to obtain resources and pay debts from/to other foreign firms (Butler and Sullivan 2005).

Main Concepts of Business Sustainability

Based on previous studies on business sustainability, the concept of a sustainable business can be understood by two main perspectives as illustrated in Figure 1 (Waite 2006; Mann and Gazzarin 2004): societal sustainability and enterprise sustainability. The first concept concerns the development of a business towards societal contribution such as corporate social responsibility and environmental management (Enquist, Edvardsson and Sebbatu 2007; Tilley and Young 2006; Funk 2003). Meanwhile, the second concept refers to the development of a business that directs to the sustainability for the firm itself and deals with the firm’s viability and profitability (Froschhesier 2009; Esteve-Pérez and Mañé-Castillejo 2008; Villalonga 2004; Baaij, Greeven and Van Dalen 2004; Acquaah 2003). Many publications refer to the first concept when discussing business sustainability amongst firms (Mann and Gazzarin 2004), yet this paper will only focus on the second concept of business sustainability, which emphasizes the firms operational perspective, specifically from the aspect of firm’s performance (Waite 2006), profitability (Acquaah 2003), growth (Audretsch 2004; O’Gorman 2001), productivity (Ahn and Meeks 2008), and competitive advantage (Baaij et al. 2004). The selection of the second concept of sustainability may provide a clear indicator in explaining the business sustainability issue amongst Bumiputera entrepreneurs in business activities rather than societal sustainability. In addition, firm’s success reflects the business sustainability in which economic performance indicators such as a firm’s earnings, growth and performance normally provides global measures of success as these indicators are quantifiable and relative to the sample used (Reijonen and Komppula 2007; Waite 2006; Simpson et al. 2004). Hence, the second concept is chosen as the focus of this research due to this justification.

Indicators of Business Sustainability for an Enterprise

There is a need to identify factors that may influence business sustainability according to the economic performance indicators. This is because the identification of these factors is
pertinent in explaining the relationship between identified factors and business sustainability and eventually helps in determining the important factors influencing the viability of business in the long term. As a result, a set of business sustainability indicators will be used in determining and explaining the relationship between factors and business sustainability. For instance, founder’s skills may be one of the important factors influencing business sustainability of business due to its positive implication towards a firm’s performance and competitive advantage. In addition, according to Robson, Prabhu and Mithell (2002), business sustainability from a firm’s operational perspective can be also measured via performance, business growth, competitive advantage and impact of change. These measurements were developed by Robson et al. (2002) based on defined areas that can represent business sustainability and are consistent with the range of success measures proposed by Liburd and Zairi (2001). Some other aspects will be also taken into consideration in explaining the sustainability of business such as firm’s productivity and profitability. Esteve-Pérez and Mañez-Castillejo (2008) argue that a firm’s productivity is important in determining the firm’s efficiency level and eventually will predict the probability of firm survival in a business. Firm’s productivity is based on the capability of a firm in managing firm’s resources (inputs) into outputs, either as products or services. This may also reflect how efficient a firm is in managing its resources in operating business. Moreover, if a firm is managed to operate business efficiently, operating costs can be also reduced and eventually profitability will increase. As a result, firm’s productivity may also be viewed as one of the indicators of business sustainability as it reflects firm’s efficiency and profitability.

Esteve-Pérez and Mañez-Castillejo’s (2008) study also suggests that more productive firms experience a lower probability of exit from the industry due to the firm’s capability in operating business efficiently. This finding is supported by Ahn and Meeks (2008) who contend that sustainable productivity may influence a firm’s success in science-based industries by looking at the operational capabilities of a firm especially in discovering and developing new products. The introduction of new products by a firm may provide competitive advantage. On the other hand, persistence of firm-specific profit may also be used for business sustainability measurement (Villalonga 2004) since the level of a firm’s profitability could affect firm survival (Esteve-Pérez and Mañez-Castillejo 2008). A firm’s profitability may determine the ability of a firm to generate income that can be used for firm’s business operations such raw material procurement and getting consultancy services. Based on the discussion on the indicators of business sustainability, specifically from the economic perspective, this paper will further explore human capital factors influencing the sustainability of business amongst Malaysian Bumiputera technology-based firms. Hence, the discussion will start with the concept of technology firms; specifically from the Malaysian perspective in order to understand the nature of firms investigated and then relate it with human capital factors, which may affect their business sustainability.

TECHNOLOGY FIRMS

It is becoming increasingly difficult to ignore the importance of technology, especially towards the growth of national and international economies (Bantel 1997). In fact, the literature on ‘high technology’ portrays several perspectives to different scholars, entrepreneurs or policy makers as there has been much debate on a suitable universal definition of high technology (Baruch 1997; Riche, Heck and Burgan 1983). For example, from the governments’ perspective, technology-based industries are associated with economic growth that might help reduce unemployment (Autio and Parhankangas 1998) and boost exports (Aggarwal 2002). Meanwhile for industry, high technology refers to new products and processes, while academia associates it with funding for research and development (Markusen, Hall and Glasper 1986). As a result, the importance of many newly-established technology-based small firms is a special case worth investigating especially from a perspective of a developing country since the technological activities of Small and Medium Enterprises (SMEs) have received considerable attention from researchers and policy makers since the mid-1980s (Taymaz and Üçdögruk 2009). Nevertheless, the definition of what is regarded as a high-technology firm is still quite vague as there is no consensus and/or measurable criteria of this definition in the literature (Baruch 1997). Yet much literature refers to the fact that most high technology entrepreneurship researchers would define a technology firm based on the organisation’s research and development (R&D) activities or investments (Knight 1986), the composition of the firm’s human resource and also the area of activity of the firm (Baruch 1997). According to Balkin, Markman and Gomez-Mejia (2000), a commonly accepted approach to define a high technology firm is normally based on the degree of expenditure on R&D as a percentage of
sales in which it is estimated greater than five percent. Based on a study conducted by Oakey and Mukhtar (1999), high-technology small firms are classified as having dependency on the amount that each firm spends on R&D activities. This is because high-technology small firms normally spend large amounts of money compared to lower technology small firms.

From the technological perspective, a high technology firm is a firm that is established for the purpose of exploiting an invention or technological change (Delapierre, Madeuf and Savoy 1998) in which the firm normally uses complex technology in operating its business (Knight 1986). Park (2005) argues that high technology firms are more precisely referred to as a firm that invests in, and uses, rapidly evolving technology as an important element of its product development, production or marketing process. These definitions of high technology depict one important factor is the application and exploitation of technology in running a business. Meanwhile, from the Malaysian perspective, a high-technology based firm as outlined by the Malaysia Industrial Development Authority (MIDA) must fulfill two main criteria in applying the Pioneer Status incentive for high technology firms (a company granted Pioneer Status enjoys a five-year partial exemption from the payment of income tax); first, the percentage of local R&D expenditure to gross sales should be at least one percent on an annual basis. Secondly, the composition of human resources in a firm should comprise at least seven percent of scientific and technical staff with degrees/diplomas and a minimum of five years’ experience in a related field. For the first criteria, companies have three years from their date of operation or commencement of business to apply for this incentive.

Based on these two indicators, the technology-based industry can be heralded as less developed compared with other Asian newly industrialized economies (NIEs), namely Hong Kong, South Korea, Singapore and Taiwan. Based on the World Development Indicators in 2003, Felker and Jomo (2007) argued that the position of Malaysia in scientific and technological activity remains below the first generation NIEs (except Hong Kong) since Malaysia’s national R&D spending only accounts for 0.5 percent from its Gross Domestic Product (GDP), which is lower than South Korea (2.68 percent) and Singapore (1.88 percent).

In addition, the publication of Science and Technology (S&T) journal articles also depicted a wide gap between Malaysia and other countries in terms of number of S&T articles published. In 2003, Malaysia just managed to produce 416 journal articles; in contrast, the number of S&T journal articles published in Singapore and South Korea were 1653 and 6675 respectively (Felker and Jomo 2007). Due to the lack of technological and scientific activities in Malaysia as mentioned above, this scenario eventually could affect the development of technology-based firms in Malaysia. This paper aims to develop a framework that explains and predicts the business sustainability of Bumiputera technology-based small firms in Malaysia by focusing on founder-specific aspects such as skills, knowledge, education, motivation and experience.

HUMAN CAPITAL FACTORS INFLUENCING BUSINESS SUSTAINABILITY: FOUNDER-SPECIFIC RESOURCES

To date, the identification of critical success factors that may help the sustainability of small firms has been conducted by many scholars, yet only a few of these scholars focused on technology-based industries (Irene Hau-Siu and Shan 2007; Kakati 2003). Furthermore, there is a paucity of studies (if any) on probable factors influencing technology-based small firms, especially in the Malaysian context (Mohd Osman 2002). Building on the identification of the types of resources needed by entrepreneurs; particularly in technology-based industries, this research proposes the exploration of firm specific and country specific resources under RBV theory as proposed by Fahy (2002) and Galbreath (2005), on a firm’s success, growth and performance. To this, the researchers added the third dimension, the types of resources, which addresses founder-specific resources. In this study, the researchers seek to identify and discuss the elements under the scope of the founder-specific resources that may be prominent for technology firms to survive in a competitive. Founder-Specific Resources (FSR) refers to any resources that are based on the individual founder of a firm. According to Alvarez and Busenitz (2001), entrepreneurs have unique individual-specific resources that will assist with the identification of business opportunities and also lead to the effort in bringing together other resources that are needed for creating and sustaining its business operation. As a newly-established company in technology-based industries, the role of the founding entrepreneur is vital, especially in developing a solid framework of a firm’s entrepreneurial management (Drucker 1985). As a result, the creation and development of a firm’s competitive advantage amongst new technology firms is likely to be based upon the founder’s abilities and unique resources to differentiate the company’s technology with other firms (Cooper and Bruno 1977).
These unique individual-unique resources comprises of: the personal qualities (Yusuf 1995); characteristic of the founder (Reijonen and Komppula 2007; Walker and Brown 2004); and attributes of the entrepreneur that may affect the firm’s sustainability.

According to Oakely (2003), the ‘brain’ of the founding entrepreneur is contended to be one of the crucial assets for technology-based firms, especially in determining the culture, goals, structure and direction of the company in the industry. That is, the capabilities, attitudes, motives and personal qualities of the founder become the key resources for the new technology firms and have a significant impact on the firm’s success (Reijonen and Komppula 2007). This is because the creation of the firm’s products and services are predominantly based on the founder’s ideas. Moreover, the founder’s ideas and leadership are a significant resource to the formulation of the firm’s business strategy that eventually affects its business sustainability and positioning in the industry. For example, Apple Inc, considered as one of the world leaders in consumer electronic and software product’s, was heavily influenced by its founder, Steve Job. In fact, Hof (2009) reported in Business Week on the 14th of January 2009 that the stock price of the Apple Inc dropped due to the announcement of Job’s medical leave thus illustrating the significant role of the firm’s founder.

Skills and Business Sustainability

The capabilities of entrepreneurs in managing their business operation are usually influenced by their skill level. In managing an entrepreneurial technology firm, technology-based entrepreneurs require several skills (Almus and Nerlinger 1999; Cooper and Bruno 1977) that are considered crucial in the process of product development and commercialisation. As mentioned by Luk (1996), these skills can be categorised into aspects such as decision-making skills, interpersonal skills, analytical skills, and also communication skills. Further, Luk’s study found that good decision-making skills were the most prominent aspect to business success. This might be true because venturing into a risky and uncertain technology-based business requires entrepreneurs to make a decision by evaluating their capabilities to create a product or service that can generate a sustainable profit for them.

Moreover, the initial process of a new technology-based firm in starting a business requires technology entrepreneurs to consider and predict the feasibility and viability of the business by examining the needs and wants of their potential customers, and the accessibility to the raw materials required. As a matter of fact, some products produced by new technology-based firms might be novel to these customers; hence the customer acceptance for this novel product is still uncertain, such as the introduction of the new iPhone 3G S by Apple Inc in June 2009. This newly-launched product still has an uncertain market demand from potential customers. In addition, the entrepreneur would also need to consider several business options before making a final decision to venture into a technology-based business. Normally, the best business decision that entrepreneurs make is based on their skills in managing the business from management and technical perspectives, and based on other economic factors such as wealth searching and unemployment issues in a country (Eisenhauer 1995). Therefore, this study proposes that having an adequate level of entrepreneurial skills may help entrepreneurs in sustaining their business (Coy, Shipley, Omer and A. Khan 2007). Entrepreneurial skills are defined as skills related to identifying business opportunities and managing these opportunities into a sustainable income (Liñán 2008).

Experience and Business Sustainability

A large and growing body of literature examined the implications of founding entrepreneurs’ experiences towards firm success (Uchasaran, Westhead, Wright and Flores 2009; Reuber and Fischer 1994). The findings showed a mixed and inconsistent result across these studies as the definition and indicators of entrepreneurs’ experience were varied (Reuber and Fischer 1994). Yet, there was consensus that entrepreneurial experience and management experience were considered as having positive implications on the firm’s success or failure (Luk 1996; Yusuf 1995). An early study conducted by Cooper and Bruno (1977) on the success amongst high-technology firms in San Francisco showed that a typical new firm that was started by an entrepreneur with little personnel and managerial experience would face a high probability of failure in operating the business. This finding is supported by other recent studies (Song, Podoyntsyna, Bij and Halman 2008; Reijonen and Komppula 2007) whereby it was claimed that prior industry and management experience play a significant role in helping entrepreneurs to operate and sustain their business. Cooper et al. (1988) supported this finding and contended that those entrepreneurs who had relevant experience and had owned previous
Knowledge and business sustainability

Entrepreneurial knowledge is defined as meaningful information in a specific area possessed by an individual (Sun, M and Tse 2009) via learning and experience (West and Noel 2009). According to a seminal study by Polanyi and Prosch (1975), every act of acquiring and applying personal knowledge will eventually lead to the formation of an appropriate standard of excellence. Therefore, having a specific area of knowledge might help an individual to perform an action that can lead to an outstanding achievement in that area. A similar situation may also be applied to an entrepreneur as they usually have idiosyncratic entrepreneurship knowledge of managing a business, which eventually will help them to succeed.

According to Nonaka (1994), some of the knowledge is tacit in nature where this knowledge cannot be transferred to another person. An entrepreneur’s tacit knowledge usually cannot be taught yet this type of knowledge is normally considered a crucial resource in the development of other resources (West and Noel 2009) and a differentiation strategy (Wiklund and Shepherd 2003), which differentiates their business from their competitors (uit Beijerse 2000). The entrepreneur’s knowledge may be described as a pool of entrepreneurial information and includes the understanding to venture into a business, to manage business operations and also the better way to manage business growth, especially in terms of new product development and the invention of new technology (West and Noel 2009). In addition, the founder’s entrepreneurship knowledge will guide the developmental resource of venture operations (West and Noel 2009), such as resource acquisition, business networking and opportunity recognition. Omerzel and Antoncic (2008) mention that entrepreneurs with more knowledge will be able to adapt to changes in the market structure due to the globalised environment. This is because these entrepreneurs can use their entrepreneurial knowledge for managing the complex business environment (uit Beijerse 2000). These entrepreneurs reduce their level of uncertainty in managing the business due to the fact that they possess knowledge on how to deal with the competitive business environment (Omerzel and Antoncic 2008). By having this type of knowledge, the entrepreneur is assumed to be more successful than entrepreneurs who do not possess this type of knowledge. Previous studies showed that entrepreneurial knowledge had a positive effect on small business firms (Sun, M and Tse 2009; Omerzel and Antoncic 2008). Moreover, venturing into technology-based industries requires the entrepreneur to have a variety of knowledge other than entrepreneurial knowledge such as technical knowledge due to massive R&D activities. Thus, this study proposes that knowledge and intuition, particularly relevant to entrepreneurship, is crucial for an entrepreneur to sustain technology-based business as the economic development is currently driven by knowledge-based economy.

Motivation and Business Sustainability

Motivation, in general, can be defined as the process by which the effort of an individual is directed and sustained towards achieving a specific goal (Robbins, Bergman, Stagg and Coulter 2009). There are certain types of needs that are required by a human being, especially when it comes to fulfilling basic needs of an individual, which normally comprises of clothes, food and shelter. In reality, these needs affect the way people goals in their life and also influence on what make people want to work. As a result, each individual would have different motivational drives in their life. Yet, overall motivation varies from situation to another situation. This also applied to individual entrepreneurs who venture into a new business depending on their goals (Yusuf 1995). Some of the entrepreneurs venture into a business in order to change their life, or they want to increase their wealth, or want to help their families.
Thus a variety of drivers of entrepreneurial motivation in operating a business may affect firm success. For instance, if entrepreneurs put all their heart and energy to achieving their goals, their business will ultimately be fruitful and can be sustained across any kind of situation or time. According to Cooper (1988), a remarkable degree of optimism can be seen from an entrepreneur who has already put a full commitment to venture into a business.

Moreover, if the entrepreneur has high motivation, they will not easily give up operating the business and cease their business as it requires the firm to face an uncertain situation, where the outcome is ambiguous since the entrepreneur does not know the acceptance of the products by potential customers. This motivation also indirectly stimulates the entrepreneur to learn every single aspect of the business that they see crucial for success, such as marketing and financial management. In such a case, the direction of a firm is directed by the entrepreneur’s inspiration (Walker and Brown 2004) because the decision as to, whether the owner wants to enlarge the firm or just stick with the status quo is depending on the level of motivation and goal in operating a business. Hence, entrepreneurs’ high-level of motivation may have a positive relationship on the sustainability of a firm.

**Education and Business Sustainability**

The level of education of founding entrepreneurs generally has a significant positive implication towards business success (Walker and Brown 2004). As analysed by Dickson, Solomon & Weaver (2008), based on in-depth literature surveys, they concluded that there is strong evidence supporting the relationship between levels of general education and entrepreneurial success. Basically, the level of education of an individual will portray the individual knowledge and thought on a specific field. For example, students who study accounting are expected to become competent accountants or at least have a sound knowledge of financial management compared with students studying art courses. Yet, based on a study conducted by Douglass (1976), there were some cases where education does not have a direct implication on business success (Coy et al. 2007).

One explanation for this finding could be that other factors such as a founder’s passion in inventing innovative products, a propensity to taking risks, personal satisfaction and being challenged by their own capabilities may influence an entrepreneurs’ success in technology-based firms. An example is, Bill Gates, who quit his studies at Harvard University in order to fulfill his passion in developing a new invention in the computer industry. According to Coy et al (2007), the implications of an entrepreneur’s level of education toward business success was found to be insignificant to Pakistani entrepreneurs as over half of the respondents mentioned that higher education level did not contribute to their business operation. Most technology-based entrepreneurs are predominantly knowledge-workers or scientifically qualified staff (Oakey 2003) due to the nature of the technology industry. As a result, the education level of entrepreneurs in technology-based industries would not become a main resource to the sustainability of the business since every entrepreneurs has a higher level of education. As proposed by Barney (1991), one of the criteria of resources that can lead to the firm’s competitive advantage is rareness of the resource. The level of education amongst founders in technology-based industries can be an ultimate resource for the creation of a competitive advantage as this resources is owned by most of the entrepreneurs (West and Noel 2009).

Nonetheless, the above argument is still debateable since the founders’ education will certainly guide the individual entrepreneur in operating their business, and in fact, having a higher degree of education could lead to the creation of a business by the entrepreneurs (Dickson et al. 2008) as education tends to increase one’s sense of efficacy and self-esteem, which in turn increases one’s ability to perceive opportunities and pursue them (Robinson and Sexton 1994). Robinson and Sexton (1994) conducted a study using U.S. census data whereby they found that a general education amongst entrepreneurs has a strong positive influence for the entrepreneur to venture into a business and gain success. Moreover, formal education is claimed to increase the probability of an individual to venture into a business. In Korea, a study conducted by Jo and Lee (1996) also uncovered that an entrepreneur’s education level was positively related to business performance. Therefore, the level of education of founding entrepreneurs can be hypothesised as one of the main factors contributing towards business sustainability.

**CONCLUSION**

The in-depth international literature analysis presented in this paper uncovered the factors influencing sustainability of Malaysian Bumiputera new technology-based small firms
include an entrepreneur’s skills, experience, knowledge, motivation, and family background. From this analysis and the consolidation of the literature, the researchers propose the study’s conceptual model comprised of the five main founder-specific resources that may be crucial sources for technology-based entrepreneurs to sustain their business.

The identification of these factors facilitates the first step in the formation of a Bumiputera sustainability framework for Malaysian Bumiputera technology-based small firms that facilitates in understanding the complex factors of business development and growth. As mentioned before, one would question whether the knowledge principles proposed by previous studies which are predominantly focused on the western non-indigenous population in developed countries may be applied to developing countries such as Malaysia. Hence, the conceptual model as shown in Figure 1 provides theoretical and practical implications for Bumiputera NTBSFs by providing a foundation for future Malaysian Bumiputera NTBSFs research and the development of National Policy as well as being considered by other Indigenous entrepreneurs in their developing countries.

**Figure 1: Proposed Conceptual Framework**

Based on the proposed conceptual framework, the following hypothesis has been generated as a guideline for this research:

**H1:** Founder-specific human capital factors are positively related to the sustainability of business amongst Malaysian Bumiputera TBSFs

Consideration to the employment of multi-method studies in this field would be worthwhile as: (a) in applied disciplines like entrepreneurship field, the methodologies used for developing theory from the 1960s and 1970s have predominantly taken quantitative approaches (Torraco 2005); and (b) most of the early studies of RBV theory were conducted by utilizing only qualitative analyses with emphasis on exploratory studies (Barney 2001; Alvarez and Busenitz 2001; Fahy 2000; Wernerfelt 1995; Conner 1991; Barney 1991; Wernerfelt 1984). Yet, focusing on only using quantitative approaches or qualitative approached will eventually lead to methodological strictures that will only favour validation aspects rather than the usefulness of a theory development (Weick 1989). Moreover, Weick (1989) also stated that undertaking multiple independent thought trials assists good theory building and considering applying any alternative theorizing activities such as conceptual development and speculation thought. Therefore, mixed methods studies offer the potential to build substantial theoretical understanding (Eacott 2008), particularly within the realms of entrepreneurship literatures.

Perhaps this early approach may be justified by saying that earlier studies were concerned in developing new knowledge of RBV as this theory was introduced in 1984 by Wernerfelt in an attempt to address and close the knowledge gap of RBV theory. However, once the theory was comprehensively explored and established, successive studies focused on the application of RBV theory in which they examined its practicality in business practices such as the Information Technology field (Huang, Ou, Chen and Lin 2006; Ray et al. 2005). Hence to test the theory further and establish its rigor in both qualitative and quantitative paradigms, it is logical to test the theory through a multi-method research design.

Future research may consider focusing on the implications of an entrepreneur’s knowledge towards the sustainability of Bumiputera entrepreneurs in technology-based
industries utilizing theories such as Knowledge-Based View (KBV) or Knowledge Spillover Theory of Entrepreneurship.

NOTES

For the purpose of this study, Malaysia Bumiputera NHTSFs are referred to as a Bumiputera company (according to the MITI, a Bumiputera company is a company that is 100% owned by Bumiputera and at least 51% of its board of directors and staff are Bumiputera) that are involved in any of the technology industries within six to eight years of its operating age (Song et al. 2008).

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**APPENDICES**

**Appendix 1: Number of Winding Up Companies in Malaysia**

<table>
<thead>
<tr>
<th>Year</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Companies wound up</td>
<td>955</td>
<td>1276</td>
<td>1450</td>
</tr>
</tbody>
</table>

Source: Companies Commission of Malaysia (2008)

**Appendix 2: Comparison of Share Capital Ownership of Limited Companies between Bumiputera and Non-Bumiputera from 1985 to 2006**