The Factors that Influence the Sustainability of Malaysian Bumiputera (Indigenous) New Technology-Based Small Firms

A thesis submitted to the RMIT University
in fulfilment of the requirement for the degree of
Doctor of Philosophy

Umar Haiyat Abdul Kohar
Bachelor of Corporate Administration (Hons.)
Master of Business Administration

School of Management
College of Business
RMIT University, Melbourne

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STATEMENT OF AUTHORSHIP

I certify that except where due acknowledgement has been made, the work is that of the author alone; the work has not been submitted previously, in whole or in part, to qualify for any other academic award; the content of this thesis is the result of work, which has been carried out since the official commencement date of the approved research program; and, any editorial work, paid or unpaid, carried out by a third party is acknowledged.

Umar Haiyat Abdul Kohar

21 November 2013
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DEDICATION

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<tr>
<td>10MP</td>
<td>Tenth Malaysian Plan (2010-2015)</td>
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<tr>
<td>BCIC</td>
<td>Bumiputera Commerce and Industrial Community</td>
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<tr>
<td>Biotech Corp.</td>
<td>Malaysian Biotechnology Corporation</td>
</tr>
<tr>
<td>BITE</td>
<td>Bumiputera IT Entrepreneurship</td>
</tr>
<tr>
<td>BNM</td>
<td>Bank Negara Malaysia</td>
</tr>
<tr>
<td>CCM</td>
<td>Companies Commission of Malaysia</td>
</tr>
<tr>
<td>EKUINAS</td>
<td>Ekuiti National Berhad</td>
</tr>
<tr>
<td>EPU</td>
<td>Economic Planning Unit</td>
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<tr>
<td>ETP</td>
<td>Economic Transformation Programme</td>
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<td>FSFs</td>
<td>Founder-Specific Factors</td>
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<tr>
<td>FSRs</td>
<td>Firm-Specific Resources</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>HCT</td>
<td>Human Capital Theory</td>
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<tr>
<td>ICT</td>
<td>Information and Communication Technology</td>
</tr>
<tr>
<td>ILO</td>
<td>International Labour Organisation</td>
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<td>IPR</td>
<td>Intellectual Property Right</td>
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<td>IMP3</td>
<td>Third Industrial Master Plan</td>
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<td>IPO</td>
<td>Initial Public Offering</td>
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<td>MARA</td>
<td>Council of Trust for Indigenous People (Bumiputera)</td>
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<tr>
<td>MASTIC</td>
<td>Malaysian Science and Technology Information Centre</td>
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<td>MATRADE</td>
<td>Malaysia External Trade Development Corporation</td>
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<tr>
<td>MCCM</td>
<td>Malay Chamber of Commerce Malaysia</td>
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<tr>
<td>MDeC</td>
<td>Multimedia Development Corporation</td>
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<tr>
<td>MECD</td>
<td>Ministry of Entrepreneurship and Cooperative Development</td>
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<tr>
<td>MIDA</td>
<td>Malaysian Industrial Development Authority</td>
</tr>
<tr>
<td>MITI</td>
<td>Ministry of International Trade and Industry</td>
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<tr>
<td>MOSTI</td>
<td>Ministry of Science, Technology and Innovation</td>
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<tr>
<td>MRRD</td>
<td>Ministry of Rural and Regional Development</td>
</tr>
<tr>
<td>MSC</td>
<td>Multimedia Super Corridor</td>
</tr>
<tr>
<td>MTDC</td>
<td>Malaysian Technology Development Corporation</td>
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<tr>
<td>NEAC</td>
<td>National Economic Advisory Council</td>
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<tr>
<td>NEM</td>
<td>New Economic Model</td>
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<td>Social Capital Theory</td>
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<td>SIRIM</td>
<td>Standards and Industrial Research Institute of Malaysia Berhad</td>
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<td>SMEs</td>
<td>Small and Medium Enterprises</td>
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<td>SME Corporation Malaysia</td>
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<td>TEKUN</td>
<td>Entrepreneur Group Economic Fund</td>
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<td>UMNO</td>
<td>United Malay National Organisation</td>
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<tr>
<td>UN</td>
<td>United Nations</td>
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<tr>
<td>UNWCED</td>
<td>UN World Commission on Environment and Development</td>
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ABSTRACT

This thesis explored the phenomenon of business sustainability amongst the Indigenous (Bumiputera) in Malaysia. This study adopted three established theories (Resource-Based View, Human Capital Theory and Social Capital Theory) and its impact on a developing country where the Indigenous people are the majority in that country. These theories have typically been applied in developed countries, especially in western culture.

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. Upon independence of Malaysia, it was agreed among representatives of the three major ethnic groups (Malays, Chinese, and Indians) that the Malays would be granted certain ‘special rights’ in the area of politics, religion and economics in order to correct existing economic inequalities. As a result of this, the government placed emphasis on enhancing Bumiputera participation in high-income occupations, increasing effective Bumiputera ownership and participation in the corporate sector, as well as eradicating poverty and narrowing inequality of income among races.

The importance of entrepreneurial activities in Malaysia may also be evaluated with the introduction of two prominent recent government policies; the Tenth Malaysian Plan and the Third Industrial Master Plan. However, a significant number of Bumiputera entrepreneurs have not been able to sustain their business operations despite the government’s comprehensive entrepreneurship training and development programs. This phenomenon is more prevalent in the technology-based industry, whereby the participation of Bumiputera is less encouraging. Further, there have been few discussions of the implications of sustainability at the level of a single enterprise. Therefore, a study on the sustainability of Malaysian Bumiputera technology-based small firms will fill gaps in explaining the nature of sustainability at the level of a single enterprise in a technology-based industry by the Indigenous people of the country.

Based on an inductive qualitative approach, 24 Malaysian Bumiputera technology-based entrepreneurs were interviewed. Additionally, 15 business stakeholders that comprised government officers, academics and policians were also interviewed in order to further
understand factors influencing these Bumiputera entrepreneurs in the technology-based industry. Two main techniques of data analysis were employed in this thesis: thematic analysis and content analysis. The researcher employed both a manual hand coding technique and computer software, specifically NVivo Version 9 (later version 10) to analyse the data. Utilising manual and NVivo approaches ensured that no interpretation of the data was overlooked.

The interviews uncovered three main themes that influence sustainability of Bumiputera in business: founder-specific factors; firm-specific resources; and business support and assistance. The founder-specific factors (FSFs) refer to any resource that has its origins in a firm’s individual founder. In this thesis, three main aspects of founder-specific factors were investigated: founder attributes; founder’s human capital; and founder’s social capital. The identification of Bumiputera entrepreneur’s personalities and their entrepreneurial motivations uncovered some of the reasons why these individuals took risks to venture into business. The evaluation of founder’s human capital (e.g. formal educational background and prior experiences) and founder’s social capital (e.g. family support and peers support) towards sustainability of Bumiputera entrepreneurs explains some of the reasons why Bumiputera technology entrepreneurs need to possess such factors in sustaining the business. The firm-specific resources (FSRs) refer to any resource (FSRs) that could be linked to sustained competitive advantage of a firm. For this thesis, the firm’s social capital, firm’s intangible resources and capabilities, and firm’s business strategies were examined in order to see how these resources could be exploited by the entrepreneurs in sustaining the business. In this respect, having good social networking skills and business reputation emerged as the firm’s social capital that has been perceived as crucial for the sustainability of Bumiputera firms. Additionally, a firm’s R&D capabilities and innovative cultures appeared as important resources in addition to having a set of business strategies in sustaining the business. The last aspect uncovered in the analysis was business stakeholder support that uncovered how these three main stakeholders (government agencies, academics and policy makers) played their role in assisting Bumiputera entrepreneurs to sustain their business through a comprehensive business support system.

The revisited conceptual framework of this thesis provides direction for Indigenous entrepreneurs in developing countries to operate and sustain its business operations in the
challenging technology-based business environment. The combination of findings in this thesis provides implications for the body of knowledge as well as practical contributions. From a theoretical perspective, findings generated from this thesis contribute to the extension of the entrepreneurship literature, which focuses predominantly on western, non-Indigenous population samples in developed countries. Second, the findings also provide a significant theoretical contribution to the field of entrepreneurship research, especially to the body of Indigenous entrepreneurship knowledge by exploring factors influencing the sustainability of Indigenous enterprises in the technology-based industry, which to the researcher's knowledge, has seldom been addressed in the Indigenous entrepreneurship literature. Third, the employment of multiple case studies used in this study has provided a richer understanding of the factors influencing sustainability of Bumiputera NTBSFs. Indeed, the originality of this current thesis is based on the large amount of data gathered in the research field through the triangulation of findings from various cases, which explains and further justifies several phenomena or issues uncovered in this thesis.

From a practical perspective, this thesis guides entrepreneurs to identify their strengths and weaknesses with regard to the element of entrepreneurial personalities and management skills, which are crucial for them. This thesis benefits government and policy-makers to identify the areas that they need to focus on in promoting entrepreneurial activities to the public, specifically in terms of designing governmental initiatives to promote new firm creation, not only regarding financial support but mainly regarding long-term policies that change beliefs about entrepreneurial behaviour. Lastly, academics in higher education institutions could use these findings to enhance entrepreneurship-based curriculum by ensuring that the curriculum taught at the university are relevant with current industrial needs.
LIST OF PUBLICATIONS

(i) Refereed Journal Publications


(ii) Refereed Conference Proceedings and Abstracts


CHAPTER 1

INTRODUCTION

1.0 INTRODUCTION

The purpose of this chapter is to provide an overview of the development of entrepreneurship in Malaysia, specifically in regard to the participation of Bumiputera (Indigenous) in economic activities. This chapter explains the theoretical background of the thesis, the research objectives and questions, scope of the research and the structure of the thesis.

1.1 RESEARCH BACKGROUND

This thesis is a study exploring factors influencing the sustainability of Malaysian Bumiputera in technology-based firms. It also seeks to uncover the support and assistance provided by the business stakeholders towards the sustainability of the firms.

Nowadays, the field of entrepreneurship has been considered as one of the important areas in driving a country’s economic growth, specifically in regard to job creation (Delapierre, Madeuf & Savoy 1998; Malchow-Møller, Schjerning & Sørensen 2011) and economic development (Wennekers & Thurik 1999; Audretsch 2007; Bjørnskov & Foss 2013). Further, the entrepreneurship field has also been regarded as an important instrument to improve the socioeconomic status of a society (Bagheri, Lope Pihie & Krauss 2013), whereby the entrepreneurship activities can elevate the society’s abilities to achieve their desired social change (Hjorth 2013) such as to eradicate poverty amongst less advantaged society through transformative entrepreneurship (Tobias, Mair & Barbosa-Leiker 2013). Consequently, the field of entrepreneurship has currently received much attention from many parties (Aldrich 2012) such as public institutions (Michael & Pearce II 2009), university academics (Audretsch, Leyden & Link 2012; Wright, Mosey & Noke 2012) and policy makers (Mason & Brown 2013), whereby this can be translated in terms of increased entrepreneurial activities such as research, publications, funding and policies.

In fact, the development of entrepreneurship, as both activity and theoretical research, has also grown in importance in Malaysia (Pramanik 1997; Abdullah & Muhammad 2008).
This is confirmed by the increase of various training and development programs, mechanisms and policies such as business advisory services as well as government infrastructure and funding (Mat Zain & Senteri 1998; Kechot & Khalifah 1999; Haji Ismail, Mohd Zain & Ahmed 2006). This thesis posits that Malaysia’s economic history has to be appreciated in order to have a better understanding of the current context of entrepreneurship in Malaysia as it reflects the developmental phase of entrepreneurship policies from pre-independence until now.

During the British Colonial rule of Malaya (prior to 1957), in order to ease administrative operations as well as to ensure stability amongst multiethnic Malayan society, the practice of ‘divide and rule’ policy was introduced by the British Colonial Government by segregating the Malaysian society’s economic activity along racial lines (Hirschman 1986; Jomo 1989; Omar 2003). Through this administrative strategy, the British made a decision to import Chinese migrants to work in the tin mines and Indian migrants to work in rubber estates. Besides, the British also allowed the Chinese to start-up businesses such as petty trading and shopkeeping. Meanwhile the Malays, the Indigenous population (Bumiputera), dominated the agricultural sector and were the only ethnic group that had the opportunity to be employed by the British into an administrative division. However, in most cases, only the royal families and upper-class Malays were accepted into British administrative jobs, whilst the majority of Malays lived as farmers and thus earned a modest income.

The segregation of the socioeconomic activities along the racial lines has subsequently shaped the Malaysian society-identity formation (Gomez 2012). Consequently, Malaysian society became multi-layered in terms of race and economic wealth with the majority of Indigenous Malays being at the lower societal level (Ariff & Abubakar 2003; Othman, Ghazali & Cheng 2005). This is because during the pre-independence period there was little participation amongst the Malays in economic activities, in both employment and ownership (Kechot & Khalifah 1999) due to the domination of foreign enterprises as well as ethnic Malaysian Chinese in certain manufacturing activities; also the general Malay attitude was to be risk averse (Gomez 2013).

Upon independence of the Federation of Malaya in 1957, it was agreed among representatives of the three major ethnic groups (Malays, Chinese and Indians) that in return for the rights of citizenship and cultural and language protections afforded to non-
Malays; the Malays would be granted certain ‘special rights’ in the area of politics, education, public services, religion and economics in order to correct existing economic inequalities (Faruqi 2004). This discrimination was viewed by the government as a good attempt to create a more equitable society, especially by helping the Malay Bumiputera to stand on par with other races. Accordingly, since its independence, Malaysia has implemented significant national strategies in the development of its economy, particularly through the engagement of the Bumiputera (Indigenous) community into entrepreneurial activity (Lim 2000; Ahmed, Mahajar & Alon 2005; Othman, Ghazali & Sung 2006).

This became apparent when the interethnic economic disparity between the predominantly Malay Bumiputera and predominantly Chinese non-Bumiputera triggered serious race riots in 1969 (Gomez 2012, 2013). In response to this critical incident, the Malaysian government formulated the New Economic Policy (NEP) in 1970. This prominent policy responded to the economic inequalities that occurred between the Malays and other races (particularly Chinese non-Bumiputeras) who dominated the country’s economic wealth (Mohd Noor, Mokhtar, Abd Rahman & Abd Moen 2002; Ariff & Abubakar 2003). Following the NEP, the creation of the government’s new policy ensured there was equal economic distribution among the Malaysian races. This policy was driven by two objectives – the first being to eradicate poverty and the second to create a balanced society, especially in the economic sectors. Under this policy, the government placed emphasis on enhancing Bumiputera participation in high-income occupations, increasing effective Bumiputera ownership and participation in the corporate sector, as well as eradicating poverty and narrowing inequality of income among races.

Based on the NEP’s goals, the government aimed to increase effective Bumiputera equity ownership in the corporate sector by at least 30 percent by 1990. Nevertheless, this objective was extended as stated in the Third Outline Perspective Plan (OPP3) to the year 2010 as at the end of the NEP in 1990, the accumulation of the nation’s wealth distribution amongst the Bumiputera was only 20.1 percent (Mohd Noor et al. 2002). Furthermore, according to the Tenth Malaysian Plan (10MP: 2010-2015) by the Malaysian government, in 2008 Bumiputera equity ownership was just 21.9 percent (Economic Planning Unit 2010). Indeed, the principles of affirmative action underpinning the 1970 NEP were applied in all policies introduced by the government after 1990 such as the National Development Policy (1991-2000), the National Vision Policy (2001-2010) and the recent
New Economic Model (2011-2020). In this respect, the alleviation of wealth and income inequalities as well as the eradication of poverty, particularly amongst Bumiputera, have emerged as one of the main agendas in all policies which drive the Malaysian economy (Gomez, Saravanamuttu & Mohamad 2013).

Recent examples of commitment to the development of Bumiputera in economic activities is evidenced with the establishment of the Ekuiti National Berhad (Ekuinas) on 30th June 2009 to promote equitable and sustainable Bumiputera economic participation through the creation of leading Bumiputera companies, such as investing in existing strong Bumiputera companies to accelerate growth of the company (Economic Planning Unit 2010). Based on the SME Annual Report 2012/13 published by the National SME Development Council (NSDC 2013), a total allocation of RM25 million has been granted to Bumiputera retailers by Perbadanan Usahawan Nasional Berhad (PUNB) under the PROSPER property scheme in order to position these entrepreneurs at strategic locations. In addition, the Bumiputera ICT Entrepreneurship (BITE) program, conducted by the Multimedia Development Corporation (MDeC) since November 2005 to develop and nurture ICT-based Bumiputera entrepreneurs, was allocated RM1 million in 2012 to train 118 entrepreneurs and create 180 jobs (NSDC 2013).

As a consequence, these significant national strategies have led to the creation and support of Bumiputera entrepreneurial small firms engaging in a diverse range of economic activities including new high technology industries (Haji Ismail et al. 2006), which are regarded as a vehicle for economic growth and new employment creation (Delapierre et al. 1998; Wright, Liu, Buck & Filatotchev 2008). More importantly, these strategic initiatives can be seen as a continuous effort by the government to strengthen the creation of the Bumiputera Commerce and Industrial Community (BCIC) and to provide an environment that is conducive to entrepreneurial development in Malaysia (Ariff & Abubakar 2003; Rosli & Hwa 2012). The Malaysian Government’s commitment to enhance the participation of Bumiputera in the economic activities is serious, evidenced in the following remarks by the Malaysian Prime Minister; Datuk Seri Najib Tun Razak at the launch of the Bumiputra Economic Empowerment Council on 14 September 2013:

Since Independence, all the Malay and Bumiputra plannings and economic policies by the Government had been enacted based on the calculations founded on the
composition of the plural communities. In principle, this had been adopted as a social contract since a long time ago by the people of Malaysia, as agreed to by the founding fathers of our nation, protected and articulated in the Federal Constitution….Therefore, the Malays and Bumiputras as the core of the national agenda could not be denied by anybody. Indeed, any matter which is national in nature, which does not take into account or neglect the agenda of the Malays and Bumiputras is not fair and just.(The Star 2013)

As can be seen, the Malaysian government provides support for entrepreneurial activities and endeavours to foster an entrepreneurial society particularly for Malay entrepreneurs. Nevertheless, it must be noted that non-Bumiputera entrepreneurs have not been ignored because the government continues to nurture the business community through a variety of suitable entrepreneurial support services. Finally, it is envisaged that the government initiatives and policies could improve the economic standing of Malaysia’s Bumiputera and eventually increase Malaysia’s economic wealth. Definitions of the key concepts of Indigenous (Bumiputera) entrepreneurship, business sustainability, and technology-based firms are discussed as follows:

- 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 (Lindsay 2005; Hindle & Lansdowne 2007).
- The sustainability of business refers to the ability of a firm to be able to continue the same type of business over a long period of time (O’Gorman 2001; Mann & Gazzarin 2004; Collins & Grimes 2008).
- Malaysia Bumiputera New Technology-Based Small Firms (NTBSFs) are referred to as a Bumiputera company according to the Ministry of International Trade and Industry (2008), a Bumiputera company is an enterprise that is 100 percent owned by Bumiputera, at least 51 percent of its board of directors and staff are Bumiputera, and is involved in any of the technology industries within six to eight years of its founding (Song, Podoynitsyna, Bij & Halman 2008).

The next section will discuss the problem statement underlying this thesis.
1.1 STATEMENT OF THE PROBLEM

It cannot be denied that the number of Bumiputera entrepreneurs engaging in business has increased from year to year, especially with the government’s continuous effort encouraging Bumiputera to be involved in entrepreneurship (Ismail & Sulaiman 2007). This is evidenced through the implementation of entrepreneurial activities such as entrepreneurial training and development programmes as well as the provision of seed funding and the formulation of national policy promoting entrepreneurial activities in Malaysia. For example, new companies are entitled to receive the classification of ‘pioneer status’ from the Malaysian Industrial Development Authority (MIDA) in which these companies are exempted from paying corporate tax within the first five years of business operation. In fact, entrepreneurs may apply to MIDA for an extension of this privilege up to the first ten years of business operation. The establishment of many government bodies that govern the entrepreneurial activities such as the Indigenous People's Trust Council also known as MARA and National Institute of Entrepreneurship (INSKEN) act as agencies responsible to provide entrepreneurship training to existing and potential entrepreneurs.

The importance of entrepreneurial activities in Malaysia may also be evaluated with the introduction of two prominent recent government policies; the Tenth Malaysian Plan (10MP:2010-2015) and the Third Industrial Master Plan (IMP3: 2006-2020). 10MP emphasizes several strategies that require implementing in order to constructively and productively overcome the socio-economic inequalities amongst its citizens. On the other hand, IMP3 focuses on long-term global competitiveness through the transformation and innovation of the manufacturing and services sectors and emphasises promoting the BCIC. However, a significant number of Bumiputera entrepreneurs have not been able to sustain their business operations (Mat Zain & Senteri 1998) despite the government’s comprehensive entrepreneurship training and development programs. Of importance to note, and of relevance to this study, the involvement of Bumiputera entrepreneurs in technology industries has not progressed as this sector requires high technical skills and a huge amount of funding to finance R&D activities such as new product development.

Furthermore, 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. In fact, entrepreneurship research from the Malaysian perspective was also minimal. Starting from the seminal work by Popenoe (1970) who examined the evaluation of Malay entrepreneurship in Malaysia prior to the implementation of the NEP, the publications of entrepreneurship-based research from the Malaysian perspective are still at an infant stage as there have only been a few published studies, especially the involvement of Bumiputera in the technology-based industries. Looking at the ‘Big Five’ journals of entrepreneurship research as proposed by Katz (2003) from Appendix 1, there are only 15 articles that have been published, which are based on the Malaysian perspective, in which seven articles are not totally focussed on the study of Malaysian entrepreneurship development and just one article (Prasad, Vozikis & Ariff 2006) discusses the impacts of the 1976 Bumiputera entrepreneurship policy towards Initial Public Offering (IPO) practices based on the NEP. Further, the researcher found that there was a dearth of studies deemed relevant in discussing the nature and development of entrepreneurship research in Malaysia. Therefore, a study on business sustainability of Bumiputera entrepreneurs in technology-based industries will enrich the entrepreneurship research paradigm, especially in uncovering prominent factors that will assist Bumiputera entrepreneurs engaged in technology-based industries. The findings will generate significant results that will inform decisions of Malaysian policy-makers in the formulation of policies assisting Bumiputera entrepreneurs in technology-based firms.

Further, there have been few discussions of the implications of sustainability at the level of a single enterprise (Mann & Gazzarin 2004). Therefore, a study on the sustainability of Malaysian Bumiputera technology-based small firms will fill gaps in explaining the nature of sustainability at the level of a single enterprise. Further, many small businesses, especially Bumiputera small and medium enterprises (SMEs), are prone to failure in operating a business (Mat Zain & Senteri 1998; Mohd Noor et al. 2002) due to intense competition (especially from Chinese entrepreneurs), limited access to initial capital, low levels of technology, lack of innovation through research and development, and a shortage of available skilled workers (Abdullah, Hamali, Deen, Saban & Abg Abdurahman 2009).

Moreover, the financial crisis in 2009 as well as the introduction of the liberalisation policy by the current Malaysian government might directly affect the ability of Bumiputera entrepreneurs to sustain their business (Doraisami 2012). Based on the 2010 Annual
Report by the Companies Commission of Malaysia (CCM 2011), the number of companies wound up in 2009 increased by 38.8 percent compared with the previous year.

In an April 2009 press release issued by the Malaysian Prime Minister (Najib Razak 2009), he announced that the Ministry of Entrepreneurship and Cooperative Development was abolished from his newly-formed government administration structure. Consequently, several government agencies that have great interest to enhance the socioeconomic of Bumiputera community such as the MARA and Entrepreneur Group Economic Fund (TEKUN) were decentralised. These agencies were then absorbed to other ministries such as Ministry of International Trade and Industry (MITI) and Ministry of Rural and Regional Development.

Furthermore, in the same month, Najib Razak also announced the new liberalisation policy for the service and financial sectors. This liberalisation policy aimed to enhance ‘equity’ within Malaysia’s competitiveness in the global economy. With the introduction of this policy, 27 service sub-sectors were liberalised. Thus, the government would not impose any equity conditions in these two sectors and other sub-sectors (MIDA 2012). This new liberalisation policy abolishes the previous special rights that had been conferred on the Bumiputera community by the government since the implementation of 1970 NEP in several key industries (e.g. health, computer services and transportation), specifically the 30 percent Bumiputera equity ownership in any corporate business firm (Gomez 2013). In October 2011, the Prime Minister announced that the government would further liberalise 17 service subsectors (e.g. engineering and legal services) in phases during the tabulation of the 2012 budget in the parliament. Eventually, this policy will directly impact on and affect the business sustainability of Bumiputera entrepreneurs due to increased competition in the Malaysian industrial landscape.

Having realised this issue, this thesis aims to explore the phenomenon of business sustainability amongst the Indigenous Bumiputera in Malaysia through a perspective of a developing country where the Indigenous people are the majority. It uses three established theories (Resource-Based View, Human Capital Theory and Social Capital Theory) that are widely examined in developed countries, especially in the western culture. Interestingly, this thesis would merge two different fields of entrepreneurship inquiry,
Indigenous entrepreneurship and technology-based entrepreneurship, to seek a harmony of views on sustainability of business amongst Indigenous technology-based business.

Hence, the following section of this proposal explores the definition of business sustainability in global practice, and then will be followed by discussions on the main concepts of business sustainability and indicators, which are relevant to the scope of this thesis.

1.2 RESEARCH OBJECTIVES

The objectives of this thesis are:

a) To uncover and further understand founder-specific factors affecting business sustainability of Bumiputera New Technology-Based Small Firms.
b) To uncover and further understand firm-specific resources affecting business sustainability of Bumiputera New Technology-Based Small Firms.
c) To examine the roles of business stakeholders (such as government agencies, academics and policy makers) in providing necessary support and assistances for the sustainability the Bumiputera New Technology-Based Small Firms.

The first objective extensively explores the founding Bumiputera entrepreneurs’ attributes, human capital and social capital which may influence the ability of Bumiputera NTBSFs to sustain their business. The achievement of this objective extends understanding on the evaluation of individual entrepreneur’s strengths and weaknesses such as their level of skills and knowledge in sustaining the business. The second objective offers a comprehension on the contributing factors of firm’s resources towards a Bumiputera firm’s sustainability in business. In this respect, the social capital, capabilities and intangible assets of firms are explored to explain specifically what resources matter and how the participants formulate their strategies in attaining those resources. The third objective investigates the roles of business stakeholders in assisting the Bumiputera NTBSFs in order to provide a more holistic view of the entrepreneurial business ecosystem in Malaysia towards the development of Bumiputera technology ventures.
1.3 RESEARCH QUESTIONS

The primary research question driving this thesis is:

**What are the factors that affect the business sustainability of Bumiputera Technology-Based Small Firms?**

In addition, three sub-research questions include:

To what extent the founder-specific factors impact the sustainability of Bumiputera NTBSFs?

To what extent the firm-specific resources impact the sustainability of Bumiputera NTBSFs?

To what extent the business stakeholder’s support impacts on the ability of Bumiputera NTBSFs to sustain their business?

By addressing the research questions, the thesis contributes to the development of a Bumiputera business sustainability conceptual model by systematically evaluating each factor from the aspect of founder-specific factors, firm-specific resources and business stakeholder’s role to assist the Bumiputera technology-based firms. Prior studies on the Bumiputera entrepreneurship focused on a single level analysis (Mat Zain & Senteri 1998; Ismail & Sulaiman 2007; Abdullah et al. 2009; Ishak, Che Omar & Ahmad 2012), especially to develop or confirm construct based on single social actor only (e.g. individual entrepreneurs). Empirically, to the researcher’s best knowledge, this thesis is the first study that attempts to discover the relevance of constructs from the three main theories (RBV, HCT and SCT) in a multiethnic developing country in order to extend understanding of the perceived sustainability factors from various social actors. Interestingly, the triangulation of key findings from these various social actors (individual entrepreneurs, government officers, academics and policy maker) offers a better view on the associations between constructs that emerged in this thesis. Additionally, this thesis also sets out to fill an important gap in our understanding, drawing on the concept of business sustainability of Bumiputera firms in technology-based business, which offers unique perspectives compared with prior studies that focused on the involvement of Bumiputera in traditional-based business (Mohd Noor et al. 2002; Awang et al. 2009; Mohd Zain, Zubairi & Ghani 2009).
Previous research on the Indigenous entrepreneurship has generally focused on the Indigenous participations in traditional-based economic activities as part of their societal rebuilding to escape from their positions of relative disadvantage in the country (Galbraith, Rodriguez & Stiles 2006; Peredo & Anderson 2006). This thesis extends the current concept of societal rebuilding by investigating the participation of Bumiputera in the technology-based industries as an instrument to rebuilding their society through innovation activities. Inspired by Mann and Gazzarin (2004), this thesis explores the connections between the main types of business sustainability (enterprise sustainability and societal sustainability) from an Indigenous context, whereby this thesis posits that the sustainability of Indigenous technology-based ventures may also enhance the societal sustainability in those critical industrial areas, especially in developing countries. Remarkably, this would contribute to the harmonisation of two bridging fields in entrepreneurship, Indigenous entrepreneurship and technology entrepreneurship from a context of multiethnic country such Malaysia, where the Indigenous population is the majority people with less participation in economic activities.

This thesis also has potential on both managerial and policy implications. The policy makers may consider revisiting their entrepreneurship policies based on the findings generated from the research question. In this respect, Gomez (2012) argues that the implementation of well-formulated programs that support SMEs to promote a productive entrepreneurship environment could be hindered with the government’s procedures in creating Bumiputera capital and redistributing equity amongst the Malaysian society. This thesis sheds some light on the need for better coordination between government agencies in promoting sustainable Bumiputera technology ventures. Besides, key sustainability factors identified in this current study may guide the technology entrepreneurs in managing their business effectively.

1.4 SCOPE OF THE RESEARCH

The scope of this research will focus on the main factors that can affect the sustainability of Malay entrepreneurs in technology-based firms. The identification of these factors is based on the Resource-Based View (RBV) of the firm theory which focuses on the resources that might lead to the business sustainability of Bumiputera entrepreneurs in technology industries. Here, the present study only looks at three dimensions; founder-specific resources, firm-specific resources and country-specific resources. In addition, the
study would only focus on Bumiputera entrepreneurs involved in Small and Medium enterprises (SMEs) as many Bumiputera entrepreneurs are involved in small and medium scale of business. For this thesis, Bumiputera entrepreneurs here refer to Peninsular Malays and those in Sarawak and Sabah, but does not cover or include Malays in Brunei Darussalam, Singapore and Indonesia.

In addition, this research employed an inductive qualitative approach by using semi-structured interviews as a main method in gauging research information. By adopting a realism approach through Perren and Ram’s (2004) ‘multiple stories milieu explorations’ case-study method, this thesis seeks information from many social actors who are deemed crucial in explaining the sustainability of the Bumiputera business. The data was systematically analysed by using both hand coding technique and NVivo to generate thematic analyses and content analyses of the crucial constructs underpinning this study. Finally, the researcher employed a conceptual building approach (Weick 1989) to interpret meanings of research constructs or themes to answer the research question.

1.5 THESIS STRUCTURE

Chapter 2 provides an in-depth review on the entrepreneurship field as a research field, especially in regard to the development of Indigenous (Bumiputera) entrepreneurship. This chapter also examines characteristics of technology-based firms and reviews business sustainability from the perspective of a firm operating its business in the long-term. Theories associated with the sustainability of business will be also discussed in this chapter.

Meanwhile, in Chapter 3 the development of a conceptual framework and generation of a research proposition are discussed thoroughly in order to get a holistic view of factors influencing sustainability of business, specifically in regard to founder-specific factors, firm-specific resources and government support and assistance to Bumiputera NTBSFs.

Chapter 4 justifies the research methodology used in this thesis whereby this chapter firstly discusses the selection of qualitative research for this thesis, the selection of research paradigm and the research design strategy. Next, this chapter clarifies the selection of multiple case studies for this thesis and four research methods that were employed in collecting the research data, such as interviews and document analysis. Data analysis
techniques and issues pertaining to the credibility of this qualitative research are also outlined in this chapter. Finally, ethical considerations in conducting this thesis are also discussed.

Chapter 5 reports on the analysis of the founder-specific factors that emerged from the interviews amongst Bumiputera NTBSFs. On the other hand, Chapter 6 of this thesis presents analysis on firm-specific resources identified in the interviews amongst Bumiputera NTBSFs. Chapter 7 reports interviews undertaken amongst business stakeholders of Bumiputera NTBSF whereby the roles of three main stakeholders (academics, government officers and politicians) are explored.

Chapter 8 presents a comprehensive discussion of all the factors identified in Chapters 5, 6 and 7 and integrates the main findings of this thesis with prior research, especially in aiming to answer the research question of this thesis. The triangulation between key findings of this thesis will be discussed in Chapter 9. This discussion will lead to the revision of the proposed conceptual model that was developed in Chapter 3.

Finally, Chapter 10, the conclusion, presents a review of the study undertaken in this thesis, a discussion of the implications for practice, conclusions and outlines suggestions for future research.
CHAPTER TWO

LITERATURE REVIEW

2.0 INTRODUCTION
This thesis aims to bridge two different fields of entrepreneurship that consist of both the emerging Indigenous entrepreneurship field and the established technology entrepreneurship field by exploring the phenomenon of the sustainability of Bumiputera (Indigenous) small businesses in the technology-based industry in a developing country (Malaysia). Understanding the participation of Indigenous peoples in entrepreneurship, especially Malaysia’s Bumiputera community is the core of this thesis. In this respect, concepts relating to the Bumiputera people in Malaysia will be discussed with a specific focus on their socioeconomic positions and the role played by the government to assist Bumiputera entrepreneurs involved in technology issues. Other important concepts underpinning this thesis that will be reviewed include SMEs (Small and Medium Enterprises), technology-based firms and the sustainability of a business.

2.1 DEFINITION OF INDIGENOUS PEOPLE
In practice, there is no universal definition of the term Indigenous people (World Bank 2005; Frederick & Foley 2006). In fact, the Permanent Forum on Indigenous Issues of the United Nations (UN) claimed that there is not an official definition of ‘Indigenous’ adopted by any UN-system body in regard to the diversity of Indigenous people around the globe (United Nations 2004). Furthermore, the term ‘Indigenous people’ may be known by different terms in different countries such as ‘Indigenous ethnic minorities’, ‘tribal group’, ‘aboriginal’, or ‘hill tribes’. Within the Malay archipelago, the term Indigenous is referred to as ‘Pribumi’ in Indonesia (Papanek 2006), or ‘Bumiputera’ in Malaysia (Husin Ali 2008).

The UN’s Office of the High Commissioner of Human Rights (OHCHR) stated that questions on the validity or suitability of the term ‘Indigenous people’ have been raised by a number of countries, specifically in Asia and Africa (OHCHR 2001). This is because each Indigenous person from these regions claimed that they were Indigenous and a
consensus of what constitutes the definition of ‘Indigenous’ is relatively difficult, particularly when reflecting the culture and distinctive characteristics of each group. Nevertheless, a clear definition of Indigenous people will be discussed in this study by taking into consideration definitions generated by both international organisations (such as the International Labour Organisation (ILO) and the World Bank) and scholars.

According to Peredo, Anderson, Galbraith, Honig and Dana (2004) and the UN (2004), a useful definition of Indigenous people is the one suggested by the General Council of the International Labour Organisation (ILO) in 1989. According to Article 1 of ILO Convention No. 169 (International Labour Organisation 1991), Indigenous people are:

Peoples in independent countries who are regarded as indigenous on account of their descent from the populations which inhabited the country, or a geographical region to which the country belongs, at the time of conquest or colonization or the establishment of present state boundaries and who irrespective of their legal status, retain some or all of their own social, economic, cultural and political institutions.

On the other hand, instead of using a formal definition of Indigenous entrepreneurship (Peredo et al. 2004), the World Bank (2005) has also outlined four main characteristics of what constitutes Indigenous peoples: (a) self-identification as members of a distinct Indigenous cultural group; (b) collective attachment to geographically distinct habitats or ancestral territories in the project area; (c) customary cultural, economic, social, or political institutions that are separate from those of the dominant society and culture; and (d) an Indigenous language.

With reference to definitions provided by some scholars, Lindsay (2005) stated that an Indigenous person refers to an individual who is an original owner of a country’s resources or a descendent of an owner. Dana (2007b) contends that ‘Indigenous nation’ refers to a group of people whose ancestors lived within a nation-state prior to colonisation or formation of a nation-state. Nevertheless, cultural paradigms and historical aspects would normally shape the development of Indigenous people around the globe; hence the classification or definition of Indigenous people might differ (Peredo & Anderson 2006). For example, Foley (2003) and Hindle and Lansdowne (2007) made a clear definition of an Indigenous Australian by referring to what the High Court of Australia upheld: ‘An
Indigenous Australian is a person who is of Indigenous Australian descent, they must identify as an Indigenous Australian and be accepted by such the indigenous community in which they live’.

The concept of Indigenous people in Malaysia will be discussed in the following section to better understand the concept of the Bumiputera-Indigenist paradigm applied in this thesis.

2.1.1 Malaysian Bumiputera (Indigenous) People
Modern Malaysian society is nowadays characterised by having a pluralist culture where races (i.e. mainly Malay, Chinese and Indian), ethnicities, language and religion exist throughout the country (Hwang 2003). Specifically, the division of Malaysian society into Indigenous and non-Indigenous categories is defined by the terms Bumiputera and non-Bumiputera (Siddique & Leo 1981; Ishak et al. 2012). The Malay word Bumiputera is literally translated from Sanskrit and it means ‘sons of the soil’ (Omar 2003; Husin Ali 2008; Montesino 2012).

From a historical perspective, the term Bumiputera was previously used by the British colonial administration to differentiate between Indigenous people and non-Indigenous people, especially for the purpose of protecting the interests of Indigenous people (Faruqi 2004). During the colonial period, there was a significant influx of immigrant Chinese and Indian workers into Malaya who eventually dominated the economic activities of the country, whilst most Malays and other Indigenous people lived in rural agrarian communities and experienced endemic poverty compared to their counterparts, especially the ethnic Chinese urban communities (Lee 2007; Ishak et al. 2012). In this respect, the British colonial administration practiced the ‘divide and rule’ policy in Malaysia, which caused the Bumiputera to be left behind economically compared to the other races, especially when economic activities were segregated along racial lines (Hirschman 1986; Mohd Noor et al. 2002; Naguib & Smucker 2009). This situation led to an imbalance in the population landscape in the British Malaya colony so that by 1931, the ethnic Chinese accounted for 39 percent of the population, whilst the Malays and other Indigenous constituted 44.7 percent (Vlieland 1932). Having realised this situation, and more importantly to safeguard the interests of Indigenous people, the British introduced a policy of land reservations for Malays (Siddique & Leo 1981). Here, the identification of ‘son of
the soil’ by Malays and other Indigenous peoples made it easier for the British to implement their policies concerning the development of Indigenous peoples.

When the British left Malaya after the Second World War, the term ‘Bumiputera’ was revived again as an economic and political label (Siddique & Leo 1981) due to the imbalance in Malaysian society regarding economic and political problems that compromised Malaysia’s development. At this juncture, the concept of Bumiputera was reinvented by Tunku Abdul Rahman - first Prime Minister – who after independence in 1957 became Prime Minister after Singapore, Sarawak, Sabah and the Federation of Malaya joined to form a new country on 16 September 1963 - known today as Malaysia. On one hand, the invention of this term was used to differentiate the Malays from the Chinese and Indian immigrants who were not the sons of the soil. This recognition is important in consolidating the ‘special position’ of the Malays according to Article 153 of the Federal Constitution of Malaysia, which stated that the Yang di-Pertuan Agong (King of Malaysia) was responsible for safeguarding or protecting the special position of the Malays and other Indigenous people (Faruqi 2004; Husin Ali 2008). The concept of Bumiputera received a special legal meaning in 1963 when this concept was initially accepted due to the fact that the Indigenous people of Borneo Islands did not want to classify themselves as Malays. They felt they had a different culture and religion from their Malay counterparts. Since the formation of Malaysia, the term Bumiputera legally comprises the Malays, the aborigines of Peninsular Malaysia (West Malaysia), and the Indigenous groups in Sabah and Sarawak (Morrison, Murray & Ngidang 2006; Husin Ali 2008).

This term applies to recognition of the special position of the Indigenous people, specifically in regard to education, public service employment, landholdings and economic activities such as the ownership of a business. Significantly, the concept of Bumiputera was further defined in 1971 after the introduction of the 1970 NEP which aimed to eradicate poverty through Bumiputera participation in economic activities. For instance, if a particular company, either a local company or foreign company, wished to be listed on the Bursa Malaysia (Malaysia Stock Exchange), they had to have at least 30 percent of shareholders who are Bumiputera in order to satisfy listing requirements.
2.1.2 Composition of Bumiputera (Indigenous) Society

The Bumiputera communities in Malaysia comprise of several races, namely the Malays as the largest Indigenous people in Peninsular Malaysia, the Ibans in Sarawak and the Kadazan-Dusuns in Sabah (Sarawak and Sabah are situated on the Borneo Islands). Table 1.1 shows that the Malays are the largest Bumiputera community in Malaysia as they accounted for 81 percent of the Indigenous community in Mid-2013. Therefore, this discussion of Indigenous entrepreneurship in Malaysia will focus on the Malays since they form the majority of Bumiputera people in. Indeed, the terms Malay and Bumiputera are normally employed interchangeably by scholars as well as policy-makers.

Table 2.1: Malaysian Bumiputera (Indigenous) Population

<table>
<thead>
<tr>
<th></th>
<th>Malaysian Bumiputera (Indigenous) Population in 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Malay</td>
</tr>
<tr>
<td>Quantity</td>
<td>15,003,100</td>
</tr>
<tr>
<td>Percentage</td>
<td>81%</td>
</tr>
</tbody>
</table>

Source: Department of Statistics Malaysia (2013)

2.1.3 Socioeconomic Situation of the Bumiputera (Indigenous) Society

The Bumiputera people were engaged in less profit-generating enterprises at the time of independence in 1957, working mainly as small-scale agricultural farmers and civil servants (Othman et al. 2005; Gomez 2013). During that period, the non-Indigenous communities (especially ethnic Chinese) were already engaged in commerce and industry such as plantations and mines (Kechot & Khalifah 1999). The tradition of entrepreneurship had been inculcated amongst the Chinese community earlier than the Bumiputera community (Othman et al. 2005). In fact, Hirschman (1986) claimed that the control of various spheres of economic activities by the Chinese community hindered Bumiputera in developing their businesses because the former group had a long history of kinship networks. This can be illustrated through the average monthly household income by Malaysian ethnic group (Department of Statistics 2013), where the Bumiputera earned the least (RM 4457), compared with other main ethnics such as Chinese (RM 6366) and Indians (RM 5233).
The socioeconomic development of Bumiputera started being taken seriously by the government after events of May 1969 in Kuala Lumpur when conflict erupted between the Malays and Chinese over economic issues (Jesudason 1997; Omar 2003). A year before the introduction of the NEP, Bumiputera’s equity ownership in Malaysia accounted for approximately only 1.5 percent (Gomez 2013). This figure clearly shows the lack of Bumiputera participation in the economic sector. The incident forced the government to pay more attention to Bumiputera economic development. This is because the Malaysian national plan could only be achieved if the wealth of the nation was equally shared amongst all the country’s races (Mohd Noor et al. 2002). Hence, the Malaysia government has formulated a series of affirmative economic policies to achieve national harmony amongst main ethnics in Malaysia (Montesino 2012). For this reason in 1970 the Malaysian government created the New Economic Policy (NEP) which is still essentially being followed to this day (Gomez et al. 2013). In fact, efforts made by the Malaysian government to help the Bumiputera in entrepreneurial activities through its agencies are still focused on its economic agenda. 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 in terms of corporate ownership in Malaysia.

Figure 2.1: Comparison of Share Capital Ownership of Limited Companies between Bumiputera and Non-Bumiputera from 1970 to 2008

Source: Adopted from the Economic Planning Unit (2010)

In order to further understand the participation of Bumiputera in business ventures, the next section reviews the concept of entrepreneurship and the distinctiveness of Indigenous entrepreneurship research streams that underpin the entrepreneurship discipline.
2.2 ENTREPRENEURSHIP AS A FIELD OF RESEARCH

Entrepreneurship is a relatively new field of business studies (Short, Ketchen, Combs & Ireland 2010), that seeks to understand the recognition and exploitation of business opportunities (Shane & Venkataraman 2000). Historically, the study of entrepreneurship can be traced back to Schumpeter’s (1936) work on the theory of economic development that posits entrepreneurs, who are innovative and play a crucial role in marshalling factors of production to produce goods and services. Since the mid-1980s, the entrepreneurship field has become much stronger in the business environment and so has the research into entrepreneurship-related fields at a significant rate (Low & MacMillan 1988; Short et al. 2010), particularly in trying to develop theoretical ideas and constructs linked to the entrepreneurial process (Nielsen & Lassen 2012). This is evident by an increased number of entrepreneurship-related journals, conferences, research centres and professional chairs in the academic arena (Wiklund, Davidsson, Audretsch & Karlsson 2011).

From a practical point of view, the current phenomenon of entrepreneurship has received considerable attention from policy-makers and scholars (Fischer & Reuber 2003) because findings generated from entrepreneurship research provide valuable knowledge for managerial and policy-making reasons as well as the development of relevant theories (Gilbert, Audretsch & McDougall 2004; Hoskisson, Covin, Volberda & Johnson 2011). Furthermore, the field of entrepreneurship is regarded as one of the important areas in a country’s economic growth including job creation (Delapierre et al. 1998; Malchow-Møller et al. 2011) and economic development (Wennekers & Thurik 1999; Audretsch 2007; McMullen, Bagby & Palich 2008). Van Praag and Versloot (2007) conducted a systematic review on the pertinent economic value of entrepreneurship to the development of a country and found that entrepreneurial activities contributed significantly to four main areas of economic development: employment creation; innovation; productivity and growth; and an entrepreneur’s individual utility (e.g. expected income).

Nevertheless, despite such attention by academics and policy-makers, many authors have contended that there is no single agreed definition of entrepreneurship or related concepts (Bruyat & Julien 2001; Hoskisson et al. 2011; Wiklund et al. 2011) and this is continuing to create intellectual debates amongst scholars (Low 2001; Howorth, Tempest & Coupland 2005). Furthermore, the field of entrepreneurship is one of the most complex in the social
sciences as the establishment of its boundaries has still not been resolved (Bruyat & Julien 2001). Most researchers generally define entrepreneurship based on their school of thought, concepts, experiences, and terms of reference (Howorth et al. 2005). One possible justification for this problem is that the entrepreneurship phenomenon is being investigated by different disciplines such as economics, marketing, sociology, anthropology and management history (Grant & Perren 2002; Zahra 2007). The entrepreneurship phenomenon is characterised by a complex set of constructs such as product development, innovation and small business management (Low 2001) as well as multi-level research approach, perspectives, and methods employed by researchers (Hoskisson et al. 2011).

Paradoxically, the diversity of theories, methods or level of analyses should be seen as complimentary rather than contradictory in explaining a specific phenomenon that is being studied. Zahra (2007) suggests that the diverse entrepreneurship phenomena could enhance the rigor and relevance of research findings by emphasising the research context. Thus the findings generated from these diverse phenomena could also be viewed as a continued revitalisation of this field, especially in connecting the micro- and macro-foundations of entrepreneurship research (Hoskisson et al. 2011).

In order to further understand the context of concepts understudied, a brief review of concepts and applications of entrepreneurship and entrepreneurs will be discussed in the next section.

2.2.1 Entrepreneurship and Entrepreneurs: Concepts and Applications

To begin with, Howorth et al. (2005) recommend that researchers pay thoughtful attention in employing the definitions of entrepreneurship and entrepreneur to suit the context being studied. Based on the seminal work by Schumpeter (1952), entrepreneurship is a process which leads and contributes to creative destruction due to the innovativeness of a product or service generated by an entrepreneur. As proposed by Drucker (1985), entrepreneurship is an act of innovation that exploits the endowment of existing resources with new-wealth-producing capacity. A short and widely-accepted definition of entrepreneurship as proposed by Gartner (1988) is the creation of organisations. Kaplan and Warren (2007) claim that entrepreneurship includes the generation and implementation of an idea into a successful business rather than mere business creation. One of the widely-used and current definitions of entrepreneurship is proposed by Shane and Venkataraman (2000, p. 218):
Entrepreneurship as a field of business seeks to understand how opportunities to create something new arise and are discovered or created by specific individuals, who then use various means to exploit or develop them, thus producing wide range of effects.

This thesis does not attempt to initiate a new concept of entrepreneurship or a new definition of who is an entrepreneur, but instead aims to integrate entrepreneurship definitions proposed by previous scholars with the current scenario of Malaysian Bumiputera (Indigenous) entrepreneurs in technology-based industries. In order to realise this, the next section will discuss the concept of Indigenous research aspects in a global context as well as the specific one of Malaysia.

2.3 INDIGENOUS ENTREPRENEURSHIP: A RESEARCH CONTEXT

Indigenous entrepreneurship can be understood by the creation of a new business venture that is managed and developed by Indigenous people for their own benefit (Lindsay 2005; Peredo & Anderson 2006; Hindle & Lansdowne 2007). In recent years, Indigenous entrepreneurship as a field of inquiry has been considered a growth area of scholarship in entrepreneurship research (Kayseas, Hindle & Anderson 2006; Hindle & Moroz 2010; Wood, Fielden & Davidson 2012). Indeed, several studies have been conducted to specifically understand Indigenous entrepreneurship as a unique field of research as well as to further uncover themes and issues underpinning it (Peredo et al. 2004; Peredo & Anderson 2006; Hindle & Moroz 2010). Based on these scholarly works in regard to the development of Indigenous entrepreneurship, there are two reasons for investigating it: societal ‘rebuilding’ and distinctiveness of the research field (Peredo & Anderson 2006).

2.3.1 Indigenous Entrepreneurship and Societal Rebuilding

From the perspective of societal rebuilding, Peredo and Anderson (2006) suggest that Indigenous entrepreneurship is a growth area for studies that address an urgent issue in regard to the improvement of Indigenous disadvantaged populations, specifically in economic activities. Generally, Indigenous peoples are regarded as amongst the most disadvantaged and marginalised segments of a population and are usually distinct from the dominant groups in their national societies (World Bank 2005; Frederick & Foley 2006). For instance, Indigenous people are commonly seen as having a lesser economic status regardless of where they are (de Bruine & Mataira 2003), especially in terms of the endemic poverty (Peredo & McLean 2010) and social deprivation problems like lower
levels of education, poor health and higher rates of unemployment (Peredo et al. 2004; Frederick & Foley 2006; Peredo & Anderson 2006; Furneaux & Brown 2008; Pearson & Helms 2013).

As a result of these circumstances, the economic development of Indigenous people has become a pertinent issue for government, policy-makers, private profit-based companies and academics wanting to understand the direction in which Indigenous peoples’ economic activities is going (Galbraith et al. 2006) so that they can survive specifically through entrepreneurship activities (Wood & Davidson 2011) as well as receive support from the government for venture creations. This is because an Indigenous person wants to become self-employed and socially productive by initiating a business (Peredo et al. 2004; Foley 2007). Brueckner, Pearson, Chatterjee, Wise and Marika (2011) describe the increased political and social interests to encourage Indigenous people to participate in the mainstream economic activities as ‘closing the gap’ (p.1820), a framework between Indigenous and non-Indigenous to achieve statistical equality, mainly to improve the Indigenous socioeconomic condition in a country.

Chronologically, ‘the first wave of Indigenous entrepreneurship’ as suggested by Steven (2001) provided direct government economic assistance to an Indigenous community (Galbraith et al. 2006, p. 2) Nonetheless, the first wave of direct economic assistance produced only mixed results since these programs often tried to heal the symptoms only and disregarded the cause of Indigenous social and economic dysfunction (Frederick & Foley 2006). The field of Indigenous entrepreneurship in today’s business environment is known as the second wave of Indigenous economic development, in which private institutions such as venture capital firms are actively involved in the entrepreneurial development process (Peredo et al. 2004). The second wave is seen as a process where the efforts of Indigenous people themselves focus on improving their social and economic disposition through entrepreneurial enterprises (Peredo et al. 2004; Frederick & Foley 2006).

In this respect, Peredo et al. (2004) contended that entrepreneurial enterprise is an essential element in a country’s Indigenous economic development so that other socioeconomic problems such as national rebuilding (Anderson & Giberson 2004) can be overcome. This is because entrepreneurial success in a business may become a means for some
disadvantaged Indigenous people to escape from poverty, assistance or welfare dependency as well as discrimination in the form of underpaid employment (Foley 2000, 2007). Furthermore, the involvement of Indigenous people in economic activities emerged as an effective way to incorporate them into their countries’ economic landscapes that are predominantly operated by non-Indigenous business people. Nonetheless, studies have also shown that the implementation of Indigenous entrepreneurship development by the government did not necessarily produce the desired outcomes such as the increased number of Indigenous enterprises due to lack of capital, skills and business acumen by the Indigenous entrepreneurs (Furneaux & Brown 2008; Pearson & Helms 2013).

2.3.2 Distinctiveness of Indigenous Entrepreneurship as a Field of Research

Cahn (2008) claimed that Indigenous entrepreneurship differs from other forms of entrepreneurship in terms of the context of the enterprise, the type of goal, the enterprise’s focused outcomes, which are often oriented towards the community rather than the individual. For Foley (2003), the most crucial factor for Indigenous entrepreneurs is the recognition of business opportunities based on the distinct resources that can create value to the customers specifically and to the community generally. Nevertheless, the culture of the Indigenous community usually leads to conflict with the fundamental principles of mainstream theories and practices (Brueckner et al. 2011) such as defining what factors constitute a resource, which may vary according to the Indigenous people’s culture (Dana 2007a). This is because Indigenous entrepreneurship should be observed within a cultural context that shapes an entrepreneur’s attitudes. For example, the universal context of social capital benefits to entrepreneurship (Klyver, Hindle & Meyer 2008) would not necessarily produce the same benefits to the Indigenous societies due to lack of supportive cultural capital and that support commercial entrepreneurship as well as limited bridging ties which could lead to exploit external resources in operating the business (Light & Dana 2013).

In this respect, Lindsay (2005) contended that culture may directly or indirectly influence a person’s attitude and behaviour and also shape the way of life in an Indigenous community. Hofstede (1983) defined culture as the collective programming of the mind that differentiates the member of one category of people from other categories. From a study conducted by Redpath and Nielsen (1997), Hofstede’s cultural dimensions provide an insight on differences between Native and non-Native people in Canada, specifically on the impact of traditional cultural values toward organisational effectiveness amongst the
Native people. In this study, categories of people may include an ethnic group in Malaysia such as Malays-Bumiputera.

From a narrow perspective in the family, Dana (2007b) argues that cultural values of Indigenous people inherited from their family may also affect the perceived needs of the resources and eventually determine the value of the resources to them. This is generally true due to the fact that the cultural values of an Indigenous society may include the sharing of resources (Foley 2003). Therefore, the definition of success in business for an Indigenous entrepreneur may differ from their counterparts in that the Indigenous people’s view of business success cannot be measured in terms of tangible assets, such as monetary success. This is due to the fact that Indigenous entrepreneurs may define their success based on socioeconomic variables such as how their business contributes to the development of the Indigenous community as well as their families.

2.3.3 Economic Indigenism: Malaysian Bumiputera (Indigenous) Entrepreneurship

According to Lindsay (2005), Indigenous entrepreneurship can be understood as the creation of a new venture that is managed and developed by Indigenous people for their own benefit. In an in-depth discussion about Indigenous entrepreneurship, de Bruine and Mataira (2003) noted two categories of Indigenous entrepreneurship: tribal entrepreneurship and heritage entrepreneurship. Tribal entrepreneurship can be described as the strategic utilization of an Indigenous resource by developing it as an opportunity for the sake of the indigenous community. For example, the formation of tribally owned enterprises or business alliances can be categorised as tribal entrepreneurship. From the Malaysian perspective, the establishment of the Malay Chamber of Commerce Malaysia (MCCM) on 11th July 1957 can be defined as tribal entrepreneurship. This is because this kind of association forms alliances amongst Indigenous Malay entrepreneurs, allowing them the opportunity to collaborate in a business activity and discuss issues concerning the survival of Bumiputera entrepreneurs in Malaysia. Indeed, Andriesse and van Helvoirt (2010) found that the Bumiputera entrepreneur’s participation in the MCCM has assisted them to be granted with initial capital to start a business through a soft loans scheme.

Meanwhile, heritage entrepreneurship is based on the resources claimed by Indigenous peoples to safeguard their ‘Indigenous Heritage Rights’, which refers to the Indigenous peoples’ intellectual and cultural property. Malay land reservation is an example of
heritage entrepreneurship as it refers to the lands within the boundary of the state that can only be owned or transferred to Malays according to the law. Based on Article 89 (6) of the Federal Constitution of Malaysia, Malay-reserved land is defined as:

Reserved for alienation to Malays or to natives of the state in which it lies: and ‘Malay’ includes any person who, under the law of the state in which he is resident, is treated as Malay for the purposes of the reservation of the land.

Historically, Popenoe’s (1970) seminal study of Malay entrepreneurship claimed that Malay-based firms are less able to survive and grow as they tend to be inexperienced and late in joining the business world compared to Chinese-owned ownership enterprises. Yet, Popenoe’s study was done a year before the implementation of the NEP in 1971. The Malaysian government’s commitment to the development of Bumiputera entrepreneurship was evident in the creation of the Ministry of Entrepreneurship and Cooperative Development (MECD) in 2004. It supported the Bumiputera Commerce and Industrial Community (BCIC) and aimed to provide an environment that is conducive to entrepreneurial development (Ariff & Abubakar 2003). MECD allocated RM369.3 million to fund entrepreneurship culturing programmes under the Ninth Malaysia Plan (9MP). From this allocation, the Ministry provided 1,500 entrepreneurial programmes potentially supporting one million Bumiputera entrepreneurs (MECD 2007). Furthermore, according to Malaysia’s SME annual report, RM5 million was disbursed in 2007 by the Ministry to offer 307 factories with basic facilities for Bumiputera entrepreneurs (BNM 2008) to rent.

As a consequence, these significant national strategies led to the creation and support of Bumiputera entrepreneurial small firms engaging in a diverse range of economic activities including new high technology industries (Ismail, Mohd Zain & Ahmed 2006) which are regarded as a vehicle for economic growth and new employment creation (Delapierre et al. 1998; Wright et al. 2008). Nevertheless, such efforts by the Malaysian government did not increase the percentage of Bumiputera participation in economic activities. The reasons for this are explained below.

2.3.4 Problems concerning Bumiputera Participation in Entrepreneurship

Bumiputera-owned firms are commonly regarded as less efficient in Malaysia despite these entrepreneurs receiving many privileges and assistance from the government (Ismail
Bumiputera entrepreneurs are said to face many problems or barriers in conducting their businesses successfully due to the historical context, mentality and tradition of political intervention.

As mentioned previously, many efforts were made by the government in its promotion of a more viable Bumiputera Commercial and Industrial Community. This may be explained by the mentality of Bumiputera entrepreneurs in conducting business. The mentality of Bumiputera entrepreneurs is considered to be one of the main factors which led to Bumiputera participation problems in entrepreneurship (Kechot & Khalifah 1999). Their unwillingness to take risks and the lack of business skills are evidenced by the ‘Ali Baba’ business practice (Omar 2003). This business practice can be illustrated by the action of non-Bumiputera (mostly Chinese entrepreneurs) using Bumiputera companies or names to obtain business grants, licences or projects. In return, these Bumiputera status companies just take commissions that are usually based on profit-sharing without directly being involved in the project or grants given by the government. Eventually, these Bumiputera partners are not exposed to real business practices, which lead to poor performance. In fact, these Bumiputera entrepreneurs are prone to fail because they sell their shares and contracts to non-Bumiputera firms, especially Chinese ones, in order to gain a quick profit.

In addition, the ability of Bumiputera entrepreneurs to receive any government grants or financial assistance was usually based on their connection with public figures, especially politicians. Many Bumiputera politicians (specifically Malays) are indirectly involved in business activities. In fact, some of them are leaders in a particular industry because it is easier for them to leverage their political influence into the development of their business. These ‘carried’ Malay entrepreneurs are created by the United Malay National Organisation’s (UMNO) political power and granted lucrative government contracts (Omar 2003). However, Malay entrepreneurs are not excused from poor corporate governance where many enterprising Malays and politicians chose to become rich in an easy way via politics. As a result, this situation led to the term of the political entrepreneur (Omar 2003). Through NEP and NDP policies managed to create a group of entrepreneurs under the BCIC banner, this is considered only to be a temporary solution for carried entrepreneurs. This is due to that fact that the policy implemented was set for a medium term period, and would change according to the global economic environment and Malaysia’s political circumstances. Therefore, Omar (2003) urged political entrepreneurs
to be eliminated from Malaysia’s culture because this mix was not good for the country and only resulted in personal interests being promoted.

Previous studies (Jesudason 1997; Sloane-White 2008) has also uncovered that the establishment of ethnic Chinese in the business activities, even prior to independence, hindered the ability of the Bumiputera Malays to advance their business. In this respect, the superiority of Chinese in business is likely to generate a Bumiputera economic inferiority (Sloane-White 2008). This can be interpreted in terms of the domination of the Chinese in the supply chain of the business activities, whereby they have established their business networks and business practices in the country, in which this led to the difficulty for the Bumiputera entrepreneurs to cope with this situation (Jesudason 1997). In addition, the cultural differences between both Bumiputera Malays and non-Bumiputera Chinese may also contribute to the inability of the Bumiputera to sustain their business (Montesino 2012), especially in terms of Chinese economic hegemony which led to the Ali-Baba practices whereby the Chinese still preserve their economic power by collaborating with Bumiputera partners who are responsible to get government contracts.

In summary, the development of Indigenous-Bumiputera entrepreneurs in Malaysia has sparked interest from many stakeholders, specifically the Malaysian government as well as the Bumiputera society as a whole (Hamidon 2009). In fact, research into Bumiputera entrepreneurship is at an embryonic stage and thus mainstream entrepreneurship theory should cater to its idiosyncrasies, especially when explaining the lack of Malay entrepreneurs.

2.4 SMALL AND MEDIUM ENTERPRISES (SMEs): A MALAYSIAN PERSPECTIVE

2.4.1 Definitions of SMEs
From a global perspective, there is no uniform definition of an SME due to different criteria being employed (Ayyagari, Beck & Demirguc-Kunt 2007). From Malaysian perspective, the government has adopted a common definition of SMEs in various economic sectors or subsectors in order to facilitate effective development policies, provision of assistance and support programmes to the SMEs. The definition of what constitutes an SME in Malaysia is based on size, turnover and business activity (Saleh &
Ndubisi 2006). In terms of an enterprise’s business activity, two broad categories are applied: (a) manufacturing, manufacturing-related services and agro-based industries; and (b) services, primary agriculture and information and communication technology (ICT). Furthermore Malaysian SMEs can also be grouped into three categories: micro, small and medium. These categorisations are based on either the number of employees that a firm employs or the total sales or revenue generated by a firm in a year.

Based on Table 2.2 and Table 2.3, SMEs in Malaysia can be defined into two broad categories according to the activity of an enterprise. First, an SME which is involved in category (a) must have fewer than 150 full-time employees OR an annual sales turnover of less than RM25 million. Meanwhile, for an SME under which fall under category (b), this enterprise must have fewer than 50 full-time employees OR an annual sales turnover of less than RM5 million.

Table 2.2: Number of Full-Time Employees

<table>
<thead>
<tr>
<th>Size</th>
<th>Manufacturing (including agro-based) &amp; Manufacturing-related services</th>
<th>Primary Agriculture</th>
<th>Services Sector (including ICT*)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Micro</td>
<td>Less than 5 employees</td>
<td>Less than 5 employees</td>
<td>Less than 5 employees</td>
</tr>
<tr>
<td>Small</td>
<td>Small Between 5 and 50 employees</td>
<td>Between 5 and 19 employees</td>
<td>Between 5 and 19 employees</td>
</tr>
<tr>
<td>Medium</td>
<td>Between 51 and 150 employees</td>
<td>Between 20 and 50 employees</td>
<td>Between 20 and 50 employees</td>
</tr>
</tbody>
</table>

Source: National SME Development Council (2009)

Table 2.3: Annual Sales Turnover

<table>
<thead>
<tr>
<th>Size</th>
<th>Manufacturing (including agro-based) &amp; Manufacturing-related services</th>
<th>Primary Agriculture</th>
<th>Services Sector (including ICT*)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Micro</td>
<td>Less than RM250,000</td>
<td>Less than RM200,000</td>
<td>Less than RM200,000</td>
</tr>
<tr>
<td>Small</td>
<td>Between RM250,000 and less than RM10 million</td>
<td>Between RM200,000 and less than RM1 million</td>
<td>Between RM200,000 and less than RM1 million</td>
</tr>
<tr>
<td>Medium</td>
<td>Between RM10 million and RM25 million</td>
<td>Between RM1 million and RM5 million</td>
<td>Between RM1 million and RM5 million</td>
</tr>
</tbody>
</table>

Source: National SME Development Council (2009)
2.4.2 SMEs’ Contributing Roles

Small and Medium Enterprises (SMEs) play an important role in developing Malaysia’s economy in the long term (Abdullah et al. 2009). The government’s commitment to, and concern for, the development of SMEs has been clearly evident since the early 1970s when the ‘New Economic Policy’ was introduced in 1971, which aimed to improve people’s socioeconomic welfare and restructure ethnic economic imbalances (Saleh & Ndubisi 2006), especially through business enterprises. Since that period, SMEs have been increasingly regarded as the backbone of industrial development driving the country’s economic growth. According to the SME Annual Report 2012/13, SMEs represent 97.3 percent of total business establishment and contribute 57.4 percent of total employment in 2012 (NSDC 2013).

In fact, SMEs are an important way in which the government is transforming the country from a middle-income economy to a high-income economy as stipulated in the New Economic Model (NEM), specifically through an Economic Transformation Programme (ETP). According to the National Economic Advisory Council (2010), the introduction of the NEM in March 2010 by the Prime Minister aimed to achieve per capita income between USD 17,000 and USD 20,000 by 2020. Additionally, the ETP as outlined in the NEM constitutes a key pillar to guide Malaysia as an advanced nation in line with the Vision 2020 project (National Economic Advisory Council 2010). In order to achieve this objective, the NEM focuses on the establishment of new firms through assistance and support to them by investing in innovative and technologically advanced products and services, specifically by implementing some 30 government programmes to help micro-enterprises and SMEs.

2.4.3 The Malaysian Government Support and Policies for SME Development

The National SME Development Council (NSDC), a public enterprise that was formed in 2004, acts as an important platform to structure and supervise the overall policy direction and strategy for SME development, specifically in bringing together 15 ministries and more than 60 government agencies to work together in developing Malaysian SMEs (National SME Development Council 2009; Economic Planning Unit 2010). In the early years of its establishment until 2008, Bank Negara Malaysia (BNM) - the central bank of Malaysia - assumed the role of a coordinator or Secretariat to the Council, especially in facilitating the strong foundation for SME development of better policy formulation,
monitoring and assessment (National SME Development Council 2009). Nevertheless, in 2007, the NSDC decided to appoint a single dedicated agency to formulate overall policies and strategies for SMEs and to coordinate programmes across all related ministries and agencies.

The Annual SME Integrated Plan of Action (formerly known as the National SME Development Blueprint) is one of this Council’s key outcomes, which aims to enhance the implementation of SME development programmes. The SME annual report for 2012/13 reported that a total of 139 development programmes were implemented in 2012 with a financial commitment of RM 7.1 billion to build up the capacity of SMEs (NSDC 2013).

As a result, the Small and Medium Industries Development Corporation (SMIDEC, founded in May 1996) was tasked to assume the role. This decision has led to a remarkable event that illustrates the government’s commitment to promoting SME development; the amendment to the SMIDEC Act that was approved by the Parliament in July 2009. This amendment transformed SMIDEC into SME Corporation Malaysia (known as SME Corp. Malaysia) which commenced operating on 2 October 2009. SME Corp. Malaysia is currently the central point of reference for information and advisory services for all SMEs and may ultimately improve synergy and efficiency amongst relevant stakeholders such as state governments and the relevant ministries so that they complete the national agenda of producing competitive and resilient world-standard SMEs. Additionally, SME Corp. Malaysia will report annually to the NSDC which is chaired by the Prime Minister (Economic Planning Unit 2010).

Apart from this, efforts in promoting innovation-led and technology-driven SMEs have been further strengthened with the establishment of several government agencies such as Malaysian Technology Development Corporation (MTDC) in 1992, Standards and Industrial Research Institute of Malaysia Berhad (SIRIM Berhad) in 1995, Multimedia Development Corporation (MDeC) in 1996 and Malaysian Biotechnology Corporation (Biotech Corp.) in 2005. These agencies have been mandated to introduce technology foresight programmes, specifically in the development of technology-based industries such as ICT and biotechnology.

To assist Bumiputera entrepreneurs in SMEs, the Bumiputera Exporters Development Programme (BEDP) was implemented in 2012 by the Malaysia External Trade
Development Corporation (MATRADE) to assist Bumiputera SMEs develop necessary skills to export their products, whereby this program has generated RM40.5 million export sales (NSDC 2013). Besides, the Ministry of Rural and Regional Development’s (MRRD) programmes in 2012 focused on enhancing the income and quality of life of rural communities. This includes constructing business premises to be rented to rural Bumiputera entrepreneurs and producing cattle and goat feeders for Additional Economic Activity (AET) smallholders for feed lotting purposes (NSDC 2013).

The ability of the Malaysian SMEs to succeed in a business should not necessarily be dependent on government-based support. It could be examined in terms of its relationship between the cultural environment and a firm’s business processes (Ahmad, Ramayah, Wilson & Kummerow 2010).

The next section will briefly discuss the concept of new technology-based small firms in order to further understand the Bumiputera participation in technology-based SMEs.

2.5 NEW TECHNOLOGY-BASED SMALL FIRMS (NTBSFs)

2.5.1 Defining NTBSFs

The definition of what is regarded as a technology-based firm is still quite vague as there is no consensus and/or measurable criteria of this definition in the literature (Baruch 1997; Grinstein & Goldman 2006; O'Regan & Sims 2008). Nonetheless, much literature refers to the fact that most technology entrepreneurship scholars would define a technology-based firm according to: an organisation’s research and development (R&D) activities or investments (Knight 1986; Grinstein & Goldman 2006); the composition of the firm’s human resource (Baruch 1997; Felker & Jomo 2007); and the area of technological activities and applications of the firm (Baruch 1997; Autio & Parhankangas 1998; Dahlstrand 2007).

According to Balkin, Markman and Gomez-Mejia (2000), a commonly accepted approach to defining a high technology firm is normally based on the degree of expenditure on R&D as a percentage of sales (i.e. greater than five percent) (Baruch 1997). Based on a study conducted by Oakey and Mukhtar (1999), technology-based small firms are classified as being dependent on the amount that each firm spends on R&D activities. This is because
high technology-based small firms normally spend large amounts of money compared to less technology-based small firms due to their tendency to have sophisticated machinery and hire knowledge workers with IT skills.

From the technological perspective, a high technology firm is one that is established for the purpose of exploiting an invention or technological change (Delapierre et al. 1998) in which the firm normally uses complex technology (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 that one important factor is the application and exploitation of technology in running a business (Dahlstrand 2007). From another perspective, the mix of technology-based human capital in a firm also been stressed by several previous scholars (Koberg, Sarason & Rosse 1996; Baruch 1997) in which a technology-based firm is normally measured by the number of technical workers such as the ratio of scientists and engineers.

In Malaysia a high-technology based firm, as outlined by MIDA, must fulfil two main criteria in applying for 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 (Felker & Jomo 2007); and secondly, the human resources should consist of 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, Malaysia can currently be classified as an emerging country that could perform at par with other Asian newly industrialised economies (NIEs), especially Hong Kong, South Korea, Singapore and Taiwan. The justification is based on two recent reports published by a local organisation and an international organisation. First, based on the Science and Technology Indicators in second quarter of 2013 produced by the Malaysian Science and Technology Information Centre (MASTIC 2013), Malaysia ranked 35 out of 60 selected countries in terms of scientific and technological activity sits below first generation NIEs (except Hong Kong) since its national R&D expenditure only
accounts for 1.07 percent of its Gross Domestic Product (GDP), which is lower than South Korea (3.74 percent) and Singapore (2.23 percent).

In addition, Table 2.4 shows the Global Competitive Report 2013-2014 published by the World Economic Forum (2013), which indicated that Malaysia is performing well in implementing its innovation activities amongst the first generation NIEs, especially in regards to S&T activities. The Malaysian capacity for innovation ranked first amongst those countries (15th in the world). Rankings for other criteria were: availability of scientists and engineers (3rd), quality of scientific research institution (4th) and university-industry collaborations in R&D (3rd). The good performance of Malaysia in innovation activities can be examined in terms of high-technology exports percentage of manufactured exports as reported in the World Development Indicator 2013 (World Bank 2013), in which in 2011, 45.2 percent of the Malaysian manufactured exports were high technology exports, which was slightly lower than Singapore (45.2 percent) and Philippines (46.4 percent).

**Table 2.4: Ranking on Innovation Activities (Countries Rankings)**

<table>
<thead>
<tr>
<th>Countries</th>
<th>Capacity for innovation</th>
<th>Availability of scientists and engineers</th>
<th>Quality of scientific research institutions</th>
<th>University-Industry Collaboration in R&amp;D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malaysia</td>
<td>15</td>
<td>19</td>
<td>27</td>
<td>16</td>
</tr>
<tr>
<td>Singapore</td>
<td>18</td>
<td>14</td>
<td>11</td>
<td>4</td>
</tr>
<tr>
<td>Taiwan</td>
<td>19</td>
<td>12</td>
<td>19</td>
<td>11</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>29</td>
<td>32</td>
<td>31</td>
<td>21</td>
</tr>
<tr>
<td>Korea, Rep.</td>
<td>22</td>
<td>33</td>
<td>24</td>
<td>26</td>
</tr>
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</table>


On the other hand, March and Gunasekaran (1999) argued that the studies covering technology-based firms normally tended to take a sector as a reference. Due to the lack of a clear definition of what constitutes a technology-based firm as mentioned before, some researchers used a firm’s industry membership in defining a technology-based firm (Grinstein & Goldman 2006). For instance, Zahra and Kirchhoff (2001) conducted a comparative study on the effect of select technological resources on the domestic and international sales between low and high technology industries. In another study, Gersony (1996) investigated the impact of technology maturity from biotechnology and software industries on the strategic alliance option.
As a result of the inconsistencies of criteria employed by the scholars, the thesis will only focus on two technology industries that are listed as promoted activities for high technology companies and are eligible for Pioneer Status or Investment Tax Allowance under the Promotion of Investment Act 1986 in Malaysia. The two selected industries are biotechnology and ICT as they are currently being heavily promoted by the government. There have been several policies launched by the government in the following areas: Malaysia Biotechnology Policy and Multimedia Super Corridor (MSC). Besides these two technology-based industries, other technology-based industries are also considered in order to further understand the factors that may affect the sustainability of Bumiputera NTBSFs.

For example, the food technology industry may also be investigated due to Malaysia’s goal to become the ‘Global Halal Hub’ for the production and trade in Halal products and services. Al-Harran and Low (2008) claim that the global Halal market is estimated at US$580 billion a year. The Halal food industry is claimed to be growing at a rate of seven percent annually (Al-Harran & Low 2008). As a result, Malaysia established the Halal Industry Development Corporation to coordinate overall industry development to facilitate and promote the growth of local companies in the global halal market.

Based on the above reviews, the Bumiputera NTBSFs in this thesis are defined 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 is involved in any of the technology industries within six to eight years of its operating age (Song et al. 2008).

### 2.5.2 Contributing Role of Technology-Based Firms

It is becoming increasingly difficult to ignore the importance of technology-based firms, especially towards the growth and development of both national and international economies (Bantel 1997; Aspelund, Berg-Utby & Skjevdal 2005; Grinstein & Goldman 2006; O'Regan & Sims 2008; Buganza, Gerst & Verganti 2010) as well as a country’s technological innovation and performance (Ullah & Taylor 2007; Cooper & Park 2008). This is because the evolution of Science and Technology (S&T) has led to the creation of business opportunities and customers’ needs, giving rise to the emergence of technology-based firms (Granstrand 1998). This view is supported by Makri, Lane and Gomez-Mejia (2006) who claimed that technology-based firms play a critical role in a country’s economic development, specifically in terms of job creation and productivity.
Additionally, Bozkaya and De La Potterie (2008) stated that the great economic impact created by technology-based firms are through the translation of invention into business innovation and Research and Development (R&D) activities. For these reasons the importance of newly-established technology-based small firms is a special case worth investigating, especially from the perspective of a developing country. Moreover, since the mid-1980s technological activities of SMEs, specifically NTBSFs, have received considerable attention from researchers and policy-makers (Almus & Nerlinger 1999; Ullah & Taylor 2007; Taymaz & Üçdoğruk 2009; Buganza et al. 2010).

2.6 SUSTAINABILITY OF BUSINESS

Rapid changes in today’s fierce business environment have been associated with technological advances such as information technology applications and new product development, which have increased international competition amongst businesses (Bruno, Leidecker & Harder 1987; Collins & Grimes 2008). This change requires a firm to compete with other firms in a strategic manner in order for that firm to survive in an industry (Cravens, Piercy & Baldauf 2009; Froschhesier 2009). This phenomenon has led to the issue of business sustainability as firms are primarily concerned with operating a business and getting ahead of the competition (Collins & Grimes 2008; Froschhesier 2009). Brand et al. (2007) argued that an understanding of factors that influence the sustainability of SMEs is essential if the government wants to develop and implement entrepreneurship activities in a country which eventually will increase its economic competitiveness.

Further, based on the Annual Reports produced by the CCM, the number of companies wound up was increased for the past seven years as shown in Table 2.5. The closure of these companies was due to both voluntary liquidation by members and liquidation by the court. Besides, the economic health of the country might also affect this situation, whereby in 2009 the number of companies wound up increased drastically from 1450 to 2013 due to economic crisis in that year, which impacted the ability of many SMEs to survive in the market (Wan Chik, Selvadarui & Er 2013).
### Table 2.5: Winding up of Companies

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<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Companies Wound up</td>
<td>2,419</td>
<td>1653</td>
<td>1487</td>
<td>2013</td>
<td>1450</td>
<td>1276</td>
<td>955</td>
</tr>
</tbody>
</table>


From a global perspective, Yrle, Hartman and Yrle-Fyrou (2000) state that in the mid-1980s the United States’ economy experienced an outstanding new business expansion, yet there has been a remarkable increase in the rate of business failures due to managerial inexperience and inadequate financing conditions (Land 1975; Martin & Staines 1994; Bekele & Worku 2008). This situation shows that the growing number of firms in an industry make an impact on the firm’s survival rate and sustainability due to the competitive environment. Headd’s (2003) study indicates that failure rates for new ventures might be as high as 30 per cent over the first two years of operations. This may explain the recent study by Townsend, Busenitz and Arthurs (2010) which argued that the successful creation of innovative new ventures is a challenging endeavour.

Nevertheless, there have been few discussions on the implications of sustainability at the level of a single enterprise (Mann & Gazzarin 2004). Therefore, a study on the sustainability of Malaysian Bumiputera technology-based small firms may fill the gaps in explaining the nature of sustainability at the level of a single enterprise. Further, many small businesses, especially amongst Bumiputera small and medium enterprises (SMEs), are prone to failure in operating a business (Mat Zain & Senteri 1998; Mohd Noor et al. 2002) due to intense competition from others (especially Chinese entrepreneurs), limited access to initial capital, low levels of technology, a lack of innovation through research and development, and shortages of available skilled workers (Ismail et al. 2006; Abdullah et al. 2009).

Moreover, the introduction of the liberalisation policy in April 2009 and October 2011 by the Malaysian government may directly affect the sustainability of entrepreneurial firms, particularly Bumiputera-owned firms. This new liberalisation policy gives more opportunities to the foreign firms and non-Bumiputera firms to expand their business operations as no equity condition is imposed in 17 service subsectors. Even though, the implementation of this policy aims to inject competitiveness in Malaysian economic landscape and to achieve 30 per cent Bumiputera equity ownership in the corporate sector.
by 2020, yet the low Bumiputera equity ownership of 21.9 percent in 2008 (Economic Planning Unit 2010) raises the question: ‘how can this group sustain their business operation in the long term?’ Hence, the following section explores the definition of business sustainability in global practise, which will be followed by a discussions of the main concepts of business sustainability and indicators that are relevant to this research.

2.6.1 Definition and Elements of Business Sustainability

According to Solow (1991), who was the 1987 Nobel Prize winner in economics, the term sustainability has been a buzzword since the early 1990s and been widely discussed in the context of long-run economic policy. Chen, Newbury and Park (2009) contend the most cited definition of sustainability is as outlined by the United Nations World Commission on Environment and Development (UNWCED) in the report ‘Our Common Future’. In Article 27 of the report, the UNWCED defined the term sustainability as: ‘Development that meets the needs of the present generation without compromising the needs of future generations to meet their own needs’ (UNWCED 1987). This definition has been widely applied in both business and non-business perspectives (Chen, Newbury, et al. 2009). This study will focus on the business perspective, where business sustainability has been defined as the ability of a firm to continue the same type of business into the next generation (Mann & Gazzarin 2004; Elliott 2005). This concept has also been viewed as a measurement of an enterprise’s long-term viability (Ma 1999). Meanwhile, Funk (2003) describes a sustainable firm as one whose characteristics and actions are designed to lead to a desirable future for all stakeholders. The firm’s desired future may comprise of sustaining its viability and profitability over a long period while at the same time being able to increase its value amongst its stakeholders (Funk 2003).

Business sustainability may consist of two major elements: continuation of the same type of business and long-term viability (O’Gorman 2001; Mann & Gazzarin 2004). The continuation of the same business has been associated with reflecting a firm’s success (Lussier & Halabi 2008). This is because the simplest definition of a firm’s success is reflected in the continued business operation or trading activities, whilst the opposite, failure is equivalent to cessation of trade (Watson, Hogarth-Scott & Wilson 1998; Yrle et al. 2000; Simpson, Tuck & Bellamy 2004). O’Gorman (2001) mentioned that the sustainability of growth in SMEs can be achieved by experiencing continual business growth over a long period of time. Meanwhile, 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 the sustainability of a business amongst small firms can be predicted by looking at their ability to operate in the long term.

According to Acquaah (2003), a firm’s ability to survive in a business environment is likely to depend on its corporate management skill in sustaining a competitive advantage. A firm’s possession of resources and capabilities which are valuable, rare, imperfectly imitable (difficult for other competitor to imitate a firm’s offering) and substitutable by other firms may be likely to influence a firm’s profitability and performance for an extended period of time (Acquaah 2003; Brand et al. 2007). In this respect, Esteve-Pérez and Mañez-Castillejo (2008) found that the exit probability of new entrants is initially low, then increases to reach a peak at approximately 20 years of age. This probability eventually decreases up to 35 years of age. Then, the exit probability will accelerate beyond 75 years of age. Nevertheless, their study does not include those firms with less than 10 employees which are more relevant to this thesis.

Further, Honjo (2000) contends that newly-established firms are less likely to survive in competitively-characterised industries, which have high entry rates, such as the electrical machinery industry and printing industry. These findings show that the survival rate of newly established companies may not only be affected by the number of years that a company is in business, but also by other external factors such as the industry’s competitive environment. For example, the Asian financial crisis of 1997 impacted adversely on the majority of businesses in Malaysia (de Sausmarez 2004). This could be explained by the rapid depreciation of the currencies of several countries, many firms were not able to raise funds for buying foreign currency, thus eventually affecting their capacity to obtain resources and pay their debts from/to other foreign firms (Butler & Sullivan 2005).

2.6.2 Main Concepts of Business Sustainability

Lagerberg and Brown (1999) claimed that sustainability is such an elusive concept. Nevertheless, based on previous studies on business sustainability, the concept of a sustainable business can be understood by two main perspectives as illustrated in Figure 2.2 (Mann & Gazzarin 2004): societal sustainability and enterprise sustainability.
The first concept concerns the development of a business contributing to society such as corporate social responsibility and environmental management (Funk 2003; Tilley & Young 2006; Enquist, Edvardsson & Sebhatu 2007). The second concept refers to the development of a business that specifically relates to its sustainability, viability and profitability (Baaij, Greeven & Van Dalen 2004; Villalonga 2004; Esteve-Pérez & Mañez-Castillejo 2008; Froschhesier 2009). According to Mann and Gazzarin (2004), many publications refer to the first concept when discussing business sustainability.

Nevertheless, this thesis attempts to harmonise both concepts of business sustainability, which emphasizes a firm’s operational perspectives as well as it contribution towards societal sustainability. As argued by Timmons and Spinelli (2009), sustainability includes the concept of economic viability in which a firm’s revenues and earnings must sustain ongoing business success, and profits must be reinvested into the development of new products or services. In this respect, this thesis posits that any benefits gained from the economic activities should also be contributed to the development of a sustainable society in a developing country. Thus, the selection of the second concept of sustainability may provide a clear indicator to explain how the enterprise sustainability amongst Bumiputera entrepreneurs would also lead to the development of societal sustainability.

2.6.3 Indicators of Business Sustainability

There is a need for this thesis to identify factors from both founder-specific factors and firm-specific resources that may influence business sustainability according to the relevant indicators. The identification of these factors will help explain the relationship between identified factors and business sustainability and eventually help determine the important factors influencing long term viability of the business. A set of business sustainability indicators will be used to determine and explain the relationship between factors and business sustainability. For instance, a founder’s skills may be one of the important factors
influencing business sustainability due to their significant roles with performance and competitive advantage.

According to Robson, Prabhu and Mitchell (2002), business sustainability from a firm’s operational perspective can be also measured by 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 profitability and new product development. ‘Profit persistence’ may also be used as a measure of business sustainability (Villalonga 2004) since the level of a firm’s profitability could affect its economic survival (Esteve-Pérez & Mañez-Castillejo 2008). The introduction of new products may also provide a competitive advantage as this activity will lead to the generation of profit, which affects the firm’s sustainability.

From another perspective, the impact of change from the operational perspective may also be measured in terms of the role of the firms towards the development of its society. The operations of the entrepreneurship activities by the Indigenous entrepreneurs can simultaneously generate economic growth as desired, while advancing social objectives toward achieving Indigenous societal sustainability (Hall, Daneke & Lenox 2010). This form of business can be regarded as what Brueckner, Paulin, Davis and Chatterjee (2010) labelled an Indigenous social enterprise, concerned with overcoming social and economic obstacles faced by the Indigenous people through entrepreneurship activities. Interestingly, Mann and Gazzarin (2004) posit that the income generation from entrepreneurship activities might also be regarded as a social indicator that lead to a better societal transformation, such as increased income status. In the context of this thesis, the Bumiputera entrepreneurs help their society through new product creation or job creation which helps to overcome society’s problems or portray a better image of the Bumiputera in the economic activities.

To summarise, business sustainability has become an important issue, specifically with reference to technology-based small firms given the rapid changes in the global business environment. The ability of a firm to continue business operations in a technology industry in the long term will constitute a definition of business sustainability. Competition
intensity in technology industries, which is normally characterised by high research and development (R&D) and high product innovation, requires the firm to pay serious intention to factors that may influence a sustainable business. In addition, a group of economic performance indicators such as profitability and productivity and societal contribution may also be utilised to represent the relationship between factors identified and business sustainability.

2.7 SUMMARY

This thesis focuses on the factors influencing the sustainability of business amongst Malaysian Bumiputera NTBSF. The literature review in this chapter has recognised that the development of Bumiputera entrepreneurship through affirmative actions as an instrument by the Malaysian government to restructure the socioeconomics of society and eradicate poverty amongst Malaysian multiethnic people (Husin Ali 2008; Montesino 2012; Gomez 2013). In line with the literature of Indigenous entrepreneurship development conducted around the globe such as in the continent of Australia and Oceania (Frederick & Foley 2006; Maritz 2006; Foley 2008; Pearson & Helms 2013), the continent of Africa (Naudé & Havenga 2007; Dzisi 2008; Sonobe, Akoten & Otsuka 2011), the continent of America (Redpath & Nielsen 1997; Galbraith et al. 2006; Dana 2007a) and continent of Asia (Siddique & Leo 1981); this thesis shows that many incentives have been provided by the government, including financial assistance and business training to develop their business acumen. Nevertheless, the effectiveness of such incentives may not necessarily bring a positive outcome to the Indigenous entrepreneurs (Pearson & Helms 2013), which can be related to the government’s ability to determine what main assistance is needed by the Indigenous entrepreneurs. Indeed, limited study has been conducted on this issue, especially in regard to the relevant business stakeholder to really ‘communicate’ the needs of the Indigenous entrepreneurs in sustaining their business.

In addition, much Bumiputera entrepreneurship research has focused on traditionally-based business sectors, implicitly assuming that the participation by Bumiputera in those industries should be more encouraged by the Malaysian government (Mat Zain & Senteri 1998; Abdullah et al. 2009). Indeed, with the introduction of policies such as NEM and Malaysia National Innovation Policy that provide a guideline for Malaysia to become a high-income nation by 2020, the technology-based sectors have been regarded a main focus that drives the country’s economic growth. Shane (2009) also suggests that the
formulation of entrepreneurship policies should focus on high-growth industries which bring more impact to the society. It is the intention of this thesis to fill in this gap by exploring what factors matter in the development and sustainability of Bumiputera technology entrepreneurship through the designation of conceptual framework on this issue. Further, the proposed conceptual framework can also guide the Bumiputera entrepreneur in managing their technology business venture.

Much literature on sustainability has been discussed, yet it is deficient in several aspects. Mann and Gazzarin (2004) argued that the discussion on the main concepts underpinning the sustainability at the business level by many studies was less comprehensive. This is primarily because the discussion of business sustainability was examined from an economic perspective rather than investigating other aspects such as societal perspective that might also impact a firm’s business sustainability.

This thesis attempts to fill this deficiency by proposing a framework that explains how the enterprise sustainability can also influence the societal sustainability amongst Indigenous people. Moreover, the sustainability indicators of an enterprise are mainly based on economic values such as profitability, whereby the perceptions of what constitute a success or failure may be different for some ethnic groups such as Bumiputera, where cultural aspects rank highly and the collective achievements of the society are more important than measurements on an economic basis only. In summary, reflecting back on the research question of this thesis, this chapter has specifically defined the main concepts of sustainability of Bumiputera entrepreneurship in Malaysia’s technology-based industries. The key concepts such as who are the Bumiputera people, the nature of technology-based industries as well as sustainability in the Indigenous firms need to be understood if these questions are to be answered.

The next chapter will discuss on the development of the conceptual framework underpinning this thesis based on the key concepts uncovered in this chapter, especially in regards to the sustainability of Bumiputera technology firms.
CHAPTER THREE

THEORETICAL LENS AND CONCEPTUAL FRAMEWORK DEVELOPMENT

3.0 INTRODUCTION
Based on the literature review and the outcomes of the pilot study, this chapter firstly discusses three theories associated with the sustainability of Bumiputera technology entrepreneurs. Then, this chapter develops a conceptual framework in order to further explore key factors influencing the sustainability of business performance amongst Malaysian Bumiputera NTBSFs. The development of this framework may also facilitate the generation and revision of conceptual model that will be explored and analysed empirically in Chapter 9.

3.1 THEORETICAL LENS
Three theories associated with the sustainability of Bumiputera technology entrepreneurs, namely: human capital theory, resource-based view of a firm theory and social capital theory.

3.1.1 Resource-Based View of a Firm Theory (RBV)
Historically, the development of the Resource-Based Theory (RBT) can be traced from Penrose’s (1959) seminal study that discussed the growth of a firm based on its possession of adequate resources in conducting its business operations (Link & Siegel 2007). Inspired by this study, Wernerfelt (1984) consolidated the study and introduced a new term of ‘Resource-Based View’ (RBV) of a firm that emphasises a firm is to conceive and implement its strategy based on the value of its resources in order to achieve superior performance (Galbreath 2005; Link & Siegel 2007). Seven years later, the study of RBV theory was starting to receive attention in the management field via a special research forum published in the Journal of Management, whereby several authors (Barney 1991; Conner 1991; Fiol 1991) contributed their work towards a further understanding of resource-based view of the firm. For example, Barney (1991) laid out the important principles of the RBV by suggesting two assumptions underpinning the RBV framework:
first, the strategic resources that the firms control within an industry may be heterogeneous in nature, and second, these resources may be imperfectly mobile across firms. Further, these strategic resources must be valuable, rare, inimitable and non-substitutable in order to create a potential source of strategic competitive advantage (Barney 1991; Barney 2012).

Barney, Ketchen and Wright (2011) considered this issue as an introductory stage of RBT towards becoming an established theory for describing, explaining and projecting a firm’s performance and sustainability, especially in terms of outlining the theoretical logic of RBT (Maritan & Peteraf 2011). Interestingly, the RBV principles laid out in this issue led to the creation of other spin-off perspectives such as the knowledge-based view (Grant & Baden-Fuller 1995; Grant 1996). Ten years after the first issue published, Barney, Wright and Ketchen (2001) edited the second special issue that examined the development and contributions of the RBV. This issue has extended the application of RBV tenets in scholarly works that were not only applied in the field of strategic management, but also in other fields of research such as human resource management, economics and entrepreneurship (Barney et al. 2001).

From the entrepreneurship research perspective, Alvarez and Busenitz (2001) claimed that the interface between the RBT and entrepreneurship is directed towards recognising the value of resources possessed by a firm, especially in terms of the creation and acquisition of heterogeneous firm resources. This could be explained in terms of limited resources possessed by entrepreneurial firms which requires them to be selective in implementing a business strategy (Katila, Chen & Piezunka 2012) based on their idiosyncratic bundle of resources that is valuable and different from competitors (Alvarez & Busenitz 2001; Zahra & Kirchhoff 2001). Moreover, the ability to expand and renew their resources is important for new growing firms to sustain growth and business operations (Stam & Wennberg 2009).

Based on this theory, a firm is viewed as a unique bundle of idiosyncratic resources and capabilities in which the deployment of these valuable resources is crucial for management to increase the value of the organisation (Grant 1996; Wu & Wang 2007). If a firm can create a position by which its organisational resources are difficult for other firms to imitate and these resources are high in value from the stakeholder’s perspective, then the
firm has managed to create an organisational competitive advantage (Alvarez & Busenitz 2001). Nevertheless, Galbreath (2005) points out that to identify and create a comprehensive list of resources that are crucial to a firm’s sustainable competitive advantage is an overwhelming task. This is due to the different perspectives of each interest group in defining the types of required resources and the specific requirement of different industrial sectors. Moreover, with the stiff competition faced by the firms in the industry, Barney (2012) suggests the allocation of strategic resources may provide a temporary advantage to a firm. Thus, an understanding of what resources matter is important to guide the entrepreneurs in sustaining the business.

In shedding some light on this issue, Fahy (2002) proposed two categories of resources that potentially can be exploited by a firm, Firm-Specific Resources (FSRs) and Country-Specific Resources (CSRs). From an organisational perspective, FSRs can be divided into three main classifications: tangible assets, intangible assets and organisational capabilities (Wernerfelt 1984; Fahy 2002). Tangible assets refer to the fixed, or current assets of the organisation, which are fixed in a long-term capacity and includes factors containing financial or physical value as measured by the firm’s financial statement (Galbreath 2005). In contrast, intangible assets of the firms can be defined as any asset or factor that is non-physical in nature and difficult to be included in the firm’s financial statement (Galbreath 2005) such as corporate reputation and firm’s intellectual property (Fahy 2002). The last type of FSRs includes capabilities which refer to the skills, knowledge, invisible assets and intermediate goods of the organisation. Whilst, the country-specific resources that is also known as comparative advantage, can also be categorised into two types: basic CSRs and advanced CSRs. Basic CSRs refer to resources that are inherited, such as a country’s location, climate and its stock of natural resources. Meanwhile, advanced CSRs include national resources that are not inherited in a country and depend on a sustained investment over a period of time, normally labelled as a country’s capabilities or advanced factors of production such as a country’s education system and technological infrastructure.

In addition, the development of human and social resources of a firm is crucial towards sustainability of a business. In this respect, a firm’s resource acquisition could be implemented via its founder’s human capital and social capital (Maritan & Peteraf 2011). To understand this, the connection between RBT and HC theory could be investigated from a founder’s experiences, skills and knowledge towards a sustainable business. The
relationship between RBT and SC theory could be explained in terms of the socially complex nature of a firm’s resources such as its relationships amongst its society members (e.g. ethnic community) and business stakeholders as well as reputations in conducting a business (Barney 1991; Yang, Ho & Chang 2012). These socially complex firm resources would be imperfectly imitable by other competing firms and eventually create a sustained competitive advantage. In this thesis, the other two theories related with the sustainability of Bumiputera NTBFs business operations will be explained next.

3.1.2 Human Capital Theory (HCT)

Human capital has been defined as the level of skills and abilities of an individual that are developed either through formal education and training and/or work-related experience (Saffu, Apori, Elijah-Mensah & Ahumatah 2008). In short, human capital refers to the resources in people (Becker 1962). This type of capital is normally viewed as a people-related resource that may be considered as one element that could explain the generation of larger economic rents, such as income earnings by an organisation (del Valle & Castillo 2009). This is because an individual’s skills, abilities and knowledge are unique and a valuable intangible asset for a firm. Thus, these elements are considered as a source of competitive advantage due to the inability of other organisations to imitate and replace (Barney 1991; Hall 1992; Barcala, Pérez & Gutiérrez 1999; Wang, Wang & Horng 2010). Eventually, individuals with greater or higher quality human capital should be better in recognising and exploiting any profitable opportunities (Davidsson & Honig 2003).

According to Bates (1985), a firm can increase productivity and profitability by increasing human capital. Seminal studies conducted by Becker (1962, 1964) focused on the consequence of human capital investment, specifically an individual’s knowledge and skills via formal education and experience, which may have positive implications towards an individual or firm earnings. For instance, studies conducted by Bates (1985, 1989) contended that the educational background of the owner might have a higher percentage in generating a firm’s profit as well as being a major determinant of the loan amounts that commercial banks offer to small business formation. Inspired by these seminal studies, human capital theory has emerged in explaining and justifying the importance of human capital towards firm performance and sustainability (Brüderl, Preisendörfer & Ziegler 1992). Many current empirical studies have shown that any investment made in developing human capital may improve the entrepreneurial business performance of a firm.
(Dimov & Shepherd 2005; Danvila del Valle & Sastre Castillo 2009; Santarelli & Tran 2013) and firm’s earnings (Nafziger & Terrell 1996). Investments in human capital, both in education or training may improve skills and knowledge and eventually increase a firm’s profitability and performance (Becker 1962).

Human capital theory contends that having high human capital of a firm’s founder such as skills and experience may improve the probability of sustainability for a firm (Brüderl et al. 1992; Diochon, Menzies & Gasse 2008). Additionally, Shrader and Siegel (2007) mentioned that human capital is an important aspect in the context of technological entrepreneurship, particularly human skills and knowledge. Nevertheless, many discussions on the effects of the founder’s human capital towards business sustainability have been discussed only obliquely by many scholars especially in correlating the founder’s knowledge (Sun 2004; West & Noel 2009), skills (Roodt 2005), experiences (Reuber & Fischer 1994; Jo & Lee 1996), education (Robinson & Sexton 1994; Dickson, Solomon & Weaver 2008) and family background (Anderson & Miller 2003; Tervo 2006) with a firm’s performance. Furthermore, there is a paucity of studies that explicitly employed human capital theory into business performance and sustainability studies (Brüderl et al. 1992) even though human capital is a key resource for a firm (Zigan, Macfarlane & Desombre 2008). Further, studies on human capital that focused on new technology-based firms are minimal (Colombo & Grilli 2010). According to Barcala, Pérez and Gutiérrez (1999), a further complimentary study needs to be undertaken in the area of human capital theory if there is a lack of research that focuses on a particular sector. Hence, a study on sustainability of business amongst newly-established firms in the technology industry is needed in order to reduce the literature gap in human capital theory.

As a result, this thesis will constitute an initial study on the founder’s human capital towards the sustainability of Bumiputera technology-based small firms because there is a lack of studies exploring human capital in technology-based sectors in Malaysia. For example, a study was conducted by Saloma-Akpedonu (2008) on knowledge development of the Malaysian technological society. This study may be enhanced if the employment of other human capital aspects other than knowledge is applied in explaining the Malaysian technological society. Moreover, technology-oriented employees in their study only focused on engineers of Proton, a Malaysian automobile manufacturer, and professional workers in the Multimedia Super Corridor (MSC), which did not constitute any Malaysian
technology entrepreneurs, who are supposed to be one of the main members in the Malaysian technological society.

Prior studies (Bosma, van Praag, Thurik & de Wit 2004; Santarelli & Tran 2013) suggest the interaction between human capital and social capital will generate a positive impact towards a firm’s performance. In this respect, the third theory that will be applied in this study is the Social Capital Theory (SCT). The next section will discuss this theory as well as the applicability of this theory in the business sustainability.

3.1.3 Social Capital Theory

In general, social capital is defined as the sum of actual and potential resources that an individual or a group obtains from their relationship with others (Baron & Markman 2003) by possessing a durable networks of more or less institutionalised relationships of mutual acquaintance or recognition (Growiec & Growiec 2010). Additionally, social capital may also be regarded as resources embedded in a social structure of relationships that are utilised in purposive actions (Pirolo & Presutti 2010). Based on a previous study that examined the role of social capital on the creation of human capital, Coleman (1988) argued that the social capital is created when the relations amongst persons change in a way that enables action. In short, social capital may be regarded as knowing-who can facilitate specific resources needed by an individual. Social capital is also measured through the identification of networks and network relationships, which are sometimes defined by the strength of ties as well as repetitive group activity, specifically in terms of frequency of meeting and other formal and informal interactions between an individual and other people (Davidsson & Honig 2003).

From an organisational context, any knowledge or information that an organisation can access via relationships, either using both a firm’s internal formal sources (such as employees) or external informal sources (such as customers and business partners) can be regarded as organisational social capital (Anand, Glick & Manz 2002). Meanwhile, from the context of entrepreneurship, social capital is regarded as the goodwill and resources that originate from an entrepreneur’s network of social relationships (DeCarolis, Litzky & Eddleston 2009) and its effects flow from the information, influence, and solidarity accessible to the entrepreneur (Adler & Kwon 2002).
Moreover, recent developments in the field of entrepreneurship have led to a renewed interest in further investigating the implication of a firm’s social capital on business performance (Bosma, Hessels, Schutjens, Praag & Verheul 2012). Shane and Venkataraman (2000) claimed that the identification of lucrative opportunities in entrepreneurial activities posed a question as to why some people and not others exploit opportunities. Thus, social capital elements such as social networks and relational capital (DeCarolis et al. 2009) may explain different outcomes of entrepreneurial activities experienced by entrepreneurs. Additionally, researchers have recently shown an increased interest in investigating the role of social capital in influencing the performance of a firm, specifically in technology-based industries (Liao & Welsch 2005). Anand, Glick and Manz (2002) suggested that for technology-based firms to survive in the industry, they have to depend on external sources of knowledge and expertise as well as being capable of accessing external sources. This is because the fast pace of knowledge creation and technology advancement are unevenly distributed among several small firms in a technology-based industry. Further, a firm’s lack of internal resources will require it to gain external sources through collaboration and networking in running business operations. Thus, social capital theory emphasizes that firms should take advantage of their social affiliations in pursuit of their entrepreneurial goals (Kwon & Arenius 2010).

In addition, social capital may also facilitate access to external sources, specifically information (Bosma et al. 2004; DeCarolis et al. 2009) as well as financial assistance (Baron & Markman 2003), which would eventually lead to the identification of entrepreneurial opportunities (Davidsson & Honig 2003; DeCarolis et al. 2009). For example, the broader the composition of an individual’s circle of friends, the more diverse information and exposure that an individual experiences and eventually the greater the chance for the individual to identify and exploit any lucrative entrepreneurial opportunities (Kwon & Arenius 2010). In similar vein, based on social cognitive theory, De Carolis and Saparito (2006) suggested that entrepreneurial behaviour is a result of the interplay of environments that surround an individual such as influences generated from the individual’s circle of friends.

Pirolo and Presutti (2010) suggested the development of different inter-organisational social capital may positively influence a newly-established firm’s performance at different degrees of outcome during its life cycle. Nevertheless, De Carolis et al. (2009) proposed
that individuals with the greatest social capital, coupled with the enhanced propensity to
conduct a business will eventually make the greatest progress in creating a new venture. This view is supported by Batjargal (2003) who mentioned that relational embeddedness of the social capital had a direct positive impact on firm performance. This is because high levels of social capital are built on a favourable reputation, relevant previous experience, and direct personal contact (Liao & Welsch 2005). In addition, Baron and Markman (2003) also mentioned that high social capital provides entrepreneurs with enhanced access to information as well as increased cooperation, trust and understanding from other stakeholders. Thus, these elements will help entrepreneurs in conducting the business smoothly by gaining access to information sources as well as potential customers and venture capitalists. Social capital is claimed as one primary means for a firm to gain a significant advantage over its competitors (Anand et al. 2002).

The relational capital of a firm may be divided into two forms of social capital: bonding social capital and bridging social capital (DeCarolis & Saparito 2006). Growiec and Growiec (2010) suggested that the distinction between bonding and bridging social capital is normally based on the type of individuals with whom one socialises. Bonding social capital is considerably based on strong ties amongst individuals (Davidsson & Honig 2003) and associated with social contacts within one’s family. For example, having parents or close friends who owned a business may provide necessary resources for an individual to venture into a business, specifically in terms of advisory support and financial assistance. Bonding social capital or strong ties are rooted in interpersonal trust and provide the entrepreneur with permanent access to specific resources such as moral support.

On the other hand, social contacts with non-family are regarded as bridging social capital or weak tied social capital. In comparison with bonding social capital, bridging social capital is normally found as a strong indicator of a firm’s rapid pace of development activities (Davidsson & Honig 2003), specifically in running a start-up firm further into a business. Relationships with investors and venture capitalists are regarded as bridging social capital besides being a member of a business network such as Chamber of Commerce. This kind of relationship which is based on weak ties would be an important source for a firm to expand its business, yet requires more time to turn this relationship into specific resources needed in order to build trust and reputation amongst firms.
The development of the conceptual framework for this thesis will be discussed in the next section.

3.2 DEVELOPMENT OF THE INITIAL CONCEPTUAL FRAMEWORK

The business sustainability concepts in this thesis focus on the second dimension of business sustainability that has been proposed by Mann and Gazzarin (2004): sustainability of an enterprise. The development of this framework is based on three main theories, Human Capital Theory (HCT) the Resource-Based View (RBV) of a firm theory, and Social Capital Theory (SCT). HCT emphasizes the human capital of an individual in developing and sustaining job-related performance (Dimov & Shepherd 2005). Based on this theory, many scholars have developed frameworks for explaining the role of entrepreneurial founders in determining the performance of an enterprise (Nafziger & Terrell 1996; Davidsson & Honig 2003; Saffu et al. 2008; Colombo & Grilli 2010).

As illustrated by Figure 3.1, a combination of findings and frameworks from these scholars will lead to a comprehensive study of six factors, or elements under the founder-specific dimension, namely founder’s skills, experience, knowledge, motivation, education and family background. The application of the RBV theory for this thesis will focus on the dimension of firm-specific factors only. As proposed by Fahy (2002) and Galbreath (2005), firm-specific resources focuses on the internal resources (Acquaah & Chi 2007) of a firm which are valuable, rare, imperfectly imitable and non-substitutable (Barney 1991; Peteraf 1993) and will have a positive impact on business performance and sustainability. Further, both authors (Fahy 2002; Galbreath 2005) found that intangible resources of a firm, intangible assets and capabilities, has a greater impact towards firm performance rather than tangible assets. Further, Chareonsuk and Chansa-ngavej (2010) propose that the today’s business landscape requires a firm to place more emphasis on the development of intangible assets such as internal business process and external structure to create the firm’s sustainable competitive advantage.

Thus, based on these arguments, this thesis will look at these two variables only. Based on these two initial frameworks, this thesis will integrate both frameworks, which are based on the HCT and RBV theory of a firm in order to see the relationship between founder-specific factors and firm-specific factors. Nevertheless, this thesis will also consider inclusion of country-specific resources, which may comprise the role of relevant business
stakeholders such as government policy and government infrastructure (Koh & Wong 2004; Koh 2006), which may influence business sustainability.

In this thesis, three main constructs have been developed based on the selected theories as discussed earlier in Section 3.1 and the outcomes of the pilot study. These independent variables are founder-specific factors, firm-specific resources and business stakeholder support and assistance. Each of these variables is explained briefly in the next section.

**Figure 3.1: Proposed Initial Conceptual Framework for this Thesis**

![Proposed Initial Conceptual Framework](image)

Source: Author

### 3.3 FOUNDER-SPECIFIC FACTORS AND BUSINESS SUSTAINABILITY

This section identifies and discusses the elements under the scope of the founder-specific resources that may be important factors for technology firms if they are to survive in a competitive industry. To date, identifying critical success factors that may help small firms sustain their business activities has been conducted by many scholars, yet only a few have focused on technology-based industries (Cooper & Bruno 1977; Kakati 2003; Chow & Liu 2007). Furthermore, there is a paucity of studies on probable factors influencing technology-based small firms in Malaysia, specifically amongst Bumiputera-owned firms. The identification of the types of resources needed by entrepreneurs, particularly in technology-based industries, is based on firm-specific and country-specific resources.
according to RBV theory as proposed by Fahy (2002) and Galbreath (2005). It is these that contribute to a firm’s success, growth and performance.

This thesis has added a third dimension: the types of resources for sustaining a business, which addresses founder-specific factors. The addition of this type of factor is based on human capital theory, which focuses on an individual’s human capital (in this study, it refers to the founder) and its role in the sustainability of business performance. Almus and Nerlinger (1999) conducted a study amongst NTBFs in Germany and suggested that founder-specific characteristics, which are regarded as the human capital of the founders, have a positive effect on the creation of superior performance for a technology-based firm. This view has been supported by Colombo, Delmastro and Grilli (2004) who suggested that specific components of human capital, managerial and entrepreneurial experiences as well as knowledge, wield a positive impact on the initial size of Italian high technology manufacturing and services firms.

Founder-Specific Factors (FSFs) refer to any resource that has its origins in a firm’s individual founder. According to Alvarez and Busenitz (2001), entrepreneurs have identified unique individual-specific resources that will help them identify business opportunities and bring together other resources to create and sustain its business operations. As a newly-established company in a technology-based industry, the role of the founding entrepreneur is vital, especially in developing the solid framework of a firm’s entrepreneurial management (Drucker 1985). As a result, the creation and development of a firm’s competitive advantage in an environment of new technology firms are likely to be based on the founder’s abilities and unique resources that may differentiate the company’s technology from other firms (Cooper & Bruno 1977). These individual-unique resources comprise personal qualities (Yusuf 1995), characteristics of the founder (Walker & Brown 2004; Reijonen & Komppula 2007), and attributes of the entrepreneur that may influence the firm’s sustainability. The specificity of these elements concerning a firm’s founder may create difficulties for other businesses in their efforts to imitate, create or even obtain the same types of resources.

According to Oakey (2003), the ‘brain’ of the founding entrepreneur is 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 new technology firms and have a significant impact on a firm’s success (Reijonen & Komppula 2007). This is due to the creation of the firm’s products and services, which are predominantly based on the founder’s ideas or inspirations. Moreover, the founder’s ideas and leadership are significant resources in the formulation of a firm’s business strategy that eventually affect its business sustainability and positioning in the industry. For example, Apple Inc, considered to be one of the world leaders in consumer electronic and software products, is heavily influenced by its initial founder, the late Steve Jobs, particularly in regard to its performance and business sustainability. In fact, Hof (2009) reported that on 14 January 2009, the stock price of Apple Inc. dropped due to the announcement of Job’s medical leave, thus illustrating the significant role of a firm’s founder.

To summarise, the specific factors of the founder(s) that can be exploited by a technology firm are important sources for a firm’s business sustainability. This section first briefly discusses the implications of individual founders’ attributes in terms of founders’ personalities and entrepreneurial motivations towards the sustainability of business. Next, it focuses on the discussion of specific human capital as proposed by Becker (1964) which comprises founder’s skill, prior work experience, knowledge and education background. Lastly, the individual social capital will be discussed in the third part of this section.

3.3.1 Founder Attributes

a) Entrepreneurial motivations and sustainability of business
Motivation, in general, can be defined as ‘the psychological process that causes the arousal, direction, and the persistence of voluntary actions that are goal directed’ (Mitchell 1982, p. 81). In general, there are certain types of needs that are required by humans, especially when it comes to fulfilling the basic needs of an individual, which normally comprise clothes, food and shelter (Maslow 1943). These needs may affect the way people establish direction in their life and also influences what make people want to work.

From the perspective of entrepreneurship research, numerous published studies have examined motivational aspects of entrepreneurial experiences, specifically regarding the role of entrepreneurial motivations towards a firm’s success and business growth (Dubini 1989; Buttner & Moore 1997; Amit, MacCrimmon, Zietsma & Oesch 2001; Benzing, Chu & Kara 2009), the impact of entrepreneurial motivations towards an individual’s careers
choices (Feldman & Bolino 2000; Douglas & Shepherd 2002; Carter, Gartner, Shaver & Gatewood 2003; Carsrud & Brännback 2011), entrepreneurial motivation factors and drivers (Shane, Locke & Collins 2003; Hessels, van Gelderen & Thurik 2008), and taxonomies of entrepreneur’s business venture motivations (Birley & Westhead 1994; Reynolds et al. 2005). These studies provide an indicator that an examination of entrepreneurial motivations should not be neglected in a study of a firm’s sustainability in business. Additionally, Kuratko et al. (1997) suggest that an understanding of what motivates entrepreneurs to venture into a business and sustain their business are pertinent to comprehend the complete entrepreneurial process. This is because an entrepreneur’s motivation is the outcome of psychological construction that drives the entrepreneurs to pursue their business goals (Estay, Durrieu & Akhter 2013).

Fundamentally, people differ in their willingness and capability to venture into a business as a decision to venture into a business is considerably influenced by human motivations (van Gelderen, Thurik & Bosma 2005). These motivations would be able to predict who pursues entrepreneurial opportunities, marshals entrepreneurial resources, and eventually gives an understanding on how these people undertake the entrepreneurial process (Shane et al. 2003). This variance should be reflected from individual goals (Yusuf 1995; van Gelderen et al. 2005), levels of confidence in their abilities and past entrepreneurial experiences to start a business (Delmar & Wiklund 2008; Townsend et al. 2010). In fact, the decision to become an entrepreneur is reflected from an individual’s developing sense of self as an entrepreneur, and this would explain why some individuals decide to venture into a business and others do not (Farmer, Yao & Kung-Mcintyre 2011).

Schumpeter (1936) proposes that the main reason an individual ventures into business is for economic reasons, particularly to maximise one’s wealth and obtain job security. The generation of profitability and income via business ownership should foster an individual to venture into a business and eventually encourage more small business start-ups (Benzing et al. 2009). Nevertheless, recent trends have shown that the motives of venturing into a business are not only due to economic reasons (Hessels et al. 2008; Carsrud & Brännback 2011). For instance, in the area of social entrepreneurship, the welfare and social gains may be considered as the main reasons why an individual ventures into a business.
Looking more closely at different motives of business ventures, one of the common distinctions mentioned by scholars is between pull and push motivations (Buttner & Moore 1997; 2005; Shinnar & Young 2008). Practically, the reaction to the entrepreneurial environment for each entrepreneur occurs in an inconsistent way whereby some entrepreneurs would react to a current perceived business opportunity, whilst others might start a business due to economic necessities (Robichaud, LeBrasseur & Nagarajan 2010). In its simplest perspective, motives which attract entrepreneurs to venture into business are regarded as pull motivations, such as being their own boss and the need for achievement, whilst motives which force entrepreneurs to venture into business are referred to as push motivations due to economic necessity or lack of job alternatives (van Gelderen et al. 2005). These push and pull motivational aspects may also differentiate an entrepreneur to be either an opportunistic entrepreneur or a necessity entrepreneur (Reynolds et al. 2005; Jayawarna, Rouse & Kitching 2013).

Entrepreneurs who are driven by pull motives are regarded as opportunistic entrepreneurs (Carsrud & Brännback 2011). The opportunistic strategy employed by these entrepreneurs are characterised by a commendable degree of environmental opportunity scanning, specifically in order to recognise and vigorously exploit those opportunities (Hiemstra, Kooy & Frese 2006). Thus, in executing this strategy, opportunistic entrepreneurs should act as decision makers who identify and capitalise on opportunities and exhibit confidence in their ability to be aware and dealt with the surrounding environment which may provide a potential lucrative business opportunities for them (Olson 1986; Jayawarna et al. 2013). The identification of business opportunities and potential success would considerably drive an entrepreneur to engage in the entrepreneurial process, while some entrepreneurs venture into business in order to change their life, or want to help their families. In this respect, due to the necessity in life courses such as the family influence and lack of employment opportunities has driven the individual to venture into a business (Marques, Ferreira, Ferreira & Lages 2013). These necessity entrepreneurs are normally driven by push factors which forced them into self-employment. For instance, having experienced frustrating situations in prior jobs have led individuals to venture into a business due to their desire for independence (Mallon & Cohen 2001).

Thus, the drivers for entrepreneurial motivation in operating a business may affect success. For instance, if entrepreneurs put all their energy into achieving their goal, their business
will ultimately be fruitful and can be sustained across any kind of situation or time. According to Cooper, Woo and Dunkelberg (1988), a remarkable degree of optimism can be seen from an entrepreneur who has already put their full commitment into the venture of a new business.

Moreover, the entrepreneur who has high motivation will not easily give up their business and cease trading. This is because venturing into a new technology-based business requires the firm to face an uncertain environment where the outcome is ambiguous as the entrepreneur does not know the acceptance of the product by potential customers. This motivation also indirectly stimulates the entrepreneur to learn every single aspect of business that they see as crucial for success, such as marketing and financial management. For example, the entrepreneur will attend courses on finance or marketing in order to enhance their skill in these areas. In such a case, the direction of the firm is driven by the entrepreneur’s inspiration (Walker & Brown 2004; Estay et al. 2013). Thus, this thesis posits that the Bumiputera entrepreneurs should possess a high level of entrepreneurial motivation to sustain the business.

Indeed, the motivation of an individual to behave entrepreneurially may also be influenced by personal characteristics (Naffziger, Hornsby & Kuratko 1994), which leads to the next discussion on the impact of entrepreneurial personalities towards business sustainability.

b) Entrepreneurial personalities and sustainability of business

The examination of the relationship between personality traits and entrepreneurial behaviours as a topic of inquiry has been commonly addressed by scholars (Brandstätter 2011; Volery, Müller, Oser, Naepflin & del Rey 2013). Those studies generated inconsistent outcomes on a firm’s success, in which the entrepreneurial personalities have different impacts on different business stages (Zhao, Seibert & Lumpkin 2010) such as entrepreneurial intention and performance of the firm. Calvo and García (2010) have suggested that individual founders’ personalities could be viewed as factors that differentiate between successful entrepreneurs and less successful entrepreneurs or other people. Moreover, the personalities of entrepreneurs have also been employed as an indicator for investors to predict the potential of a business (Khan 1986). This can be interpreted in terms of the implications of founder’s characteristics towards human capital
development such as self-confidence which may subsequently affect the firm’s performance (Belso-Martinez, Molina-Morales & Mas-Verdu 2013).

The probability that individual entrepreneurs will sustain their businesses is likely to be based on the existence of an infinite variety of combinations of the entrepreneur’s individual attributes. Indeed, no standard list of essential personalities emerged in the entrepreneurship research (Estay et al. 2013) that could predict the performance of a firm. Nevertheless, having common entrepreneurial personalities as identified by scholars (McClelland 1961; Brandstätter 2011; Mills & Pawson 2012; Marques et al. 2013) such as the need for achievement, risk propensity, tolerance of ambiguity, locus of control and innovation will guide the entrepreneurs to be able to sustain their business strategically.

In line with Ray (1993), this thesis posits that there is no standard set of behaviours or personality attributes of individual entrepreneurs. This is because not all attributes are equally important in every culture, every industry or every socio-economic setting. In this respect, Phan and Butler (2003) suggest that the strategic directions of a firm could be sustained over time and continuously implemented depending on the belief and attitudes of the founding entrepreneurs. Thus, the entrepreneur’s personality will shape company culture, values and social behaviour and this may also directly impact a firm’s performance and business sustainability.

#### 3.3.2 Founder’s Human Capital

The second aspect of founder-specific factors reviewed in this thesis is the aspect of founder’s human capital. The study of human capital issues can be traced back to seminal studies (Becker 1962, 1964) which discussed two main aspects of human capital: (a) the investment of human capital and (b) outcomes of the human capital investment. Indeed, numerous studies have posited that the founder’s human capital is the key element in entrepreneurship activities (Volery et al. 2013). Here, this section will firstly discuss two aspects of the investment of human capital amongst the founders namely founder’s educational background and prior work experience. Then, the next section reviews the two main outcomes of human capital investment: founder’s related knowledge and skills that are relevant towards a sustainable business among the Bumiputera NTBSFs.
a) Formal educational background and sustainability of business

An analysis by Dickson, Solomon and Weaver (1999), based on in-depth literature surveys, proposed that there is strong evidence supporting the relationship between levels of general education and entrepreneurial success. Generally, the founding entrepreneurs’ level of education has a significant positive impact on entrepreneurial behaviour (Walker & Brown 2004; Zhang, Duysters & Cloodt 2013), particularly in stimulating entrepreneurial intention and development of human capital to support the business venture (Volery et al. 2013). The level of education amongst founders in technology-based industries can be an important resource in the creation of a competitive advantage as this resource is owned by most of the firms in the industry (West & Noel 2009).

The level of education of an individual will portray that individual’s knowledge, skills and thoughts on a specific subject or field of endeavour. For example, those students who study accounting are expected to become competent accountants or at least have sound knowledge of financial management compared with students studying art courses. In fact, educational courses and industrial-related training conducted in higher education institutions might provide the university graduates with a realistic evolution of their skills and abilities to venture into a business (Zhao, Seibert & Hills 2005). From the perspective of entrepreneurial ventures, Backes-Gellner and Werner (2007) suggest that individuals possessing a university degree are likely to possess the relevant skills required to be innovative successful entrepreneurs.

However, there were some cases where education does not necessarily have a direct impact on business success (Watson et al. 1998; Coy, Shipley, Omer & Khan 2007). One explanation for this finding could be that other factors such as a founder’s passion in inventing innovative products, a propensity to take risks, personal satisfaction and being challenged by their own capabilities may influence an entrepreneur’s success in the technology industry. For example, Bill Gates quit his studies at Harvard University in order to fulfil his passion for developing a new invention in the computer industry and thus created Microsoft. Further, entrepreneurship is a learned phenomenon, whereby the influence of other factors such as social networks and prior experience may also reflect on the enhancement of human capital (Volery et al. 2013).
Nevertheless, founder’s education will certainly guide the individual entrepreneur in operating their business, and having a higher degree of education will lead to the creation of a business by entrepreneurs (Dickson et al. 2008). 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. To illustrate this, a study by Robinson and Sexton (1994) using U.S. census data found that entrepreneurs’ general education exerts a strong positive influence for entrepreneurs to venture into a business and succeed. Moreover, it is claimed that formal education will increase the probability of an individual taking up a business venture or opportunity and can employed as a tool to increase the level of entrepreneurship over the long run (Rideout & Gray 2013).

Besides, Jo and Lee (1996) in South Korea discovered that an entrepreneur’s level of education was positively related to business performance. Likewise, Burke, Fitzroy and Nolan (2008) found that low levels of education by the entrepreneurs negatively influenced entrepreneurial persistence in developing a business. Therefore, the level of education of founding entrepreneurs can be proposed as one of the main factors contributing to business sustainability.

The next section will discuss the contributing role of prior work experience, which is the second part of the founder’s human capital aspect.

**b) Prior Work Experience and Sustainability of Business**

Many studies have been published describing the implications of founding entrepreneur’s experiences of business success (Stuart & Abetti 1990; Reuber & Fischer 1994; Ucbasaran, Westhead, Wright & Flores 2010). Various earlier works did agree that prior experience, specifically in terms of entrepreneurial experience and management experience were considered to have positive implications for a firm’s performance (Stuart & Abetti 1990; Luk 1996; Zhang, Yang, Tang, Au & Xue 2013).

With reference to the impact of founder’s entrepreneurial experiences on a firm’s performance, studies (Cooper et al. 1988; Politis 2005) suggest that those entrepreneurs who had relevant experience and had owned previous businesses similar to those they had left had a high tendency to succeed in managing the business. One of the seminal studies on the importance of prior business experience for entrepreneurs was undertaken by
Lamont (1972), whereby this study found that experienced entrepreneurs had more initial funding sources and a balance of crucial business skills needed to operate a business than nascent entrepreneurs. The productivity of a founder’s human capital may be associated with the generation of better firm performance (Colombo et al. 2004). This view has been supported by Politis (2005) who suggests that prior start-up experience would potentially influence the strategic choice made by entrepreneurs, and this eventually influences firm performance. This is because entrepreneurs who possess business experience, specifically prior start-up experience, may acquire more diverse skills and knowledge needed in operating a business (Baron & Ensley 2006; Mueller 2006). Further, prior experience may also increase their ability to obtain external finance needed in sustaining the business due to the level of confident of investors based on the entrepreneur’s prior experience (Robson, Akuetteh, Stone, Westhead & Wright 2012).

From another perspective, experienced entrepreneurs might also know how to operate the business that they ventured into, especially in terms of business management. Entrepreneurs who possess prior managerial experience can recognise the importance of marketing and business management skills, and consequently, are more capable to raise more resources from other key players in the industry (e.g. external experts) and social networks to assist them in sustaining the business (Duchesneau & Gartner 1990; Kotha & George 2012). Besides, prior studies (Politis 2005; Zhang, Yang, et al. 2013) found that experienced entrepreneurs seemed to be more successful in starting up and managing their subsequent business ventures. This is because prior knowledge and information derived from the entrepreneurs’ work experience as well as social contact with customers and suppliers would enable the entrepreneurs to recognise any entrepreneurial opportunities (Shane 2000; Davidsson & Honig 2003), to gain necessary business knowledge and to overcome any business problem (Politis 2008). On the contrary, inadequate managerial experience and lack of business education may hinder the performance of a firm (Jones & Tullous 2002).

More importantly, the possession of varied work experience would also enhance the entrepreneurs’ level of entrepreneurial skills in sustaining the business (Stuetzer, Obschonka & Schmitt-Rodermund 2013). This could be translated as human capital investment experienced by the entrepreneurs that can lead to the enhancement of skills and knowledge in sustaining the business (Becker 1962).
Discussions on the first outcome of the human capital investment, that is founder’s skills, will be briefly reviewed in the next section.

c) Founder’s skills and sustainability of business

Current literature shows a large volume of published studies describing the role of founding entrepreneur’s skills in the creation and development of a new venture (Colombo & Grilli 2010; Unger, Rauch, Frese & Rosenbusch 2011; Stuetzer, Obschonka & Schmitt-Rodermund 2013). Generally, the capabilities of the entrepreneurs in managing their business operations are influenced by their skill level. The formation of a venture by individuals with selected skills would constitute a fundamental component for the growth and survival of a venture (Arthurs, Busenitz, Hoskisson & Johnson 2009; Colombo & Grilli 2010). This is because relevant skills possessed by an entrepreneur would leverage their distinctive capabilities (Colombo & Grilli 2010), where the different phases of business development require the entrepreneurs to possesses certain skills that support their changing roles in in managing the business (Mitchelmore & Rowley 2010; Chell 2013).

From the perspective of entrepreneurial technology firms, technology-based entrepreneurs require several relevant skills that are considered essential for the process of product or technology development (Cooper & Bruno 1977; Almus & Nerlinger 1999). For instance, Shrader and Siegel (2007) point out that possessing technical skills is critical to a firm’s success regardless of the strategies used by technology-based firms. Moreover, due to the technical nature of technology-based firms, these firms are normally founded or operated by engineers or scientists who possess specific scientific and technical human capital, such as technical skills and knowledge (Bozeman, Dietz & Gaughan 2001). Having technical human capital would help the founders to effectively execute any technical and scientific projects because they are experts in their field. Furthermore they can use specialised applications and tools to create new products or technologies or enhance what they already have (Chandler & Jansen 1992).

Entrepreneurs with a technology background such as scientists or engineers are claimed to use a logical inclusive thinking process that almost has to be unlearned in the business real world and thus, they need to be equipped and complemented with other relevant entrepreneurial skills (Park 2005), such as managerial skills, communication skills and
decision-making skills. These entrepreneurs normally have high technical expertise, which is significant for the development and success of a technology-based venture. One question that needs to be asked, however, is whether technology entrepreneurs have the necessary management skills needed to manage an entrepreneurial business successfully (Jones-Evans 1997). Prior studies (Mønsted 1991; Ganotakis 2012) showed that typical technology entrepreneur’s firms have sufficient technical skills related to the product R&D and manufacturing, yet they often lack both skills and interest in dealing with economic management issues.

As a result, many scholars contend that the required skills of managing a technology-based firm should comprise a mixture of technological expertise and business skills and capabilities (Kakati 2003; Oakey 2003; Gimmon & Levie 2010; Ganotakis 2012). Stuetzer et al. (2013) suggest that business founders should have a balanced of skills exhibiting a high level of both technical and managerial skills to generate a positive outcome for a firm’s progress and subsequent growth. In this respect, Kakati (2003) provided evidence that new product development alone does not ultimately guarantee financial success because diversified skills and capabilities are the key ingredients for success required by technology-based firms. The complex nature of technology-based ventures requires a founding entrepreneur to possess a level of technical, business or managerial skills in order to confront both business-related and technology-related issues, specifically in the early stages of a venture (Gimmon & Levie 2010).

Fundamentally, the managerial skills of an entrepreneur refer to skills and abilities needed to manage and develop a business venture (Sambasivan, Abdul & Yusop 2009). Relevant managerial skills may consist of the ability to recognise market opportunities and means to market, to manage cash flows and also to develop informal organisational structure (Shepherd, Douglas & Shanley 2000). This is because the lack of general management training and experience amongst the founders, represented by organisational management deficiencies such as poor management skills and poor marketing strategies, would obstruct the development of innovation activities within technology-based small firms (Knight 1989; Freel 2005).

Entrepreneurs are considerably embedded in a social context because many entrepreneurial tasks (e.g. business negotiations and strategic alliances) involve elements of socialisation
(Markman & Baron 2003; Baron & Tang 2009). More specifically, the interaction between entrepreneurs and other stakeholders such as customers, suppliers and venture capitalists require social skills-specific competencies. These skills may also play a significant role in a firm’s success (Baron & Markman 2000). For example, in a business context, Baron and Markman (2003) mentioned that people possessing excellent social skills would experience more advantageous positions and results than those lacking in social skills. Baron and Tang (2009, p. 283) suggested these social skills and competencies may incorporate several aspects:

…include social perception (the ability to perceive other accurately), expressiveness (the ability to express feeling and reaction vividly), impression management (skills in making favourable first impression on others), and social adaptability (proficiency in adapting one’s action to current social contexts).

In practice, Hoehn-Weiss, Brush and Baron (2004) state that the initial process of starting a new venture usually involves social interactions and engagements between entrepreneurs and investors, potential employees and other stakeholders. Therefore, having good social skills and competencies would ultimately improve entrepreneurs’ chances of acquiring financial capital and other non-financial resources in the early stages of a business start-up or even in the growing stages (Hoehn-Weiss et al. 2004). For example, Baron and Markman’s cross-industry analysis (2000) in two industries (cosmetics and high-tech) showed that the higher the entrepreneurs’ social skills, the greater the outcomes of financial performance generated by the entrepreneurs.

Luk (1996) discovered that good decision-making skills were the most prominent aspect of business success. This is because venturing into a risky and uncertain technology-based business requires entrepreneurs to make a quick decision by evaluating their capabilities to create a product or service that can generate a sustainable profit. Normally, the best business decisions that entrepreneurs make are based on their skills in managing the business from management and technical perspectives as well as other economic factors such as wealth creation and a nation’s unemployment issues (Robbins, Bergman, Stagg & Coulter 2009). Baptista et al. (2013) suggest that entrepreneurial skills would generate a positive impact towards both job creation and quality of jobs created. Indeed, a more skilled entrepreneur will more likely hire skilled employees to assist them to operate the
business. Therefore, having an adequate level of entrepreneurial skill may help entrepreneurs sustain and maintain their business (Coy et al. 2007).

The second element of the outcomes of human capital investment is founder’s knowledge in sustaining the business, which will be discussed in the next section.

d) Knowledge and sustainability of business

An entrepreneur’s knowledge can be described as a pool of entrepreneurial information which includes an understanding of the ideal approach to venture into business, to manage business operations and also to manage business growth, especially in relation to knowledge of new product development and invention of new technologies (West & Noel 2009). Generally, knowledge is defined as meaningful information in a specific area possessed by an individual (Sun 2004) via learning and experience (West & Noel 2009). Polanyi and Prosch (1975) suggest that every act of acquiring and applying personal knowledge will eventually lead to the formation of an appropriate standard of excellence. Thus, having a specific area of knowledge might help an individual to act in such a way that leads to an outstanding achievement. A similar situation may also be applied to an entrepreneur as they usually have idiosyncratic entrepreneurial knowledge of managing a business, which may eventually help them succeed. Moreover, according to Nonaka (1994), some knowledge is tacit in nature and commonly referred to as tacit knowledge (Polanyi 1966), which indicates that this knowledge cannot easily be transferred to others. 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 & Noel 2009) and differentiation strategies (Wilkund & Shepherd 2003), which distinguishes their business from that of their competitors (Beijerse 2000).

Many previous studies have shown that entrepreneurial knowledge has a positive effect on small business firms (Cooper et al. 1988; Omerzel & Antončič 2008; Sun & Tse 2009). First, the founder’s entrepreneurial knowledge will guide the developmental resources of venture operations in recognising business opportunity and seeking business resources (West & Noel 2009; Arentz, Sautet & Storr 2013). This is especially crucial amongst new firms as they have limited resources which might hinder the business performance. Hence, having knowledge to seek resources and exploit opportunity will assist the entrepreneurs in sustaining the business. Second, Omerzel and Antončič (2008) claimed that entrepreneurs
with more knowledge will be able to adapt to any change in market structure due to the global environment. This is because these entrepreneurs can use their entrepreneurship knowledge to navigate the complex business environment (Beijerse 2000) and develop business capabilities. These entrepreneurs reduce their level of uncertainty in managing their business due to the fact that they possess knowledge about how to deal with a competitive business environment (Omerzel & Antončič 2008).

Third, knowledge possessed by entrepreneurs will help them to develop new products that lead to a better performance (Tang & Murphy 2012). Moreover, venturing into technology-based industries requires the entrepreneur to have a range of knowledge that is more than just entrepreneurial knowledge, such as technical knowledge in conducting R&D activities. In this respect, knowledgeable entrepreneurs will achieve multifaceted innovation and this helps them generate more income through a correct assessment of available business opportunities and product development (Sonobe et al. 2011). This study proposes that knowledge and intuition, which are particularly relevant to entrepreneurship, are crucial for an entrepreneur to sustain a technology-based business.

Next, the discussion on the founder’s social capital will be elaborated to uncover the impact of social networks on the sustainability of Bumiputera NTBSF.

3.3.3 Founder’s Social Capital

The ability of founding entrepreneurs to resource their business can be derived from their social connections (Baron & Markman 2003; Packalen 2007), especially towards the creation of a newly-established firm’s business network. In this context, Larson and Starr (1993) suggest that the emerging firms may leverage ties with entrepreneurs’ family members and friends to access key resources required for a firm’s viability. This is in line with Granovetter’s (1973) influential work on the entrepreneur’s network that can be classified as strong ties (e.g family members or friends) or weak ties (e.g. colleagues and distant relatives) which have an implication towards a firm’s performance. Next, a discussion on the influence of family will be elaborated.

a) Influence of family business background and family support

Kirkwood (2012) suggests that entrepreneurs’ families influence their decision to venture into business. He proposed three key family members influenced the entrepreneurial
behaviours of the entrepreneurs: parents, spouses and children. Previous studies have shown that individuals whose parents were self-employed or owned a family business had a higher propensity to venture into a business than those without such a background (Scherer, Adams, Carley & Wiebe 1989; Burke et al. 2008; Mungai & Velamuri 2011). Menaghan and Toby’s (1995) work demonstrates that parent’s work experiences have significant effects on children, especially in terms of behaviour, values and future skills. According to Bandura’s (1977) seminal study on social learning theory, an individual’s learning process can occur through observation of behaviours in others who are referred as role models (Bosma et al. 2012). Therefore, in the entrepreneurship context, Chlostia, Patzelt, Klein and Dormann (2010) suggest that individuals who were growing up in an entrepreneurial family will have the opportunity to learn from their self-employed parents as role models who will give a realistic picture of a self-employment job. Indeed, the entrepreneurial parents will use their family businesses as a platform to nurture in their children the skills, knowledge and confidence needed to start their own businesses (Carr & Sequeira 2007).

Further, the individual’s knowledge and early business exposure in the entrepreneurship field will also be enhanced through self-observation and discussions of business activities conducted by their parents or other social affiliates such as relatives and friends (Reijonen & Komppula 2007). Having self-employed parents will enable the entrepreneurs to possess entrepreneurial work experience with their parents’ firms and in this regard this experience will build up their entrepreneurial intentions as well as confidence to start a business. Indeed, a study conducted by Fairlie and Robb (2007) found that the entrepreneurs’ prior work experience in a family business is strongly correlated with the success of their own small business. In addition, the support of family members can influence entrepreneurial intentions as well as the acquisition and management of resources needed for venture launch (Chang, Memili, Chrisman, Kellermanns & Chua 2009).

Another pertinent aspect with regard to the family support in operating a business is the spousal support which will contribute to the issue of work-family balance while operating the business. The current scenario of economic pressures suggests dual-earner families are needed to meet rises in the cost of living (Ford, Heinen & Langkamer 2007). Consequently, this scenario requires the entrepreneurs to create work-family synergies and to gain family support in order to nurture a satisfying work-life balance (Eddleston &
Powell 2012). Walker, Wang and Redmond (2008) stated that the need to balance between business commitment and family welfare faced both male and female entrepreneurs, yet this issue was more prominent amongst female entrepreneurs. The cultural aspects of society in regard to power relations and social interactions normally expect female entrepreneurs to bear the main responsibilities in managing the welfare of the family, especially to be a good mother (Forson 2013). Prior studies (Gudmunson, Danes, Werbel & Loy 2009; Eddleston & Powell 2012) discovered that having good spousal support, both emotionally and financially, is likely to generate positive implication towards business performance. In this respect, Gudmunson et al. (2009) suggest that provision of spousal support will enhance the communication between spouses and eventually reduce any stress that emerges.

Anderson, Jack and Dodd (2005) recommend that support from family members to entrepreneurs is important as this provides a wide range of assistance to the entrepreneur such as financial support and business advisory. Assistance provided by family is a critical factor to support the start-up phase of entrepreneurial firms, especially the family’s willingness to financially support the venture (Dyer & Handler 1994). The entrepreneurs may lack access to financial capital to operate their newly-established firms in the start-up phase with no financial track record to apply to any financial institution (Smith & Beasley 2011). Therefore, the entrepreneurs need to generate their required sources of initial capital from their personal savings and loans from family members (Chua, Chrisman, Kellermanns & Wu 2011). Besides the financial assistance offered by family members, other types of support can also be seen in moral and advisory support that is characterised by sharing ideas of the business operations, sources of business networks as well as technological advice (Chang et al. 2009).

Similarly, parental business failure may lead to a negative influence on individuals’ intensity to venture into a business (Mungai & Velamuri 2011). On top of this, lack of perceived support from family members may also discourage individuals to venture into business (Carr & Sequeira 2007). In addition, the discouragement by family members may lead to a relational conflict, which not only impedes the intention of the individual to venture into business, but also may affect the sustainability of the business operations (Anderson et al. 2005).
b) Influence of friend support

Even though the role of friends or peers towards the formation and development of a business venture has received less attention in the entrepreneurship literature, this issue has recently been treated as an emerging concept in explaining entrepreneurial behaviours (Falck, Heblich & Luedemann 2012). Individuals may be influenced by their entrepreneurial peers to venture into a business via their interactions and observations in which through these processes, the individuals may learn entrepreneurship knowledge and be more confident to form their own business (Giannetti & Simonov 2009). In a study of the concept of social identity in entrepreneurship behaviours, Falck et al. (2012) found the peer group influences to be stronger at younger ages, and thus, suggest that the cultivation of entrepreneurial programs should be nurtured at younger ages.

Nevertheless, as entrepreneurial learning is a long term process and the entrepreneur’s level of knowledge is continuous (Chell 2013), prior studies showed that the influence of entrepreneurial peers may occur at any age. For instance, Nanda and Sørensen (2010) found that the interaction between an individual and co-workers who have been entrepreneurs before may increase the probability of the individual to perceive entrepreneurial opportunities and eventually increase his or her intention to venture into a business. In addition, peer support may also be obtained between entrepreneurs in the same nature of business. Kuhn and Galloway (2013) propose that peer networks amongst entrepreneurs would provide a great support in operating the business, particularly in advice and exchange value, which can enhance their business operations.

3.4 FIRM-SPECIFIC RESOURCES

From a seminal study conducted by Dierickx and Cool (1989), firm-specific resources (FSRs) have been theoretically linked to sustained competitive advantage of a firm. In fact, the RBV theory emphasizes the role of FSRs in helping a firm to achieve sustainable competitive advantage (Wang, He & Mahoney 2009). The discussion of the implications of FSRs, specifically focusing on a firm’s intangible resources will be discussed in the following sections.
3.4.1 Firm’s Social Capital

a) Firm’s Business Networks

Generally, relational assets of a firm refer to the creation of intangible value of relationships which are normally bound amongst individuals either in a firm or between other firms (McElroy 2002; O’Connor, Roos & Vickers-Willis 2007a; Theoharakis, Sajtos & Hooley 2009). Prior studies (Birley 1985; Street & Ann-Frances 2007) argued that firm’s business networks may be also be regarded as the social capital of a firm, normally associated with both internal and external relationships to sustain the business. According to social capital theory, these relationships are normally facilitated through a firm’s norms, values, trust and reciprocity (McElroy 2002).

The value of these relationships may be measured by looking at the value of an individual’s relationship with other parties in seeking assistance for jobs to be accomplished in a company (McElroy 2002). For example, a newly-established venture may consider building a good business network with other firms at the beginning of business operations in order to compensate for the limited amount of other capital possessed by the firm such as financial capital and human capital (Brüderl & Preisendörfer 1998; Ferri, Deakins & Whittam 2009). Moreover, this view is also supported by Aarstad, Greve and Haugland (2010) who mentioned that entrepreneurs lacking social capital can overcome this problem through collaboration with other entrepreneurs who are rich in social capital. Thus, the collaborations with other partners will help the new firms to find resources and leverage their business networks to ensure the sustainability of the business operations (Lockett, Jack & Larty 2013).

Further, Aarstad et al. (2010) argued that there is a link between these relational assets and a firm’s performance level, specifically bonding social capital and bridging social capital, as proposed by Davidsson and Honig (2003). Bonding social capital is based on strong ties amongst individuals, especially amongst family members and close friends. This type of social capital is normally viewed in terms of encouragement and support by family members or close friends either financially or morally in setting up and sustaining a business (Debrulle, Maes & Sels 2010; Kuhn & Galloway 2013). On the other hand, a relationship that is based on weak ties between individuals is considered as bridging social capital. This bridging social capital may be viewed as the involvement of an entrepreneur.
in a business association. This involvement will eventually benefit the entrepreneur through advisory assistance and identification of potential buyers in the market (Debrulle et al. 2010).

b) Firm’s Reputation Assets

A firm’s reputation defines a firm’s distinctiveness from the perspective of its stakeholders, especially in terms of its products and services, effective resources management and potential for future success (Goldberg, Cohen & Fiegenbaum 2003). Roberts and Dowling (2002) suggested that good corporate reputations are critical for a firm to sustain its superior profit outcomes over time. By having a good corporate reputation in an industry, the firm is not only creating its value but the intangible characters of corporate reputations are difficult for competing firms to imitate (De Castro, López & Sáez 2006). This is evident by a seminal study conducted by Hall (1992) that showed that the firm’s reputation as well as the reputation of the product were considered as intangible resources that significantly affect the firm’s capability to generate sustainable competitive advantage (López 2006). Moreover, corporate reputation may also provide room for a new firm to obtain and develop legitimisation within its market, specifically amongst its customers and suppliers (Fichman & Levinthal 1991; Chollet, Géraudel & Mothe 2013).

In general, the creation of a firm’s reputation is normally considered to be a firm’s specific resource due to the unique history of business operations and evolution. This is because the firm’s reputation represents the accumulation of actions and outcomes of a firm’s present and past operations (De Castro et al. 2006). Thus, efforts to develop a good corporate reputation normally depict a firm’s capability to create value for different stakeholders such as customers, suppliers and government bodies. In this respect, the development of a good business reputation will take some time for firms to convince their business stakeholders, especially amongst new firms with limited resources and track records (Chollet et al. 2013; Kwon & Rupp 2013).

On the other hand, the reputation of a firm’s range of products in terms of quality and prices may also lead to the creation of competitive advantage. DeCarolis and Deeds (1999) contend that one of the strongest predictors of firm performance in technology-based industries is the range of products produced by a firm in the market. Additionally, a study
conducted by Roberts and Dowling (2002) found that there is a positive relationship between a firm’s reputation and financial performance. Moreover, prior studies Goldberg et al. (Goldberg et al. 2003; Morrison & Wilhelm 2004) also claimed that a positive corporate reputation can be an important aspect of a firm’s successful development. Indeed, having a good business reputation may also attract and retain skilled human capital to be part of the firm, an important asset in sustaining the business (Campbell, Ganco, Franco & Agarwal 2012).

Next is a discussion of firm’s capabilities and intangible assets.

3.4.2 Firm’s Capabilities and Intangible Assets

Based on the RBV theory, intangible resources are regarded as key factors that determine and drive the strategic performance of an organisation, specifically in the creation and sustainability of a firm’s competitive advantage (Barney 1991; López 2006; Zigan et al. 2008). Diefenbach (2006, p. 409) defines an intangible resource as: ‘everything of immaterial existence, which is used or potentially usable for whatever purposes, which is renewable after use, which not only decreases, but can remain or increase in quantity or/and quality while being used’.

According to Haanes and Fjeldstad (2000), a firm’s intangible resources are more complicated to transfer to and be imitated by other firms as the intangible resource’s value is difficult to define and gauge. Therefore, intangible resources are seen as the main elements for creating a firm’s competitive advantage as well as performance influencing factors (Zigan et al. 2008). Moreover, several researchers have proposed that intangible assets and capabilities that are valuable, rare, difficult to imitate and imperfectly substitutable may be more significant in resolving the creation of competitive advantage of the organisation than a firm’s tangible and intangible assets (Barney 1991; Fahy 2000, 2002; Galbreath 2005). Further, Villalonga (2004) contends that if a firm has a greater number of intangible resources than other competitors in the same industry, that particular firm may be able to generate a greater ability to sustain business and competitive advantage. This view has been supported by Chang et al. (2008) who mention that intangible resources can be better indicators than intangible resources to explain a firm’s ability to survive any business turbulence or environmental jolts. Therefore, this study will
focus on explaining the implications of a firm’s intangible resources on business sustainability.

The availability of intangible resources is a key factor in the decision by firms to increase their internationalisation and to lead a firm to consolidate its competitive advantage in a market and business diversification (Delgado-Gómez, Ramírez-Alesón & Espitia-Escuer 2004). For this study, the discussion will divide FSRs into two aspects: intangible assets and capabilities. The determination of capabilities and intangible assets for this section are derived from a work from Fahy (2002). Three intangible assets that comprise R&D and technology capabilities, organisational innovation culture and intellectual property assets will be discussed next.

**a) R&D and Technological Capabilities and Business Sustainability**

Fundamentally, capabilities are the operational ability to deliver new products and services efficiently, repeatedly and in sufficient volume (Smith 2008). Dynamic capabilities serve as a link for transforming internal and external resources into firm competitiveness and then into financial performance (Wu & Wang 2007). As this study focuses on the sustainability of businesses amongst technology-based firms amongst Bumiputera in Malaysia, R&D and technology capabilities will be discussed in the following sections.

The R&D capability of a firm is related to the technological development of a firm’s knowledge base, specifically the consolidation of a firm’s existing technology intelligence into creation of a new technology (Piotrowska 2008; Yu, Hao, Ahlstrom, Si & Liang 2013). The intensity of internal R&D has been shown to be a strong predictor of a firm’s ability to develop new products and technology (Vertinsky 2003), though the R&D collaborations via strategic alliances may also help the technology firm to enhance its R&D intensity and performance (Sandhya & Visalakshi 2000). The implementation of R&D will enhance the possession of technology by the firms, which can be translated as the sum of a firm's knowledge and skills, determines the ability of new ventures to offer products (services), gain market acceptance, survive, and achieve financial success (Zahra & Bogner 2000). Thus, R&D and technological capability are considered important resources for a new technology-based firm to conduct its business, specifically to formulate growth strategies that can lead to the creation of competitive advantage (Chen, Zou & Wang 2009).
Technological resources are considered one of the most important resources that influence the founding of technology-based ventures (Deeds 2001; Kelley & Nakosteen 2005), and these resources may include machinery, tools, equipment, knowledge and skills that a firm has or controls. Besides, technology resources can also be measured as input-based (such as R&D expenditure, composition of a firm’s technology-based human capital: scientists and engineers, and scientific citations and publications) and output-based (such as patent citation-based measures, new product introductions, and a rating of technological innovativeness of a firm’s first product by technological experts). They are also embedded in a firm’s patents, which captures the knowledge and skills firms have attained from deploying their technological resources (Zahra & Kirchhoff 2001). Based on the RBV’s proposition, Zahra and Kirchhoff (2001) discussed the importance of having and deploying unique and inimitable technological resources as a way of achieving growth. Efficient use of technological resources allows firms to attain profitability while achieving growth. The greater the degree of novelty of technology applied by a firm, the greater the friction hindering its growth and the better the firm’s performance (Autio & Parhankangas 1998).

Next, the review of organisational innovation culture of the firm will be discussed.

b) Organisational innovation culture

The term innovation originates from the Latin word ‘innovare’, meaning ‘to make something new’ (Sarri, Bakouros & Petridou 2010). In general, there is no consensus of a widely-accepted definition of innovation despite the massive amount of studies that have been conducted on the topic of innovation (Wan, Ong & Lee 2005). This leads to the difficulty in defining the term innovation precisely (De Propris 2002). Nonetheless, Massa and Testa (2008) suggested that a widely shared definition originated from seminal work by Schumpeter (1942), who defined innovation as the commercialisation of invention. Using this definition, many current scholars have developed the definition of innovation based on different perspectives. Zhao (2005) for example, defines innovation as a firm’s new products, services and markets as well as the development of new skills and human capital in an organisation. From another study, Li and Atuahene-Gima (2001) defined innovation as a technology, strategy or management practice that a firm uses for the improvement of a firm’s process or product.
Marvel and Lumpkin (2007) claimed that the most common way of defining innovation is normally using an incremental and radical framework. Radical innovation involves the creation of knowledge for making fundamental changes, involving a technological revolution that totally changes the nature of business operations (Un 2010). Jankunc (2007) argued that managing radical innovation is a difficult managerial challenge, yet pertinent to a firm’s success. A high level of complexity and uncertainty of this innovation requires a firm to be more flexible and adaptable to the new nature of doing business. Conversely, the creation of knowledge or exploitation of existing knowledge for minor improvements in a firm’s offerings is considered as incremental innovation. The major differences between both types of innovation lies in the novelty level of technological content and organisational knowledge (Un 2010).

Scholars, including Lagacé and Bourgault (2003) and Bock, Opsahl, George and Gann (2012) contend that technology-based SMEs must continually enhance their organisational products or processes through innovative activities in order to generate long-term sustainability. In this respect, the firms should implement appropriate strategies to cultivate organisational innovation in their firms such as creating an effective communication channels (Wan et al. 2005; Simonen & McCann 2008), organising training (Thornhill 2006; Sarri et al. 2010) and enhancing firm’s innovative resources (González-Pernía, Peña-Legazkue & Vendrell-Herrero 2012). Further, Raymond and St-Pierre (2010) also argued that innovation has long been regarded as the key factor in the survival of SMEs. This is because the ability of a firm to innovate will create its first-mover advantage that will eventually increase and sustain leading edge competitiveness (Vaz & Nijkamp 2009) and profitability (O’Connor, Roos & Vickers-Willis 2007b). Similarly, Wan et al. (2005) claimed that innovation has played a crucial role in influencing the sustainability of a firm, particularly the challenges experienced in the business environment.

The intellectual property assets will be discussed in the next section.

c) Intellectual Property Assets

The importance of intellectual property (IP) as an asset to a firm portrays its ability to secure and protect innovative products or services from being exploited by competing firms in an industry (Ostergard Jr 2000; Piotrowska 2008; Rassenfosse 2012). Prior studies (De Carolis & Deeds 1999; Hanel 2006) showed that through good IP management, the
firms may increase their reputation and innovation value to their business stakeholders. Thus, the ability of the technology firm to manage its IP is crucial to sustain their business, to protect their new inventions and increase the firm’s reputation. In addition, IP protected by patent laws confers value creation by allowing new ventures to solely commercialize the toils of their new product development efforts, seize market opportunities and differentiate themselves from incumbents (Lee, Lee & Pennings 2001). Indeed, a good IP management may also serve as an important signal of the firm’s technological capabilities, making it possible for companies to obtain the capital necessary for growth (Zahra & Kirchhoff 2001). Hence, these would indicate the stock of organisational knowledge which impacts business performance and competitive advantage (DeCarolis & Deeds 1999).

Nevertheless, due to spillover effects of knowledge as well as diffusion of technology and innovation, technology-based firms have to carefully protect their intellectual property (Zahra & Kirchhoff 2001). In this respect, Spithoven, Vanhaverbeke & Roijakkers (2013) found that some firms opted to protect their new inventions as trade secrets in order not to disclose the technology employed to invest in new technologies, as some of new methods used were easily imitated by others (Thumm 2001). In addition, the discouraging culture of a country towards the IP management, such as minimal enforcement by the authority and complicated IP procedure, may discourage firms from applying for IPs (Zhao 2006).

3.5 BUSINESS STAKEHOLDER SUPPORT AND SUSTAINABILITY OF BUSINESS

3.5.1 Government-Specific Resource and Sustainability of Business

The role of government in supporting the development of entrepreneurial firms has been emphasised by many scholars (Fischer & Reuber 2003; Gilbert et al. 2004; Neck, Meyer, Cohen & Corbett 2004), especially in providing suitable infrastructure and incentives to entrepreneurial firms in developing countries (Mann & Gazzarin 2004). Furthermore, Neck et al. (2004) view the role played by government in supporting entrepreneurial firms as influencing the development of entrepreneurship activities. This is because the policy formulated by the government shapes the institutional environment, where entrepreneurial decisions are made by both existing and future entrepreneurs (Minniti 2008). For instance, the availability of government incentives to these entrepreneurial firms, such as in providing business grants or tax abatements, will enhance the expansion of
entrepreneurship nation-wide (Dubini 1989). On the other hand, Brundin et al.’s (2008) study of the Western Cape Region in South Africa found that any deficiency in entrepreneurial capacity resulted from a lack of government support and commitment, especially in creating a dynamic relationship with entrepreneurs. Therefore, having government policies that support business activities will eventually help sustain business operations (Ahn & Meeks 2008), specifically through financial incentives and allocation of research grants (Yahya & Kingsman 1999). This will also occur through government-sponsored entrepreneurship development programs (Ahn & Meeks 2008).

Dubini (1989) categorises the support services provided by the government into two major groups: infrastructure and incentives. With regard to the former, elements of governmental infrastructure may be divided into two subcategories; ‘hard’ infrastructure and ‘soft’ infrastructure. The ‘hard’ infrastructure is the governmental physical infrastructure representing the tangible components of a country’s infrastructure (Neck et al. 2004) such as business premises and government-owned manufacturing warehouses. On the other hand, soft infrastructure is the intangible components of a country’s infrastructure provided to entrepreneurial firms such as business advisory and information and business training. For example, Benzing et al. (2009) point out that business training offered by the government is important in overcoming the inability of entrepreneurial firms to run their businesses, especially maintaining accounting records. As a result, the expansion of distance education services as well as the provision of subsidised business by the government will assist firms to conduct their businesses (Benzing et al. 2009).

Government incentives refer to the implementation of public policies or schemes that aim to enhance the development of a new business, especially to modify the attractiveness of a particular industrial territory and to create a more conducive entrepreneurial environment (Dubini 1989). In this respect, the introduction of tax abatements and cost reduction schemes could be implemented to create more business ventures. Apart from this, having recognised that a lack of financial sources can be considered a major obstacle habitually experienced by small entrepreneurial firms, many countries implemented programs which aim to facilitate access to finance for small firms (Felsenstein & Schwartz 1993; Chandler 2010). In particular, the inability of newly-established small firms to gain access to financial sources due to their newness could convince lenders not to provide credit
facilities to the firms (Craig, Jackson & Thomson 2007). This may eventually hinder their ability to conduct business effectively in the long-term.

From the perspective of a technology-based industry, newly-established firms may also need to develop their own product prototypes in order to convince potential lenders or investors about their R&D capabilities and product viability (Westhead & Storey 1997). Indeed, the financial assistance provided by the government either grants, soft loans and subsidised services has generated positive outcomes, especially for firms which are relatively new (Koski & Pajarinen 2012). Fischer and Reuber (2003) indicate that it is difficult to formulate appropriate policy initiatives and infrastructures for entrepreneurial firms due to the different types of support and assistance required. That means that the policy initiatives implemented by a government should be tailored to the specific context of each economic region and industrial cluster (Minniti 2008). For instance, firms that are conducting their business in technology will require more technological support than service-based firms to enhance their innovation capability. In this respect, the government R&D funding as well as networking assistance with research institutions and universities are crucial for enhancing technology-based firms (Kang & Park 2012a). As a result, a different set of policies formulated by the government needs to adopted as blueprints for inculcating an entrepreneurial environment in a country’s specific industries (Gilbert et al. 2004). These views are in tandem with Van De Ven’s (1993) previous work where the author contended that individual entrepreneurs will eventually influence the provision of industrial infrastructures and facilities by the government, in that these actions were originally determined based on their business needs.

Additionally, the challenges faced by the government in formulating its entrepreneurial policy might also be derived from the limited amount of available resources to provide support services to all entrepreneurial firms. Consequently, the government needs to be more selective in determining which firms are entitled to receive support services (Bradford 2007). Moreover, a country’s economic direction is normally determined by the development plan as formulated by the government. Expanding on this point, government initiatives such as investment in providing industrial facilities, investment in education as well as financial and advisory support are influenced by the identification of a country’s core industrial clusters (Brundin, Wigren, Isaacs, Friedrich & Visser 2008). For example, several incentives have been introduced by the Malaysian government in the
biotechnology industry that comprise ten-year tax exemptions on newly-established biotechnology firms’ statutory income. Furthermore, several governmental funding initiatives such as seed fund, R&D matching fund and international business expansion matching fund were developed for the eligible biotechnology firms (MIDA 2009).

3.5.2 University Support and Sustainability of Business

The role of university has long been regarded, not only as a higher education institution (Chrisman, Hynes & Fraser 1995), but many scholars (Yusof & Jain 2010; Audretsch 2012) also suggested that it has evolved into an institution that plays important roles to promote a country’s innovation system and economic development. In this respect, Audretsch (2012) suggests that the expansion of the university in entrepreneurial society could be investigated through the development of knowledge that focuses on solving society’s problems rather than based on fundamental research, especially via technology transfer to industrial firms. In addition, the formation of the university’s institutional arrangements such as Technology Transfer Office and technology-based incubator can be seen as key mechanisms for the university to facilitate the spillover of knowledge and to promote a value creation process through commercialisation of its research outcomes (Rasmussen & Borch 2010).

Nevertheless, the capabilities of the university to develop its commercial applications and marketable products are typically low (Wright et al. 2012) despite having researchers and academics who are experts in creating new technology. Perhaps, the university’s academic cultures that put too much emphasis on publication aspects have created a challenge for the university to integrate the academic culture with a commercialisation setting as well as to ensure their inventions have a significant market value (Rasmussen & Borch 2010). To overcome this situation, Wright et al. (2012) stated that external surrogate entrepreneurs may be recruited to commercialise the university’s research outcomes, especially amongst its graduates. Hence, the spillover of knowledge and technology from the university to the entrepreneurial society could be done through a strategic collaboration between both parties.

Indeed, from the technology entrepreneurs’ perspective, the technological complexity in the knowledge-based industry, especially related to the cost and risk associated with R&D activities, has motivated the technology entrepreneurs to collaborate with universities
either directly or indirectly. Interestingly, some studies (Malairaja & Zawdie 2008; Wang & Shapira 2012) show that technology firms have benefited from interactions with universities more than those firms that did not initiate such a link with universities, especially in productivity rates, cost competitiveness, quality products and market share. Indeed, a recent study by Calver, Gold and Stewart (2013) found that the participation of entrepreneurs in a university program would enhance their network development and self-learning outcomes.

Nevertheless, some technology firms have pursued only short-term collaboration strategies that aimed to achieve immediate R&D outcomes (Bjerregaard 2009; De Fuentes & Dutrénit 2012); this would limit their capability to enhance their absorptive capacity and learning outcomes which are important for their business sustainability. Moreover, many studies have investigated the development of a university-industry relationship from a micro-level perspective (Bjerregaard, 2009), especially in regard to the technology entrepreneurs’ motivations for collaborating with universities as well as the strategies they use to sustain such collaborations long-term. This thesis would explore the synergy between the university academics and SMEs, especially amongst Bumiputera NTBSFs, which could help these SMEs to sustain their business.

3.5.3 Role of Policy Makers

Prior studies (Gilbert et al. 2004; Acs & Szerb 2007; Zhou 2013) have shown that the implications of entrepreneurship towards a country’s economic development have attracted the attention of the policy makers to formulate strategic entrepreneurship policies that focus on employment creation and economic growth. Important aspects that need to be considered by the policy makers in designing the public entrepreneurship policies are to identify the needs of entrepreneurs in sustaining a business and how to deliver such policies to them (Yusuf 2012). Shane (2009) argued that policy makers should focus their efforts by providing more support to only those firms with high growth potential and stop subsidising new business start-ups. In line with this view, Gomez (2012) claimed that the implementation of SMEs’ well-formulated programs by the Malaysian government that aim to create Bumiputera capital and equity redistribution do not promote productive entrepreneurship. This could be explained by the ineffective procedures in providing relevant subsidies to selective entrepreneurs such as mainly for ineligible entrepreneurs who have a strong political connections (Faccio 2006).
In contrast, Mason and Brown (2013) suggest that the policy makers should revise their approach in developing more high growth firms by formulating appropriate support and assistance to entrepreneurs based on their specific entrepreneurial environment. In this respect, the policy maker should be alert to the needs of the entrepreneurs based on geographical area, business clusters and business lifecycles of the firms (Gilbert et al. 2004). For instance, public intervention during initial phases of a business venture is crucial in assisting the entrepreneurs to overcome any obstacles that hinder their business growth (Norrman & Bager-Sjögren 2010). Besides, continuous incentives should be designed to promote a better network amongst the firms in the industry in order to enhance business collaborations and networks, in which Román, Congregado and Millán (2013) found that provision of significant policy should promote business network as social sources of opportunity-related information in sustaining the business.

3.6 SUMMARY

This chapter discusses the important constructs of business sustainability amongst Bumiputera based on the analysis of the literature and the outcome that emerged in the pilot study. In this respect, three theories associated with the business sustainability were employed to guide in the development of initial proposed conceptual framework of this thesis. The three main themes discussed in this chapter were: founder-specific factors, firm-specific resources and business stakeholders’ support and assistance.

The constructs underpinning the founder-specific factors theme are divided into three main categories: founder attributes, founder’s human capital and founder’s social capital. Two elements emerged under the founder attributes theme; founder’s entrepreneurial motivation and personalities. The discussion of the founder’s human capital is based on the investment of human capital (education background and prior experience) and the outcomes of the investment of human capital (relevant skills and knowledge). Having considered the social aspect of founders, the founder’s social capital investigates the impact of family background and support as well as friends’ influence towards the sustainability of Bumiputera technology firms.

The firm-specific resources theme unearthed two main elements that could influence the sustainability of Bumiputera NTBSF: (a) firm’s social capital that emphasises on the development of a business network and reputation in operating the business, and (b) firm’s
capabilities and intangible assets that can be explained in terms of firm’s R&D and technology capability, firm’s organisational innovation culture and firm’s IPRs. Lastly, the constructs underpinning the business stakeholder support theme focus on the roles played by three main business stakeholders: (a) government agencies, (b) universities and (c) policy makers, in which the initiatives taken by these business stakeholders such as provision of financial grants and business advisory will help the Bumiputera firms to sustain their business.

Having these constructs underpinning three main themes in the thesis helped the researcher to revise the initial proposed conceptual model of this thesis (Figure 3.1) to eventually produce the second conceptual model of this thesis (Figure 9.7) as developed in Chapter 9. The next chapter presents the methodology employed in conducting this thesis.
CHAPTER FOUR

RESEARCH METHODOLOGY

4.0 INTRODUCTION

The chapter aims to explain and justify the research methodology implemented throughout this thesis, specifically the examination of the most appropriate method for identifying, gathering and testing the thesis research data to answer the research question and to explain the initial conceptual framework generated in the previous chapter. The chapter starts by reviewing the research design used in past entrepreneurship and small business studies, and then discusses the rationale for employing the methods adopted in this study. This is followed by a discussion on philosophical paradigm in conducting this thesis, then how case study methods were employed. Then, the chapter describes the data analysis techniques employed and finally, this chapter outlines strategies used to overcome issues pertaining to research credibility in conducting this qualitative thesis.

4.1 RESEARCH APPROACH

The research approach employed in this thesis includes qualitative exploratory study and semi-structured interviews with various relevant parties such as entrepreneurs, government officers and policy makers. Employing a qualitative approach may provide room for exploring the business sustainability amongst Malaysian Bumiputera NTBSFs from divergent perspectives. Qualitative research methods are employed because they enable the researcher to acquire a more in-depth understanding of the specific issues in relation to this thesis, particularly the business sustainability issues amongst Bumiputera entrepreneurs in technology-based industries. A qualitative approach helped the researcher to better comprehend the socioeconomic context in which they operate the business (Myers 2009).

Qualitative research genres have become increasingly important modes of inquiry for the social sciences (Hindle 2004). In a research project, qualitative research is used to provide a deep set of knowledge about a particular phenomenon (Jones, 1997). In the qualitative approach, researchers are more interested in obtaining information on ‘how things happen’
and ‘how results are produced’ (Creswell 1994) and more concerned with meaning and values of a phenomenon (Ashley & Boyd 2006). This is because ‘qualitative research is a situated activity that locates the observer in the world. It consists of a set of interpretive, material practices that make the world visible’ (Denzin & Lincoln 2000).

Moreover, Denzin and Lincoln (2011) state that qualitative researchers use a variety of interconnected interpretive techniques to make more reasonable the universes of experience they have examined, by searching for well-designed approaches in conducting a research. Similarly, McMurray et al. (2004) mentioned that qualitative research relies heavily on observing people in their own environment, communicating with them with their language, thus the researcher in qualitative world seek to make sense of the social interaction between the participants and eventually to create a reality of the study concerned from the inside out. Perhaps, one of the reasons this social interaction exists in this type of methodology is because qualitative method is fundamentally interpretive in which the researcher makes an interpretation of the data collected in the study (Creswell 2003). Therefore, this interaction would help the researcher to interpret the issue concerned in conducting a research from a holistic perspective about the reality being investigated.

However, qualitative research does have its drawbacks. The main argument against it is the concept of validity. It is difficult to determine ‘the truthfulness of findings’ (Jones 1997; Sekaran 2003) which makes it difficult to generalise the views of respondents to the general population. Furthermore, qualitative research methods may lack pure scientific rigor as defined by the physical sciences, but result of qualitative research may still exert a stronger influence on our understanding of everyday behaviour than the quantitative sciences do (McMurray et al. 2004). Nevertheless, these matters have been taken with precaution awareness by the researcher in Section 4.8 in this chapter that highlighted the issues of validity, reliability and credibility to minimise the drawbacks of utilising qualitative approach as well as how this thesis overcome these issues.

One may question why this study did not consider employing a quantitative approach in answering the research question and proposition of this thesis. As this study is phenomenon-based research, the main argument against the quantitative method is based on its inability to explain an in-depth underlying meaning and provide rich explanations
and justification of the issue being studied, even when the findings are significant, reliable and valid (Jones 1997). Perhaps, it is because quantitative methods as claimed by McMurray et al. (2004) often constrain the data in ways that misinterpret the phenomena that the researcher intends to study.

Next, a discussion of the research paradigm will be discussed.

4.2 RESEARCH PARADIGM
A scientific research paradigm is an overall conceptual framework within a researcher’s works (Healy & Perry 2000) that may guide him or her in conducting research (Sobh & Perry 2006). This is because a scientific research paradigm may be classified as the net that contains the researcher’s ontological, epistemological and methodological premises in research philosophy (Denzin & Lincoln 2000). Furthermore, Thomas (2004) contended that all research was conducted on the basis of fundamental assumptions, specifically the nature of research subject matter and the ways it can be known. Researchers should employ a scientific paradigm (Perry, Riege & Brown 1999) either explicitly or implicitly in conducting research as every researcher normally conducts research with some set of interlocking philosophical assumptions on the phenomena of interest (Greene & Caracelli 2003).

Hence, the understanding of assumptions that underpin research is crucial for a researcher to advance a thesis’s theory development (Myers 2009). This is because a paradigm reflects a researcher’s understanding of the nature of existence that is rational within a specific constructed logic of inquiry (Lincoln & Guba 1985). Thus, a scientific research paradigm has eventually helped the researcher to conduct research work into a specific perspective or discipline at a certain time and to avoid to make over-ambitious or unsustainable claims of the final answer or ‘the truth’ (Thomas 2004).

Moreover, Easterby-Smith, Thorpe & Lowe (2002) suggested that researchers who want to conduct research must also be aware of the philosophical and political issues that underpin the research background. The failure to think through philosophical issues can seriously affect the research quality. By having an ambiguous view of the research paradigm, the researcher would eventually face difficulties in structuring a solid research design. This can affect the reliability and validity of the research, especially the methods and
instruments that the researcher can select whilst conducting the research. This is because the philosophical context of a research paradigm has been argued by Hindle (2004) as an approach to the selection of methods in conducting a particular study. By understanding the underlying philosophical context of the research (especially the ontological, the epistemological and the methodological aspects) the researcher would know which methods best suit the study being conducted and how it should be conducted.

4.2.1 Philosophical Dimensions on Research Paradigm

There are three main philosophical dimensions of the research paradigm in conducting research: ontology, epistemology and methodology. First, the ontology philosophical dimension usually raises a question about the nature of reality, such as ‘What is nature of the world?’ (Maykut & Morehouse 1994). Easterby-Smith et al. (2002) contend that ontology refers to assumptions that the researcher makes about the nature of reality. Second, epistemology is defined as ‘a study or a theory of the nature and the justification of knowledge that focuses on the limit and validity of the knowledge’ being investigated by the researcher (Hindle 2004, p. 581). This assumption involves one’s belief about the type of knowledge acquired and how that person differentiates the knowledge between what constitutes accurate knowledge and what can be referred to as false knowledge. Consequently, epistemology will eventually determine the relationship between the inquirer (the individual researcher) and the known (the issue being investigated) (Denzin & Lincoln 2000; Sobh & Perry 2006). The third philosophical dimension is methodology, which concerns the methods the researcher implements in gaining knowledge about the ‘reality’. This statement is supported by Denzin and Lincoln (2000) who defined methodology as how the researcher knows the world or gains knowledge of it. More specifically, methodology is a combination of techniques being used by the researcher to enquire into a specific situation (Easterby-Smith et al. 2002), which can only be viewed as a strategy or plan of action that links methods to outcomes and also governs the researcher’s choice and use of methods in conducting research (Creswell 2003).

The next section discusses the selection of the realism paradigm as a philosophical aspect which has guided the research in this thesis.
4.2.2 Selecting the Realism Paradigm

These philosophical assumptions are crucial to support four main scientific paradigms in conducting research, namely positivism, critical theory, constructivism and realism. Figure 4.1, adopted from Perry et al. (1999), illustrates types of research paradigm and philosophical aspects that support the paradigm. Based on this illustration, this thesis used a realism paradigm in which a qualitative approach was employed in order to uncover factors of business sustainability.

**Figure 4.1: Research Paradigm**

<table>
<thead>
<tr>
<th>Element</th>
<th>Positivism</th>
<th>Constructivism</th>
<th>Critical theory</th>
<th>Realism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ontology</td>
<td>Reality is real and apprehensible</td>
<td>Multiple local and specific</td>
<td>“Virtual” reality shaped by social, economic, ethnic,</td>
<td>Reality is “real” but only imperfectly and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“constructed” realities</td>
<td>politival, cultural, and gender values, crystallised</td>
<td>probabilistically apprehensible and so triangulation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>over time</td>
<td>from many sources is required to try to know it</td>
</tr>
<tr>
<td>Epistemology</td>
<td>Findings true – researcher is objective by</td>
<td>Created findings – researcher is a</td>
<td>Value mediated findings – researcher is a “transformative</td>
<td>Findings probably true – researcher is value-aware</td>
</tr>
<tr>
<td></td>
<td>viewing reality through a “one-way mirror”</td>
<td>“passionate participant” within</td>
<td>intellectual” who changes the social world within</td>
<td>needs to triangulate any perceptions he or she is</td>
</tr>
<tr>
<td></td>
<td></td>
<td>the world being investigated</td>
<td>participants live</td>
<td>collecting</td>
</tr>
<tr>
<td>Common methodologies</td>
<td>Mostly concerns with a testing of theory. Thus</td>
<td>In-depth unstructured interviews,</td>
<td>Action research and participant observation</td>
<td>Mainly qualitative methods such as case studies and</td>
</tr>
<tr>
<td></td>
<td>mainly quantitative methods such as survey,</td>
<td>participant observation, action</td>
<td></td>
<td>convergent interviews</td>
</tr>
<tr>
<td></td>
<td>experiments, and verification of hypotheses</td>
<td>research, and grounded theory</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Adopted from (Perry et al. 1999, p. 17)

Nevertheless, Watkins-Mathys and Lowe (2005) argued that the development of research paradigms and methodologies in conducting small business and entrepreneurship research led to the generation of different opinions among scholars. In this regard, the researcher believed that constructivism and critical theory are not relevant in research about an organisation having to survive within a market (Sobh & Perry 2006). For example, a study on entrepreneurial processes needs to deal with a world that is external, that is out there and does not particularly care about the perception of an entrepreneur.

Additionally, subjective meaning within an individual’s constructed realities may indeed determine some outcome in entrepreneurship research such as an entrepreneur’s choice of
strategy in running a business, yet the issue of business sustainability may also comprise other external factors such as government policies and entrepreneurial development plan. This may explain why a realism paradigm is often the appropriate paradigm for conducting the case study research for this thesis (Stokes & Perry 2007). More importantly, the triangulation between the findings from all groups of participants in this thesis would assist the entrepreneurs to understand any supporting and contradicting views that emerged from each case investigated. Further, an outcome of one case would be able to explain another outcome generated from other cases. For instance, the outcomes generated from academics-participants would be able to explain the importance of formal educational background as perceived by the Bumiputera entrepreneurs in this thesis.

Based on Perren and Ram (2004), this thesis adapted a ‘Multiple Stories Milieu Explorations’ paradigm of conducting case-study method. The adaptation of multiple stories milieu explorations case-study methods emphasis on two dimensions namely subjective perspective and milieu boundary. Subjective perspective is more inclined towards the understanding of the technique in which an individual creates, exploits as well as interprets the phenomena investigated. Meanwhile, for milieu boundary, the coverage of phenomena investigated is more inclined towards involvement of many social actors investigated in the subject matter. Based on this paradigm, this thesis involved many social actors such as technology-based entrepreneurs from Indigenous and non-Indigenous, government officers, academics and policy makers.

**Figure 4.2: Paradigms Adopted by Small Business and Entrepreneurial Case-study Researchers**

![Paradigms Adopted by Small Business and Entrepreneurial Case-study Researchers](image)

Source: Adopted from Perren and Ram (2004, pp.86)
The involvement of multiple social actors was aimed to obtain different convincing interpretations of factors influencing business sustainability in technology-based industries, specifically amongst Malaysian Indigenous NTBSFs. The acceptance of multiple subjective interpretations in implementing case-study method might cloak the different narratives amongst participants. The competing stories had eventually shed light on the multiple realities of business sustainability phenomenon. The subjective boundary of this thesis may be explained by a set of interview questions that will be discussed in the following section, while the milieu boundary may be portrayed by the sample involved in this thesis.

4.3 RESEARCH DESIGN STRATEGY

Research design refers to a blueprint or detailed plan specifying the methods and procedures for collecting, analysing and reporting the research data and information in research studies (Zikmund 2003; Creswell & Plano Clark 2007). The main objective of structuring a solid research design is to help researchers to avoid the situation in which the evidence does not address the initial research questions outlined in a study (Yin 2009). Based on the number of contacts with the study population, a cross-sectional study design was adopted in this thesis. In general, cross-sectional studies is also known as one-shot or status studies (Sekaran 2003; Kumar 2005). The rationale for choosing this design was that it best suited investigation of the prevalence of a phenomenon, situation, problem or issue by taking a cross-section of a population. The strength of this design is the overall picture that would be obtained at the time the study is conducted.

The fundamental of this research design was developed from the taxonomy development model (Creswell & Plano Clark 2007). The two-stage qualitative research was conducted to identify important variables related to factors influencing business sustainability amongst Malaysian technology-based entrepreneurs. The identification of these variables led to the development of taxonomy of business sustainability factors. All categories identified in the Stage I (pilot stage) were used to guide the refined research questions as well as data collection used in the second, main qualitative stage. Hence, the Stage II (main study) was conducted in order to further refine and understand the factors between identified variables in the Stage I.
4.3.1 Research Design Strategy for the Qualitative Research

The conduct of qualitative research in this thesis was designed rigorously as depicted in Figure 4.3 in which several steps needed to be undertaken sequentially. These steps were initiated with the researcher defining the research problem and research questions. This resulted in selecting the research paradigm and methods in designing the semi-structured interview protocol for the preliminary qualitative study. Then, the researcher conducted Stage I of the study by face-to-face interview with a group of Bumiputera technology entrepreneurs; this might also involve searching, selecting and contacting relevant experts, and refining the semi-structured interview guide for Stage II. After refining the interview outcomes generated from the preliminary study, the researcher conducted the in-depth interviews for the main qualitative study in Stage II. This involved preparing a fieldwork protocol, selecting and contacting the firms, scheduling the interviews and follow-up contact with owners or key personnel of the multi-industries and types of respondents. Immediately after the interviews, the researcher transcribed and translated the interviews. To accommodate participants’ communication styles, the researcher conducted the interviews in Malay, or English or a mix of both. In this respect, some conversations with the interviewees were translated into English. Besides that, the researcher was also validating the transcripts by sending them to selected participants at this stage. This ‘back to back’ translation as suggested by Triandis (1983) was used to guarantee clarity, accuracy and consistency of the translated data and to ensure that the participants’ views would not be affected by the translation.

In order to manage the interview transcripts effectively for the next stage, the researcher employed two main qualitative research software products, namely Microsoft Excel and NVivo version 9 to code all themes relevant to answering the research question and explaining research propositions. The final process involved the process of reporting and discussing the findings relating to the research questions.
4.4 Research Method: Multiple Case Studies

One of the most cited definitions of a case study was provided by Yin (2009, p. 74) in which a case study is, ‘…an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident’.

In a simplest description, a case study may be regarded as both a process of strategic inquiry and the product of that inquiry (Stake 2005). The process of strategic inquiry in a case study can be translated in terms of: (a) a research method that will guide a researcher to investigate and analyse empirical data of the phenomenon understudied (Myers 2009), or (b) an approach to investigating social phenomenon through a systematic analysis of an individual case (Kumar 2005). The case may be a person, group, process, community, society and other unit of social life. Whilst, the product of that inquiry is the answer of ‘how’ and ‘why’ questions about contemporary events or phenomenon (Eisenhardt 1989) whereby these phenomenon are normally examined in its natural setting (Kelley, Peters & O'Connor 2009). This is because the case study research usually involves the examination
of an inquiry explored through one or more cases within a bounded system (Creswell 2007).

Case studies are widely used in investigating contemporary social phenomena which emphasis on gaining contextual understanding of behavioural regularities of the subject understudied (Llewellyn & Northcott 2007). Further, the acceptance and popularity of the case study as a research method has gained it place amongst research community, specifically for optimising understanding by pursuing scholarly research questions (Stake 2005) and of the bridges from rich qualitative evidence to conventional deductive research (Eisenhardt & Graebner 2007). Due to this fact case study has been commonly employed by organisational studies researchers and social scientists, specifically in fields such as sociology, anthropology and industrial relations (Hartley 2004; Mohd Noor 2008).

From the context of business and management research that is commonly dominated by the positivist paradigm, advocates of qualitative management research faced difficulties to establish its legitimacy in using case studies as a new research approach, specifically in justifying issues around the representativeness of data and the generalizability of case study findings (Llewellyn & Northcott 2007; Siggelkow 2007). Nevertheless, in recent years, the viewpoint and contributions of the case study method in management research have received considerable interest from both classic scholars as well as authors from scholarly journals in the management field (such as Academy of Management Journal), specifically to make use of case studies as a strategic research method (Eisenhardt & Graebner 2007). Myers (2009) mentions that the employment of case study research in the business and management field is used as empirical evidence to convince other researchers of the relevancy and applicability of a particular theory or proposition based on the phenomenon under study. Further, the use of the empirical evidence in a business and management study is derived from real people in real organisations to make a contribution to knowledge (Myers 2009).

Along with other qualitative inquiry methods, the case study method is also gaining acknowledgment within the small business and entrepreneurship scholars (Perren & Ram 2004). As suggested by Bygrave (2007), the application of more in-depth case studies is considered a way to better understand the entrepreneurial process in a firm. This is because the heart of the entrepreneurship process will be found in the descriptive background and
thus, the researcher may not be able to comprehend the heart of the entrepreneurship process unless they observe it happening in the field. An illustration of this is the inductive case study carried out by Kistruck and Beamish (2010) in which they conducted rigorous analysis of ten case studies on social entrepreneurship in seven different countries within Africa and Latin America. This study has uncovered the importance of cognitive, network and cultural embeddedness in historically non-profit organisations.

From a qualitative research perspective, the application of case studies is used as an inductive investigative strategy (Merriam 2002) that investigates and explores a bounded system (a case) or multiple bounded systems (cases) over time. This process normally employs multiple, in-depth sources of information that eventually are able to produce richly descriptive reports about a case description as well as themes explored from the case under study (Creswell 2007). The case study method was chosen for this thesis due to several justifications, as listed below:

a) The case can usually get much closer to theoretical constructs and provide much more persuasive argument about causal forces than broad empirical research can (Siggelkow 2007). This thesis aims to uncover factors influencing sustainability of business amongst technology-based entrepreneurs in Malaysia and thus analysis has been conducted by applying the theoretical constructs that had been identified in the previous chapter. Indeed, the explorations of the proposed theoretical constructs were implemented via series of in-depth semi-structured interviews with selected entrepreneurs, academics and government officers in technology-based industries.

b) Case studies may be capable of supplying holism within one or several cases simultaneously with providing local theory (Stake 2005). This thesis focused on a small number of respondents (cases) with greater depth with selected theories as mentioned before.

c) Case studies may provide an opportunity for the intensive analysis of many specific details often overlooked by other methods (Kumar 2005). Through case study analysis the researcher was able to achieve greater depth and insight on ‘how’ and ‘why’ identified factors may influence the sustainability of business amongst Malaysian Bumiputera NTBSFs.
4.5 DATA COLLECTION TECHNIQUES

For this qualitative study, three main data collection techniques were used, namely interviews, document analysis and field notes. An explanation of each of the techniques is discussed below.

4.5.1 Interview

Interviewing is a common and powerful instrument of data collection technique employed by researchers to understand their fellow humans (Fontana & Frey 2005; Ghauri & Grønhaug 2005) and a reality of specific phenomenon investigated (Denzin & Lincoln 2008), particularly in conducting a qualitative research (Myers & Newman 2007; King & Horrocks 2010). The purpose of the qualitative interview is to contribute to a body of knowledge that is conceptual and theoretical and based on the meanings of life experiences valued by the interviewees (DiCicco-Bloom & Crabtree 2006). This is because the interview provides a unique opportunity to discover information which is rich and complex in nature from individual interviewees (Cavana, Delahaye & Sekaran 2001) and assists the researchers to interpret interviewees’ rich thoughts on issues investigated (Ticehurst & Veal 2000).

Being a qualitative researcher in this thesis requires the researcher to explore and describe multiple views of research participants from five sectors including technology-based entrepreneurs, academics and government officers. This is because interview participants are more likely as meaning makers as interpretation of interviews are derived from their talk, emotions and feelings (Ticehurst & Veal 2000; Warren 2001). In this thesis, the employment of in-depth, semi-structured interviews is the key instrument to discover multiple realities amongst participants (Stake 1995).

Semi-structured interviews generally have an overall structure and direction, but allow a lot of flexibility to include unstructured questioning (Hair, Money, Samouel & Page 2007). This is because the conduct of this interview is structured around a set of predetermined open-ended questions and other questions emerging from the conversation between the researcher and interviewees (DiCicco-Bloom & Crabtree 2006). The researcher prepared several questions beforehand by using an interview guide, but there is a need for
improvisation, specifically to probe for additional information (Green 2005; Myers & Newman 2007).

For this thesis, the semi-structured interview is chosen based on several justifications. First, it offers flexibility compared to structured interview style that imposes a predefined pattern of analysis by relying on a standard and limited set of questions (Iacobucci & Rosa 2010). That means the semi-structured interviewer will use defined dimensions only and will explore and probe the interviewee into several factors within the themes of the research (Johnson 1990; Sekaran 2003). This enabled the researcher to cover many aspects of research interest due to the nature of flexibility and autonomy offered by this method, specifically to pose new questions during the interview and seek further information (Green 2005). Additionally, in line with Bryman (2008), semi-structured interviews also allowed participants to be more flexible in expressing their views and responses to the researcher’s queries.

In conducting an interview for this thesis, the researcher would normally begin with several common questions that were based on his interview outline. For example, when the researcher conducted an interview amongst entrepreneurs, the researcher would be initially asked the respondents on their motivations to be an entrepreneur and their initial business start-up history. By listening to their initial answers the researcher would determine what questioned to be asked next, or whether it is important to probe additional information till all questions on the interview outline were covered (Maykut & Morehouse 1994). Then, before the researcher concluded the interview session, he would ask the participant again to summarise the main factors that they perceived would help technology entrepreneurs to sustain in the business.

Secondly, the semi-structured interview is suited to exploratory study where the issues of interest are highly personal or ill-defined to a specific individual (Thomas 2004). This interview type allows the researcher to ask new questions during the interview session in order to explore and shed new light on relevant themes of the research framework. Interestingly, the employment of the in-depth semi-structured interview also enabled the researcher to investigate deeply into social and personal matters, specifically for an individual interview as the respondents would be able to express their views without any influence from others (DiCicco-Bloom & Crabtree 2006). For instance, the perception of
different factors that might help Bumiputera technology-based entrepreneurs would be different for each interview and by having a one-to-one interview with the interviewees; they would feel more comfortable andconfident to express their views and critiques upon the interview questions. Some of them would also ask this researcher to turn off the interview recording when they want to express a very personal story or experience. Yet, from this process, the researcher would be able to understand further the nature of the study undertaken and uncover intriguing puzzles.

Thirdly, the employment of semi-structured interview also provides opportunities to change the words but not the meaning of questions posed to participants (Barriball & While 1994). This is because each interviewee is expected to have had unique experiences or stories to tell (Stake 1995), and thus, a different way of questioning styles and content would be customised based on interviewee feedback. The questions drafted for the interview may need to be worded differently to different respondents in order to generate the same meaning for all respondents and depend on the specific context of each researcher-participant interaction. The employment of semi-structured interviews is deemed suitable for exploring views from various groups of participants in this thesis on a specific topic. The researcher used phrases or words appropriate to different participants, for example, in exploring the motivation theme of an entrepreneur, the researcher would use the words ‘motivate’, ‘inspire’ or ‘goal’ and then probe more to further explore the theme. Thus, the researcher would not use language requiring the interviewees to grapple to understand with jargon or technical terms.

Lastly, the employment of semi-structured interviews also assisted the researcher to explore and acquire opinions and perceptions of respondents regarding complex and sometimes sensitive or contentious issues (Barriball & While 1994; Thomas 2004; Creswell 2009) such as the special treatment received by Bumiputera entrepreneurs as compared with non-Bumiputera entrepreneurs and the influence of political connection in operating a business. In dealing with this kind of question, the researcher would use a ‘wait and ask’ strategy where the sensitive or complex questions would be asked of the participants when the issues were raised by them while expressing their views. This strategy seemed to be an effective method as it happened many times during the interview session. Further, some of them might also give their feedback on this matter without requiring the researcher to ask direct questions.
4.5.2 Document Analysis

An analysis based on textual materials or documents provides relevant research data in a qualitative research (Eriksson & Kovalainen 2008), specifically through the usage and examination of secondary data (Cavana et al. 2001). This process is conducted by using either published or unpublished printed materials such as company reports, faxes and newspaper articles (Silverman 2010). Yin (2009) suggests that relevant documents are viewed as important investigatory tools which researchers could use in order to make inferences about events and to provide further understanding of the subjects or participants understudied.

The employment of this technique for data collection process in this thesis is based on several justifications. First, the analysis of relevant documents (e.g. reports and government policies) helped the researcher to build a better understanding in conducting this research (Myers 2009), in which these documents could provide significant and important insights into an issue understudied (Merriam 2002). For example, the analysis of government’s policy documents such as the Tenth Malaysian Plan could afford the researcher a better understanding of the inspiration of the Malaysian government towards the development of Malaysian Bumiputera entrepreneurs.

Second, the application of relevant company documents such as company profiles and product descriptions might be able to portray the historical background of a company as well as to provide a record of decisions taken by the company (Rowlinson 2004). Indeed, the utilisation of company documents has provided relevant information on a company such as the directorship, nature of business and product offerings (Thomas 2004). These documents were obtained by the researcher either from some entrepreneurs who were kind enough to give their company documents, or the researcher bought some company profiles from the Companies Commission of Malaysia (CCM) for RM13 (approximately AUD4) per document. Despite these documents being relatively inexpensive, the documents were regarded as a good quality data because companies understudied usually make efforts to document their business profiles (Thomas 2004). Nevertheless, a few companies were not able to provide their company documents to the researcher because some were new in the industry and some mentioned that this data was confidential.
The third justification for using documents was that documents and records are generally regarded as non-reactive, unobtrusive sources of data (Thomas 2004). This is because the documents utilised in this thesis have been produced before or during the research and thus their contents obviously cannot have been influenced by the researcher’s presence or by the existence of a research investigation. Interestingly, the preparation of this thesis coincided with many changes in Malaysia’s socioeconomic landscape, especially with the appointment of Najib Razak as the new Prime Minister of Malaysia in April 2009, which has led to further changes to the Malaysian government’s policy documentations such as the Liberalisation Policy and the introduction of the Malaysian New Economic Model (NEM). All these mentioned documentations had opened up to broaden the investigation on issues associated with the development of Malaysian Bumiputera entrepreneurs, particularly in the technology-based industries.

Nevertheless, due to tremendous sources of information available from this method, the researcher had to set some criteria for determining the validity of the data for the research. This criteria could help researchers to avoid drawbacks of using this method, such as the collected data becoming obsolete or irrelevant and not able to meet specific needs of the research under study (Cavana et al. 2001). As a result of this, in order to ensure the quality assurance for this thesis, the researcher followed Forster’s (2006) five practical stages in accessing and analysing documents (specifically company documents) which comprised: (a) accessing relevant documents, (b) checking for the authenticity, (c) understanding the documents, (d) analysing the data, and lastly (e) utilising the data.

**4.5.3 Field Notes**

Field notes are a descriptive record of conversations and events experienced by researchers in conducting research (Thomas 2004), specifically to record their impressions and initial thoughts throughout the in-depth interview process (Bryman & Bell 2007). The application of field notes in a qualitative research has been recommended by Myers (2009) whereby a researcher should write filed notes alongside the use of different kinds of recording devices to collect interview data. This is because these notes could be used as a source of what a researcher was thinking and feeling on what has been implemented during an interview (Myers 2009) besides making any additional commentary that might help the researcher in analysing the data in the latter stage. Indeed, notes taken by the researchers
would help them to specify clearly key aspects or themes emerged during the data collection processes (Bryman 2008).

In collecting the research data for this thesis, the researcher wrote the field notes while conducting the interview and listening back to recorded interviews (see Appendix B). The contents of the field notes were the name of interviewees, the data and time of interview and main contents of responses received from the interviewees (Flick 2009). The researcher also wrote any additional note like a memo, even after the conversation has taken place once he recalled any data considered relevant to the issue under study (Thomas 2004). Moreover, by taking important notes of the interview contents, it allowed the researcher to identify any emerging themes that had been emphasized by interviews and may also be considered as rich source of complementary data. Flick (2009) also mentioned that the production of reality in text starts with the taking of field notes from the research conducted. Therefore, the field notes taken by the researcher in this thesis were organised and indexed systematically in order to make aware of certain things which were important and should not be ignored during the analysis of the raw data collected (Payne & Payne 2004).

**4.6 DATA COLLECTION PROCESS**

This section explains the qualitative data collection procedures undertaken in this thesis. The procedure for the two-stage approach in the qualitative study comprised the process of identifying and approaching the respondents, the respondent’s profiles, the interview schedules and protocol, and the experience of the data collection process conducted for this thesis. The qualitative study of this thesis involved two stages of data collection in which interviews as the main research tools were used as stated earlier in Section 4.5.1. This section will firstly discuss the process of the researcher planning and conducting interviews followed by the data collection activities

**4.6.1 Planning and Conducting Interview**

Generally, there is no specific step in planning and conducting an interview. Interviews are normally conducted based on several factors such as the type of interview, the circumstances of interview and the types of data being collected by the researcher. Nevertheless, in conducting this qualitative stage, six key steps in planning and conducting
interviews as advised by Crowther and Lancaster (2009, pp. 149-50) were adapted. These six steps [Step (a) through (f)] will be discussed comprehensively in the following.

(a) **Determine data objectives and topics for discussion**
Green (2005) suggests that the key element of a good interview is the formulation of a set of good questions to ask interviewees. In this respect, choosing a topic or topics for discussion is crucial in determining the adequacy of research credibility and importance (Rubin & Rubin 2005). The main purpose of conducting the semi-structured interview in this thesis was to uncover main factors which may influence the sustainability in business amongst Malaysian Bumiputera NTBSFs. This process helped the researcher in making meaning of the interviews within the purview of the designated research topic (Warren 2001).

In practice, the determination of choosing a good topic and formulating a viable research question can take weeks or months as both the topic and questions emerge iteratively (Rubin & Rubin 2005). This is because the researcher wanted to ensure the interview process gave meaning within the purview of the sustainability of Bumiputera NTBFs. An interview guide was employed in this thesis to assist the researcher to effectively conduct semi-structured interviews, especially by gleaning all important concepts and views of the participants through the list of question developed in the interview guide (Bryman 2008; Flick 2009). The researcher formulated and designed a list of interview questions of the interview guide based on relevance existing literature (Warren 2001) and outcomes from the pilot study. For illustration, Appendix C shows the interview guide that was specifically designed for in-depth interviews with Bumiputera technology entrepreneurs. The application of the interview guide enabled the researcher to gain more freedom and flexibility to ask the participants strategically by probing relevant questions which would lead to explain the phenomenon understudied (Hair et al. 2007). Besides, it also guided the researcher to write analyses chapters in this thesis. Importantly, the application of this interview guide enabled the researcher to sustain the standardisation and comparability of the research and to increase the reliability of this thesis (Yin 2009).

(b) **Identifying and approaching interviewees**
The main objective of conducting interviews for this study was to acquire compelling and valid information from the right person (Ghauri & Grønhaug 2005). Rubin and Rubin
contended that the basic tenet in identifying potential interviews for a study is by selecting the interviews who are experienced and knowledgeable in the study undertaken.

The identification of interview respondents for this thesis was implemented via three different methods: purposive sampling, recommendation from key informants (gate keepers) and snowball sampling. Initially, the interviewees were selected based on a purposive sampling whereby the selections were based on an iterative process that aims to maximise the depth and richness of the data to address the research question understudied (DiCicco-Bloom & Crabtree 2006). In this respect, a small sample was chosen because of the expected difficulty of obtaining the sample for this study. For instance, the selection of Bumiputera new technology entrepreneurs for this thesis was based on several criteria as follows: (1) the firm was founded and was still controlled by the Bumiputera entrepreneur interviewed; (2) the firm was involved in technology-based industries; (3) the firm was a new venture, not an acquired business, and operating not more than eight years; and (4) the group of firms was small-sized enterprises that employed less than 20 full-time employees.

By doing this, purposive sampling allows the researcher to choose a specific case as it illustrates some related features or process in which the researcher is interested, yet this sampling type requires the researcher to think critically about the parameters of the population under study and choose the sample case carefully on this basis (Silverman 2010). According to Di Domenico, Haugh and Trace (2010), ‘the purposive sample was used to identify common behaviour patterns among units of analysis that face diverse resource conditions and constraints, thus allowing for greater claims to theoretical extraction than with a more homogenous sample’.

Nevertheless, slow responses from the potential participants required the researcher to employ another two strategies to increase the respond rate of the interviews. Several key informants amongst the government officers and academics were asked to give several suggestions of any potential interviews. Besides that, some entrepreneurs also suggested their business partners who were also doing similar business in the technology-based industries. Hence, the semi-structured interview session was conducted amongst the selected respondents in this study with a selection of the participants, especially among the founder of high-technology entrepreneurial firms and the authority bodies with an interest in the technology entrepreneurial activities in Malaysia. As suggested by Sieber (1978), by
conducting an interview with the people with a central leadership role in an organisation, it would be easier for the researcher to circulate a questionnaire to the followers or subordinates as it being endorsed or supported by their leaders. For example, by conducting an interview with one of the directors in the SME Corporation, the tendency for the researcher to get any information from other entrepreneurial agencies would be easier.

(c) Seeking permission
Initially, an email was sent to prospective participants inviting them to participate in this research. The email was attached together with a formal invitation letter explained the background of the research undertaken, the Plain Language Statement of this study (Appendix D) and contact information of researcher. Once the researcher managed to secure an interview session with respondents for conducting interviews, a letter containing the RMIT University consent letter as well as Interview Guide (Appendix C) was sent to interviewees. These documents were sent to interviewees prior to their interview sessions to ensure their understanding of the subject matter of research before the research conduct the interview. Moreover, interviewees prepared all the necessary information related to interview questions as mentioned in the Interview Guide.

(d) Arranging interviews
Before contacting the interviewees, several issues were discussed prior to the interview sessions, specifically in regards to resources (e.g. time, location, costs) available in performing the interview. First, the researcher expected that the time taken for the interview session to be approximately 45 minutes to one hour based on the pilot study. This was crucial as most participants considered that ‘Time is money’ and might decline to participate if the time taken for the interview affected their business routine activities (Ghauri & Grønhaug 2005). In fact, throughout the conduct of the main qualitative study, three potential interviewees declined to participate due to time constraint and other business commitments at the very last minute. This was really frustrating, yet this taught the researcher to be more prepared in dealing with this kind of situation. There was one situation where the researcher needed to wait for almost four hours in a coffee shop in order to interview one respondent due to his hectic life and other business commitment. Nonetheless, eventually the interview outcome proved very informative and he even recommended one of his business partners to be a potential interviewee.
Secondly, the arrangement of the interview would also need to consider the venue or location of the interview session. For this study, the researcher covered two federal territories; Kuala Lumpur and Putrajaya, and three main states in Malaysia; Selangor, Malacca and Johor. The interviews were normally conducted at either participant’s business premises or coffee shops. Being aware of the tight schedule of the respondents, the final decision of location and time of an interview session was made with the participants, even though these matters were initially proposed by the researcher.

(e) Conducting the interviews

The success of the semi-structured interview method relies upon the skills of interviewer in facing a number of difficult field decisions, specifically in ensuring the validity and reliability of the research data collected. Thus, thorough training is one thing that needs to be considered by the interviewer before collecting or conducting the interview. As recommended by Barriball and While (1994), the researcher employed two strategies in preparing himself to conduct the interview. First, the researcher tried to fully understand the interview schedule and gain competence by doing an extensive review of the existing literature on business survival or continuity and different factors that might affect the sustainability of Bumiputera NTBSFs. Secondly, it helped the researcher to identify and be aware of the errors or bias that might occur with the personal interview technique. Furthermore, before conducting interviews for the main qualitative study, ten preliminary interviews were implemented with the Bumiputera technology entrepreneurs to help contextualise preliminary ideas on the each topic uncovered in this thesis.

The consent form was signed by the interviewees before the start of the interview in order to demonstrate informed consent by the participants. Interviews were conducted using both English and Malay as medium of conversation. Further, semi-structured interviews that consisted of open-ended questions were conducted with all interviewees in this study. The interview questions were designed to stimulate respondents to share their opinions and comments on factors influencing business sustainability of Malaysian Indigenous NTBSFs. The researcher would ask the same questions of all the interviewees, yet not necessarily in the same order as the outlined questions were supplemented by either planned or unplanned probing questions (Richards & Morse 2007). As a result, the discussion that went beyond the interview guide was also asked in order to get the in-depth information as well as identify any emerging themes.
All interviews took place in participants’ offices and the interviews lasted between 45 and 90 minutes. Nine interviews were conducted in Malay in order to ensure interviewees’ ability to communicate effectively and steer clear of any misunderstanding by having to converse in a language with which they were less familiar (Bryman & Bell 2007).

(f) Recording the interviews
In this thesis, all interviews were conducted by using an MP3 digital recorder. Each participant granted permission for the audio-taping of the interview sessions. The employment of a digital device in recording all interview conversations was chosen because the recorded interviews could be stored, archived and transmitted electronically. Moreover, the usage of this device allowed greater flexibility in conducting interview sessions as the researcher could concentrate on the participants’ answers and responses without any distraction. As a result, the researcher could also maintain the interview focus and pose several probing questions to obtain in-depth insights and rich dialogue with the interviewees. In fact, by taking notes only during the interview instead of also making recordings, would not be sufficiently accurate or detailed for most qualitative projects (Bailey 2008) and would disturb the concentration during the conduct of an interview.

Upon the completion of the interview session, the recording files were transferred to a laptop that allows the researcher to listen and transcribe the interviews simultaneously. On top of that, the researcher also save the recording files at an external hard disk for the back-up purposes.

The two-stage data collection process will be discussed in the next section.

4.6.2 Exploratory Qualitative Study
An exploratory study was conducted prior to the actual data collection exercise. This exploratory study was implemented from March 15, 2010 until April 8, 2010. It took approximately four weeks to complete each interview with 10 participants, who were all technology-based Bumiputera entrepreneurs.

The specific purpose of the pilot study was to provide the researcher with relevant information that could be used in designing and structuring interview questions and to assist the researcher in refining interview, data collection and data analysis techniques that
were to be utilised in the formal study (Pickard 1989). The implementation of an exploratory pilot study prior to the field work was based on four main justifications:

a) To provide room for improvement in developing research skills and confidence and thus, enhancing self-reflection as a researcher to conduct interviews, transcribe and analyse. Moreover, pilot interviews help in understanding oneself as a researcher (Marshall & Rossman 2011)

b) To test the researcher’s assumptions in relation to the conceptual framework generated in the Chapter 3.

c) To get feedback on how well the instrument developed (interview questions) in terms of clarity of wording, sequence and layout

d) To develop, refine and/or test measurement tools and procedures (Kumar 2005)

The initial data of entrepreneurs for this exploratory study was obtained from the online business directories from both the SME Corporation and the Malaysia Development Corporation (MDeC). One hundred and four invitation emails were sent to Bumiputera NTBSFs. Forty-three of the emails sent bounced back and only 11 entrepreneurs responded back with 10 agreeing to participate in this study. Nevertheless, this exploratory study employed a small sample based on two justifications. First, the purposive sampling provided the researcher information-rich cases (Zhao 2005). Second, this sampling type is useful in describing a phenomenon or developing something about which only little is known. Based on purposive sampling, the sample is chosen based on our judgment of respondents who can provide the best information to achieve the objectives of this study (Kumar 2005). Based on these justifications, only ten technology-based firms owned by Indigenous entrepreneurs were chosen. These firms are highly relevant to be included in this exploratory study since the age of the firms’ operating life is less than eight years.

A semi-structured interview with a founding entrepreneur from each firm was conducted. All the interviews were conducted in a mixture of English and Malay. All interviews were recorded and later transcribed and coded manually. Content analysis was used to process and analyse the original text of company documents and the transcripts of interview conducted. The interviews were semi-structured and the questions were divided into five main sections.
4.6.3 The In-Depth Interviews

The purpose of the in-depth semi-structured interview was to uncover factors influencing the sustainability in business amongst Malaysia Bumiputera NTBSFs, specifically from the three main perspectives: founder-specific factors, firm-specific resources and government support and assistances. This is conducted during the Stage 2 of this thesis.

The Stage 2 of qualitative data collection was implemented in two different phases, Phase 1 and Phase 2. Phase 1 was conducted from 01 November 2010 until 18 December 2010 amongst 41 participants. Yet, due to insufficient data collection during Phase 1, Phase 2 was conducted in March 2011 amongst three biotechnology entrepreneurs.

During Phase 1, four main groups of participants had been approached. They comprised government servants, academics, policy makers and technology-based entrepreneurs. For government bodies, boards of top executives or officials were the main sources for data collection. These top executives were selected due to their experience and knowledge in managing entrepreneurial development programs in Malaysia. Moreover, this group normally has a close relationship with technology entrepreneurs, especially in terms of project supervision and financial assistance. As such, nine government officers were approached to be interviewed. The second group of participants was selected from a group of academics. Four academics were selected based on their experience in conducting entrepreneurship and small business research, such as in business information technology (IT) incubation programs to explore characteristics of young technology ventures in Malaysia. The third group of participants comprised policy makers, where two policy makers were selected based on their positions in a government and roles in the development of entrepreneurship.

Technology entrepreneurs were the main source for this study. The selection of technology entrepreneurs was based on the duration of their business operations as well as the category of their business sectors, which will be technology-based. Government agencies such as the SME Corporation, MARA, and MIDA have a directory for entrepreneurship, which was pertinent for the researcher to obtain relevant contacts for technology entrepreneurs. Furthermore, this research will focus on NTBSFs, thus most participants in this group were filtered to companies that have been operating less than eight years. Yet, several established companies (more than eight years in operation) were also considered as
they had survived the early stages of business development. There were 29 technology entrepreneurs interviewed for this study, but the researcher selected only 24 of them to accurately represent Bumiputera entrepreneurs who were operating a new technology-based business as outlined in Section 4.6.1 (b), as shown in Appendix E. All participants were operating a technology-based business less than eight year’s old and employing less than 20 full-time employees.

Table 4.1: Purposive Sampling for Main Qualitative Study

<table>
<thead>
<tr>
<th>Participants</th>
<th>Total Number</th>
<th>Phase</th>
<th>Special Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology Entrepreneurs</td>
<td>Twenty four</td>
<td>Phase I and Phase II</td>
<td>Those entrepreneurs who are in technology-based sectors within one to eight years in business operation</td>
</tr>
<tr>
<td>Governments Bodies</td>
<td>Nine</td>
<td>Phase I</td>
<td>Government officers who are responsible for any technology entrepreneurship programs or policies</td>
</tr>
<tr>
<td>Academics</td>
<td>Four</td>
<td>Phase I</td>
<td>Academics who specialised in technology entrepreneurship or/and general entrepreneurship</td>
</tr>
<tr>
<td>Policy makers</td>
<td>Two</td>
<td>Phase I</td>
<td>Policy makers who directly involved in the entrepreneurship activities</td>
</tr>
</tbody>
</table>

4.7 DATA ANALYSIS AND INTERPRETATION

The process of data analysis may take many forms of analysis, particularly in preparing the analysis data, reconstructing the data into a ‘recognisable reality’ for research participants, representing the data and making an interpretation of the meaning of the data (Maykut & Morehouse 1994; Creswell 2009). Due to many different forms of analysis available, King and Horrocks (2010) recommend that in analysing data from qualitative data, specifically from interviews transcripts, a researcher should choose between approaches that strongly emphasise language and those that are more focused on the content of what participants have to say. In addition, the selection of individual techniques of qualitative data analysis may be dependent on several factors such as the type of qualitative data, the analysis objectives, data availability and resources in analysing the data, including the cost involved and time constraint (Crowther & Lancaster 2009).

The qualitative data analysis conducted in this thesis was a nonmathematical analytical approach, where the researcher investigated the meaning of participants’ words and behaviours (Maykut & Morehouse 1994) or making sense out of documentary text and
image data (Creswell 2009). Therefore, the researcher is more concerned with understanding participants’ lived experience from their own position as it were. In this respect, the researcher employed the six-step of qualitative data analysis proposed by Creswell (2009) in order to analyse and interpret qualitative data.

There is a substantial amount of qualitative data that has been collected in this thesis that requires the researcher to analyse and interpret thoroughly the data, especially in choosing the most relevant data and transform the relevant into meaningful information to understand the phenomenon being studied (Cavana et al. 2001). This process started with transcribing interview records, followed by coding the transcripts that will be discussed in the following section.

**Figure 4.4: Organising and Preparing Qualitative Data Analysis**

<table>
<thead>
<tr>
<th>Step 1: Organising and preparing the data for analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 2: Reading through all the data for generating general idea</td>
</tr>
<tr>
<td>Step 3: Coding the Data</td>
</tr>
<tr>
<td>Step 4: Generating a description of categories or themes from the coded data</td>
</tr>
<tr>
<td>Step 5: Representing the description and themes in the qualitative narratives</td>
</tr>
<tr>
<td>Step 6: Interpretation of the Data</td>
</tr>
</tbody>
</table>

Source: Adapted from Creswell (2009)

**4.7.1 Transcribing of Data**

After each interview session, the transcription of the interview data was done. Transcription of a research data refers to a process of listening to a recorded interview and then converting the voice conversation into a text document (Bernard & Ryan 2010). The preparation of a complete transcript interview from each audio-taped interview is considered important in qualitative research (Maykut & Morehouse 1994), specifically to ease the process of analysing the research data in the latter stage. In fact, the conversion of
audio-tape interviews into digital text is an interpretive process that involves making initial judgments of the research data and this is considerably the first step in implementing systematic analysis of a qualitative research (Bailey 2008; Bernard & Ryan 2010). The implementation of the transcription process also helped the researcher to not only identify the keywords spoken by interviewees, but also to consider the tone and expression of the interviewees. This is because the transcription process would help the researcher to recall important behaviours of interviewees that were not captured by the tape recorder (Maykut & Morehouse 1994).

All the recorded interviews were transcribed over 18 weeks period and in certain cases, translation was needed. On average, 8-11 hours were required per interview and the transcription ranged from 12-18 pages. In doing the transcription process, all the transcriptions were made by the researcher. This is because making one’s own transcripts gives an opportunity to relive the interview and become substantially more familiar with the data (Maykut & Morehouse 1994). In practice, the researcher would listen to the audio file several times in order to get feel for the context and nuances they contained. Next, the interviews were transcribed and structured to analyse them more systematically (Bernard & Ryan 2010).

One of the ways to increase the context of the interview data was breaking the monologue into paragraphs, especially when the interviewee is talking for long segments of time (Maykut & Morehouse 1994). As some interviewees requested to conduct the interview either in both Malay and English, or fully in Malay (due to their inability to speak in English), the transcription was implemented in two different ways. Firstly, when an interview required either minimal or no translation, an audio file was listened to and transcribed word for word using a word processing program; and secondly, when sufficient data for analysis and coding was translated from a partial transcription of interviews that were conducted in Malay. Additionally, based on the field notes, which were written either during or after an interview, as well as other external information obtained pertaining to the participants, the researcher would also include some comments on meanings and contexts taken from the interviews. The transcript of each interview is preceded by a brief paragraph about the interviews conducted, particularly a description of the interviewee and a description of the physical setting in conducting the interview.
There are several voice recognition (VR) software programs such as the Windows Speech Recognition by Microsoft available in the market which may help any researcher to transcribe interviews (Bernard & Ryan 2010). Nevertheless, the researcher opted not to use this software as all the interviewees who participated in this study were not native English speakers, which would eventually affect the way they pronounced any English word; this which might be confusing and may not be recognised by this software. In practice, transcribing can be a time consuming and tedious job (Bryman & Bell 2007), nevertheless this process will eventually help the researcher to understand the conversation data and process the data in a meaningful information. Other problems faced by the researcher were audio recordings that were difficult to understand because of the recording quality (quiet volume and noise interference) and differing accents or styles of speech (Bailey 2008). To overcome this issue, the researcher would listen repeatedly until the context of the conversation could be understood.

Additionally, there were a few cases where the researcher would email or make a phone call to participants in order to seek clarification from them. Upon the completion of this transcription process, a vast amount of papers and pages had been generated, which the researcher had to wade through when analysing the data (Bryman & Bell 2007). Bailey (2008) also mentioned that transcribing audible talk into written transcripts requires reduction, interpretation and representation to make it meaningful. In this case, the researcher needed to spend time to ensure the quality of the written transcripts would eventually give some meaningful context, specifically in generating relevant themes that enable the researcher to answer the research question.

4.7.2 Coding the Research Data

The steps following the completion of the transcription process were to explore and identify relevant themes that emerged from the rich qualitative data and then to tag this data with the appropriate codes for those themes (Bernard & Ryan 2010). This process is known as the coding technique, which has long been considered the first step that a researcher should undertake in order to learn and organise the research data (Mayan 2009). The main purpose of coding the research data in this thesis was to generate initial ideas from the unstructured, raw research data (Richards & Morse 2007) and to draw attention to a commonality within a data set (Gibson & Brown 2009). In this respect, the researcher continued to examine and question the content of the interview statements in order to
identify key categories and themes (McMurray et al. 2004; Corbin & Strauss 2008) that led the researcher to explore core ideas and ultimately assisted the researcher with establishing and refining the framework of the research (Flick 2009).

Gibson and Brown (2009) proposed that there are two types of code: ‘a priori codes’ and ‘empirical codes’. A priori codes are developed before the examination of the current data. Therefore, the concepts or categories of the a priori codes might be derived from the review of literature, research questions or theoretical framework (Flick 2009). In contrast, empirical codes, also known as inductive codes, are generated through the researcher’s examination of the data itself. For this thesis, the researcher employed a combination of a priori codes generated from the theoretical frameworks and research propositions as well as inductive codes derived from the research data. The application of the a priori codes was chose due the flexibility given to the researcher in the early stage of data analysis as a training ground to develop the researcher’s confidence in coding the data (Boyatzis 1998). Meanwhile, the latter were created from the grounded theory approach of open coding (Corbin & Strauss 2008) with the purpose of refining the initial ideas from the theoretical framework. The implementation of empirical codes may also assist the researcher with identifying any unforeseen, interesting code in the a priori codes structured earlier where this helped the researcher to replicate, extend or refute prior findings (Boyatzis 1998).

The researcher employed the eight-step guideline suggested by Tesch (1990) for the coding process. As a start, the transcribed interviews and all printed documents were prepared for coding and analyses. Then, the interview transcripts were read completely several times. This iterative process allowed the researcher to find the data that answered the research questions and to begin the data coding process. The coding process in this thesis employed both a manual hand coding technique and computer software, specifically NVivo.

The application of the hand coding technique (a paper-based approach in this case) in the initial stage of the coding process enabled the researcher to feel more engaged with the research data and thus enabled the researcher to gain a more intimate understanding of it. Additionally, the paper-based approach provided room for creativity and flexibility in generating preliminary coding ideas (Flick 2009). These generated coding ideas were then transferred into the computer software for further analysis. NVivo Version 9 (later Version
10) was used in this thesis to manage qualitative data and ensure rigour in the analysis process (Bazeley 2007), as shown in Appendix F. Specifically, the interview transcripts were transferred to NVivo to facilitate and enhance the process of coding (Creswell 2009; Iacobucci & Rosa 2010). Utilising manual and NVivo approaches ensured that no interpretation of the data was overlooked. In addition, using the two techniques complement one another.

4.7.3 Data Analysis Methods

In this thesis, two main techniques of data analysis method were employed: thematic analysis and content analysis. The descriptions and application of these techniques will be discussed as follows:

a) Thematic analysis

The application of thematic analysis in qualitative research is commonly the fundamental concepts that have been identified from research data (Bernard & Ryan 2010) and which emerge as being important to describe the phenomenon under study (Fereday & Muir-Cochrane 2006). The researcher employed thematic analysis method to provide a structured way of understanding how to develop thematic codes and sense themes.

The employment of thematic analysis in this thesis was conducted based on six phases of thematic analysis as recommended by Braun and Clarke (2006): (1) data familiarisation; (2) initial codes generations; (3) themes searching; themes reviewing; defining and naming themes; and producing the report. In implementing this analysis, the researcher also adopted three stages of coding processes as proposed by Corbin and Strauss (2008): open coding, axial coding and selective coding to enhance the thematic analysis in this thesis. In the first phase, the researcher sought to familiarise the interview transcripts and field notes through an open coding process. In this process, the researcher tried to understand any themes that emerged from the data by conceptualising line by line. This process eventually led to the second stage of the analysis that was the generation of initial nodes as illustrated in Figure 4.5. Nodes is a term used in NVivo that refers to concepts, processes, thought or ideas that derived from sources (research data or participants) (Edhlund 2011). The number of initial thematic nodes generated during the open coding stage was 301, whereby most themes were emerged during the familiarisation process, though the researcher have made general a priori codes before starting to analyse the sources in the NVivo.
The next stage of coding process is axial coding, where this reflects the third and fourth thematic analysis phases; theme searching and theme reviewing. In these two phases, the researcher coded the data by grouping the themes that were similar or connected to each other in a patterned way (Buetow 2010). The classification of initial themes that emerged was refined and filtered based on the researcher’s judgment and intuition to ensure the generated themes accurately reflected the meaning in the data set and to provide a correct representation of participants’ views and experiences (Braun & Clarke 2006) on the factors that might influence the sustainability of Bumiputera NTBSFs. In addition, the researcher also sought opinions from his supervisors and other postgraduate students on the relevancy and importance of each theme to the phenomenon being studied as well as its link the theme with other previous studies. Besides, field notes from the interviews or memos were also used to help the researcher to refine the themes and to ensure the data were analysed consistently in this process.

Interestingly, through the NVivo’s interface, the researcher would also know the number of participants in general who were concerned on a particular theme or aspect by analysing the sources and references. In NVivo, sources refer to research materials (in this thesis referred as participants’ transcripts) and references refer the numbers of coding references coded for a particular node. If the number of sources or coding references for a node is too low, this would give an indicator to the researcher that the theme is considered not important from the participants’ perspective and could be merged with other themes or considered in the later stage of study or even deleted if the node is not relevant to the context in this thesis.
The last coding process is selective coding in which the researcher identified the core variables or themes that best explain the factors influencing the sustainability of Bumiputera NTBSFs. This process reflects the fifth and last process of thematic analysis in this thesis, whereby the researchers defined and classified the themes according to suitable names and produced the outcome report through the NVivo as shown in Figure 4.6. In this stage, themes were finally categorised according into three main themes; founder-specific factors, firm-specific resources and business support and assistances. In addition, the researcher has classified other themes that are not well-linked with the phenomenon understudied, but may be considered in the latter stage in this research as emerging nodes.

**Figure 4.6: Final Outcome of Coding in Thematic Analysis**

![Thematic Analysis Diagram]

The thematic analysis using the NVivo also enabled the researcher to develop the tree-structured indexing system as proposed by Richards and Richards (1991) in which themes in this thesis were developed based on hierarchical structure that makes up the ‘tree’. Interestingly, the concept of family values was also applied in tree index system where the node can be categorised as parent node and child node (Richards & Richards 1991). The single top category in the analysis is the parent node (a root), whilst other categories that are linked immediately below the parent node are called child node. ‘Siblings’ nodes are also used to refer the children of the children nodes in the analysis. The red box in Figure 4.6 shows that the application of these concepts can be exemplified from the Founders’ Human Capital node that is a child node for Founder-Specific Aspects node. It was then
broken down into several child nodes such as the investment of human capital node, which comprised the formal educational background node and previous work experiences node.

To enhance the data analysis in this thesis, the content analysis technique is also employed and will be discussed in the next section.

**b) Content analysis**

Having identified the important themes that helped the researcher to understand factors that influence the sustainability of Bumiputera NTBSF through the thematic analysis as discussed earlier, the application of content analysis is also employed to focus on the manifestation of relevant themes that relate to the thesis framework and to guard the researcher against any pitfall that occurs via the selection perception process (McMurray et al. 2004). Generally, the content analysis is an attempt to quantify qualitative data by noting frequencies of events, words, action and other variables related to research data (Crowther & Lancaster 2009). This analysis is also referred to as the constant comparative method in qualitative analysis (Glaser 1965) that suggests the analyst convert qualitative data into quantifiable form in order to develop evidence for a given proposition.

Hence, the application of constant comparative method or content analysis in this thesis aims to contribute to the refinement of identified themes by conceptualising the phenomenon understudied and patterning of the data (Boeije 2002) in order to provide an answer to this thesis’s research question. For instance, the representation the description and themes in the qualitative narratives was conducted through content analysis method by using NVivo, whereby the generation of NVivo coding queries from the research data has assisted the researcher to identify which factors have been cited most by the participants by looking at each theme’s sources and coding references. From this process, the importance of each theme or factor can be well-understood. Additionally, the generation of NVivo matrix-coding queries assisted the researcher to compare connections and contradictions between the identified themes in this thesis (Bazeley 2007). To illustrate this, the researcher created business networking approaches matrix-coding query as shown in Figure 4.7 to examine the different approaches practised by Bumiputera entrepreneurs in three different industries; ICT, Biotechnology and other technologies. From this analysis, the researcher can see the least approach practised by Bumiputera biotechnology entrepreneurs is business association membership. This can be related to the development
of the biotechnology industry in Malaysia, which is a new emerging industry and low Bumiputera participation in that industry compared with other technology-based industries.

Figure 4.7: An Example of Matrix-Coding Query Analysis

4.8 RESEARCH CREDIBILITY

Research credibility issues, particularly ensuring the reliability and validity of this thesis, were treated as important concepts for attaining rigor and trustworthiness of the research findings (Morse, Barrett, Mayan, Olson & Spiers 2002; Mayan 2009; Rossman & Rallis 2012). This is because the truth uncovered in a qualitative research is relative, based on the subjectivity of a researcher’s perspectives (Kuhn 1962). This eventually led to sceptical views in regard to the objectivity of any method used in the qualitative research (Patton 2002). For instance, Smith (1984) contends that the concepts of reliability and validity that are commonly applied in quantitative research should be revisited in the qualitative research due to interpretive views of what constitutes a reality. This could be explained in terms of multiple paradigms employed in the qualitative research, in which Rolfe (2006) argues that there is no standard criteria for judging quality and rigor in qualitative research.

Moreover, the application of the realism paradigm in this thesis has guided the researcher to be aware that there is a real world to explore in order to further understand the real meaning of the phenomenon investigated, in spite of the fact that the reality may be imperfectly understandable (Healy & Perry 2000) and to expect challenges to articulate the trustworthiness of this research in a condensed form (Wigren 2007). Having realised this setback, Kirk and Miller (1986) suggested that the objectivity of a piece of qualitative
research should be assessed from both reliability and validity of the study undertaken. Generally, the issues of attaining validity and reliability within qualitative research are as important as within quantitative research, though the way of doing this might be relatively different (Brock-Utne 1996). Further, scholars suggested that the term credibility and trustworthiness are frequently adopted and more applicable in the qualitative research instead of terms validity and reliability in the quantitative research (Lincoln & Guba 1985; Guba & Lincoln 1989; Long & Johnson 2000; Winter 2000). The latter terms are essentially embedded in a positivist epistemology (Golafshani 2003) rather than concerned with subjective reality of ‘truth’ in the post-positivist paradigm (Guba & Lincoln 1989; Winter 2000).

Additionally, the application of different paradigms and subjective views in studying a specific phenomenon in qualitative research would likely require different criteria for each social setting (Trochim 2001). Qualitative researchers were advised to select a set of systematic tests or standard of research quality which is clear and uncontested in order to enhance rigor and avoid any damaging aspect of conducting qualitative research (Mayan 2009; Rossman & Rallis 2012). In this respect, the evaluation of research credibility and trustworthiness in the qualitative research emphasizes four key criteria: credibility, transferability, dependability, and confirmability (Morse et al. 2002). These criteria are reflected to internal validity, external validity, reliability, and objectivity, respectively, in quantitative research (Nastasi & Schensul 2005). Table 4.2 lists the analogous quantitative criteria and the proposed criteria for assessing the credibility that was adopted from Trochim (2001) and Lincoln and Guba (1986) for this thesis. Several strategies of addressing validity, reliability and objectivity in this thesis will be discussed in the following section.
Table 4.2: Four Criteria of Trustworthiness Concept

<table>
<thead>
<tr>
<th>Traditional Criteria</th>
<th>Alternative Criteria</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Validity</td>
<td>Credibility</td>
<td>The results of qualitative research are credible or believable from the perspective of the research participants.</td>
</tr>
<tr>
<td>External Validity</td>
<td>Transferability</td>
<td>The results of qualitative research can be generalised and transferred to other contexts or social settings.</td>
</tr>
<tr>
<td>Reliability</td>
<td>Dependability</td>
<td>The results of qualitative research can be replicated and modified (enhanced) in other research contexts.</td>
</tr>
<tr>
<td>Objectivity</td>
<td>Confirmability</td>
<td>The degree to which the results of qualitative research could be confirmed or corroborated by others.</td>
</tr>
</tbody>
</table>


4.8.1 Addressing Research Credibility and Transferability

The concept of validity in this qualitative research in this thesis was tested by addressing two issues: internal validity and external validity. As described in Table 4.2, internal validity (research credibility) places emphasis on the ability of the researcher to ensure there is a good match between researchers’ data and the theoretical frameworks developed in the research (Bryman 2008; Hesse-Biber & Leavy 2011). More importantly, the implementation of research credibility in this thesis was to ensure that the participants’ views fit with the researcher’s reconstruction and findings (Wigren 2007). Therefore, several strategies were conducted by the researcher in order to enhance the credibility of this thesis. One such strategy is through the implementation of a systematic coding process that follows a pattern matching strategy as proposed by Yin (2009). Through this process, the researcher made a comparative analysis to see any supporting or contradictory views between the themes or subthemes that emerged in the analysis and the existing themes or constructs determined in the review of literature, initial conceptual framework as well as findings in the preliminary study (Eisenhardt 1989). The respondent or member validation is another strategy employed to establish the credibility of this thesis is thorough (Bryman 2008). The researcher sought opinions or confirmation from his academic colleagues, experts and participants to ensure there was a correct interpretation of the research findings and others’ perspectives.

The external validity (research transferability) questions the degree to which the research findings can be generalised to other social settings, specifically in relation to the
application of findings to other contexts in a wider population as well as to some broader theory (Winter 2000; Yin 2009). The qualitative methodology realism paradigm has been criticised for lacking statistical generalisation compared with survey research methods in quantitate research (Yin 2009). Nevertheless, Hesse-Biber and Leavy (2011) argue that the application of the qualitative-realism approach is rich in analytical generalisations, specifically through thematic analysis as well as rich description of the findings that commonly deal with purposively small selected samples (Bryman 2008). To realise this, the researcher has adopted purposive sampling as recommended by Cavana et al. (2001) in which this thesis is focusing on Bumiputera entrepreneurs in the technology-based industry. Additionally, the researcher would ensure that the evidence of findings reported in this thesis is rich enough for others to apply (Miles & Huberman 1994; Bryman 2008), specifically based on theories and previous studies that provide rich explanations for the researcher to compare the generated findings with theoretical ideas by using a replication logic strategy. Lastly, the research has employed an embedded ‘multiple industry-multiple sample’ design (Yin 2009) where the participants comprised entrepreneurs from various technology-based industries such as IT and Biotechnology, government agencies and academics.

4.8.2 Addressing Dependability

Research dependability in this research is defined as the demonstration of research process or operations that can be replicated with the same results (Yin 2009). The researcher has carefully elaborated which qualitative procedures have been used, specifically the research design conforming to the selected research paradigm as proposed by Cavana et al. (2001) and employing a specially designed case study database using all original data from interviews and other sources as suggested by Yin (2009). In addition, other strategies to enhance research dependability employed in this thesis were:

a) The design of an interview guide as recommended by Flick (2009) was adopted for both stages to ensure all participants underwent the same procedure during the interview sessions;

b) The methods of data collection, as described precisely in section 4.3

c) The organisation and preparation of data analysis were in line with steps suggested by Creswell (2009), whereby the coding process was implemented through the application of NVivo software using a technique as recommended by Gibson and Brown (2009).
4.9 ETHICAL CONSIDERATIONS

The application of moral principles and values in planning, conducting and reporting the result of research studies is considered important to attend to ethical issues in conducting research (Myers 2009). This is because ethical practices are regarded as a moral stance that entails honesty, respect and protection for rights of the individual respondents in the research (Ticehurst & Veal 2000; Payne & Payne 2004). Therefore, ethical consideration was given to these prior to data collection.

An application for ethical approval was submitted and approved by the Business College Human Ethics Advisory Network of the RMIT University dated 21 October 2009 (see Appendix G). This approval had been granted for the period from 19 October 2009 to 21 July 2012. Permission was also sought and granted from the Economic Planning Unit (EPU) of Malaysia, an agency under the Prime Minister’s Department (see Appendix H).

4.10 SUMMARY

This chapter recognises the importance of having a rigorous methodology in conducting research. The research methodology employed in this thesis has led to the exploration of factors influencing the sustainability of Bumiputera NTBSFs and the roles of business stakeholders in helping the firms to sustain their business. An inductive qualitative study was employed in this thesis, whereby this thesis adapted the ‘multiple stories milieu explorations paradigm’ to conduct a case-study as suggested by Perren and Ram (2004, p.89) in order to have a deeper understanding of the meaning that emerged from different types of social actors participated in the study. The research data were collected in a two-stage study (pilot study and main study), whereby the employment of semi-structured interviews as well as another two methods (document analysis and field notes) guided the researcher to gather reliable information. Then, all interviews were transcribed and coded by employing the eight-step guideline suggested by Tesch (1990) for the coding process. In this respect, two main techniques of data analysis method were employed; thematic analysis and content analysis. Both coding and analyses process for this thesis were conducted by using hand coding technique and NVivo software in order to ensure that all the data was systematically analysed.

The next chapter presents the analysis of the founder-specific factors towards the sustainability of Bumiputera NTBSFs.
CHAPTER FIVE

ANALYSIS: FOUNDER-SPECIFIC FACTORS

5.0 INTRODUCTION

This chapter elaborates upon founder-specific factors uncovered from the employment of both thematic and content analyses through the generation of matrix-coding queries from the NVivo software. Importantly, this analysis section answers the first sub-research question of this thesis: ‘To what extent have the founder-specific factors impacted upon the sustainability of Bumiputera NTBSFs?’ Three main aspects of founder-specific factors are investigated in this chapter: founder’s human capital aspects, founder’s social capital aspects and founder attributes and personalities. Each of these aspects will be further analysed in regard to their contributing roles towards the sustainability of Bumiputera NTBSFs in business. Attention will be paid specifically to interpret ‘why’ the participants suggested their views on particular aspects towards sustainable business; uncovering ‘how’ the participants took any probable strategy to achieve that objective.

5.1 FOUNDER ATTRIBUTES

The first aspect of the founder-specific factors investigated in this thesis is that of founder attributes, whereby the founder-specific attributes theme is defined as being personal attributes or characteristics of a business founder. As shown in Figure 5.1, two constructs have emerged from the NVivo’s thematic analysis, explaining the contributing roles of the founder attributes towards sustainable business.

Figure 5.1: Founder Attributes Thematic Analysis Model

The first part of the founder attributes thematic analysis explores the founder’s entrepreneurial motivation aspects that led them to venture into a business and sustain their technology-based businesses. The second part of this section then discusses several
entrepreneurial personality attributes uncovered from the entrepreneurs that might lead to the sustainability of Bumiputera NTBSF.

5.1.1 Entrepreneurial Motivations

In this section, the participants’ entrepreneurial motivations are discussed in order to uncover the main motives which led them to become entrepreneurs and venture into a technology-based business. During the interview, the researcher asked the participants the following: Q4: ‘What are the main motivational factors that drove you to quit your previous job and become an entrepreneur?’ and Q5: ‘What made you enter the technology-based industry?’ The interviews revealed a number of motivational factors that drove the participants to become entrepreneurs. Entrepreneurial motivations mentioned by the participants may be driven from either intrinsic or extrinsic factors. Through thematic analysis, as shown in Figure 5.2, four sub-themes underpinned the intrinsic motivations, while three sub-themes underpinned the extrinsic motivations.

Figure 5.2: Entrepreneurial Motivations Thematic Analysis Model

(a) Intrinsic Motivating Factors

Table 5.1 shows four intrinsic motivating factors that influenced the participants to venture into a business. These are: (a) love of challenge, (b) perceived level of freedom, (c) desire to help society, and (d) aspiration to start a business at a young age.
Table 5.1: Intrinsic Motivating Factors

<table>
<thead>
<tr>
<th>Matrix Coding Query</th>
<th>Love of Challenge</th>
<th>Perceived Level of Freedom</th>
<th>Desire to Help Society</th>
<th>Start a business at young age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sources</td>
<td>11</td>
<td>8</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Coding References (CRs)</td>
<td>16</td>
<td>9</td>
<td>9</td>
<td>5</td>
</tr>
</tbody>
</table>

The content analysis revealed that the first intrinsic motivating factor which emerged (as suggested by eleven participants) is the desire to take up a challenge. Generally, venturing into the entrepreneurial field is a challenging task experienced by entrepreneurs. This specifically involves adapting themselves to ‘chaotic’ and uncertain business environments. Several entrepreneurs perceived choosing entrepreneurship as their future career and leaving their previous job as a tough and risky decision that they had to make (ICT2, ICT15, and BIO6). For instance, the transitional process involved in quitting their previous jobs to become an entrepreneur presented several challenges for the entrepreneur. ICT 10 stated: ‘When I quit my job as a government servant, I gave full commitment to my family. Then, when I started this business, it’s become a challenge for me. My life has become hectic nowadays as an entrepreneur’.

Despite the perceived challenges commented on by several participants, other participants contended that the love of a challenge stimulated their entrepreneurial actions to take moderate levels of risk by starting their own businesses (ICT11 and ICT13). Participant ICT13 stated: ‘No one asked me to become an entrepreneur. This is my only dream and I chose this career as this is the toughest job in the world’. Moreover, by making the decision to quit their previous jobs, entrepreneurs feel that it is a significant challenge to prove to others that they can create their own business success (ICT12). Interestingly, the decision to venture into technology-based industries has also been viewed by participants as proving to society that the Bumiputera technology firms could be just as successful as other non-Bumiputera technology firms in the economy (ICT4, ICT9, BIO3 and BIO6). For example, Participant BIO6 stated: ‘My motivation to venture into biotechnology business is to answer the question of why the Chinese can do it (success in business), when we Malays could not’.

The second intrinsic motivating factor is the desire to achieve a level of freedom in their career-life. In this respect, the decision to venture into a business would be influenced by
the participants’ views on the freedom of making decisions without the need to refer to any superior in the organisation (ICT1, ICT15 and BIO2). Entrepreneurs are individuals with insightful visions and have the desire to be independent in making their own decisions in order to fulfil their entrepreneurial goals (ICT11). Hence, the freedom of decision-making through venturing into their own business could provide an opportunity for participants to freely express and execute any innovative idea which does not need pre-approval, nor is unlikely to be rejected by anyone (ICT4). Indeed, the level of freedom gained by the entrepreneurs in doing business would eventually lead to a feeling of self-satisfaction. Participant ICT5 supported this view by saying that: ‘I like freedom and being self-employed is a better job career for me. Even though sometimes you might face difficulties, you will enjoy the challenges because it is on your own efforts’.

The third intrinsic motivating factor is the desire to contribute to one’s own society. The motivation of creating and sustaining a business venture is based on perceived social responsibilities held by the entrepreneurs towards society. From the socioeconomic perspective, one of the main contributions towards society from the creation of entrepreneurial ventures might be seen in terms of an ability to generate job opportunities for other people. Participant ICT9 stated: ‘I have a vision to develop my own business and be able to provide employment opportunities for my people (the Malays)’. Interestingly, an entrepreneurial venture is also seen by participants as a social obligation from a religious perspective, specifically in sharing their wealth or knowledge with other people. Participant ICT6 explained: ‘Allah (God) gives me strength to manage this business. When other people need my help, I would try my best to help them. For me, the wealth does not come from me, it is from Allah.’ Besides the wealth contribution, some participants (ICT6, ICT10 and ICT14) also have a desire to share knowledge with other people via their business venture. For instance, Participant ICT10 stated that one of her main motivations in venturing into business was to teach other people to learn the Quran (religious text for Muslims) by inventing a prototype of an e-learning application via computer-aided learning. She proposed:

As a Muslim entrepreneur, we need to feel that our intention is not to develop this product and gain profit, but also our intention is to educate people in learning the Quran, and this intention gives me strength for us to move forward (ICT10).
The last intrinsic motivating factor, as suggested by four participants (ICT2, ICT11, ICT14 and BIO6), is the desire to start a business at a young age. Participant ICT 2 contended that the intention to start a business largely depends on the individual’s own choice. However, for youngsters to take a risk venturing into a business, this situation could result in a significant challenge for them. This is due to the lack of experience of the youngsters, as well as not having sufficient financial capital needed to start a business. Two young entrepreneurs (ICT 11 and ICT 14), who are aged less than 30 years old, suggested that the best time to start a business is at a young age. Participant ICT 11 stated:

One of the reasons why I wanted to become an entrepreneur is because I’m still young. If I quit my previous job and tried to venture into a new field and something bad happened to my business, I’m still young and could be able to venture into other jobs.

Additionally, Participant BIO6 commented that the level of debt borne by him at a young age, due to business venture activities, put pressure on him to work harder. Similarly, Participant ICT14 agreed: ‘I think… now is the best time to start and even if I have a debt, I feel that’s okay because in the future, I have time to recover and I will have time to pay off the debt’ (ICT14). Furthermore, Participant 14 has also justified that the action of venturing into a new business at a young age was made after considering that he was already prepared to take the challenge. In addition, his status as a single person indicates that he did not bear any heavy commitment, specifically marriage commitment.

(b) Extrinsic Motivating Factors

From another perspective, the analyses have also uncovered three extrinsic motivating factors as shown in Table 5.2: (a) social network influence, (b) monetary gain, and (c) problems or dissatisfactions with previous work.

<table>
<thead>
<tr>
<th>Sources</th>
<th>Social Network Influence</th>
<th>Monetary Gain</th>
<th>Problems or Dissatisfaction with Previous Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coding References (CRs)</td>
<td>10</td>
<td>10</td>
<td>6</td>
</tr>
</tbody>
</table>

The first extrinsic motivating factor identified is the influence of surrounding social networks, specifically parental role models and close friends. This factor has been stated
by nine entrepreneurs-participants in the interviews. The observation of individuals towards parental role models (who happen to be involved in entrepreneurial activities), as well as other successful entrepreneurs, would trigger thoughts and eventually lead them to choose entrepreneurship as a career preference (BIO2, BIO4 and OTH3). For instance, Participant ICT3 stated: ‘For fifteen years, I have been watching my parents running their own business. So, I was thinking why shouldn’t I start my own business’. The influence of an individual’s circle of friends might also impact upon the intention of venturing into a business. In this respect, Participant ICT2 believes that the learning process gained from his social networks was the ultimate driving factor that led to him towards an entrepreneurial start-up. The decision to venture into business was also influenced by his university friends who were already experienced in running their own businesses.

The second extrinsic motivating factor is monetary gain. The desire to attain personal wealth, particularly earning more money and achieving financial security has been regarded as important motivations for entrepreneurs to venture into a business (ICT5, BIO2 and OTH1). For instance, Participant ICT7 suggested that the income that he received from an entrepreneurial venture is considerably higher than the monthly fixed salary that he received whilst working for others. This view has also been supported by Participant ICT1, who mentioned that he was still doing a similar job to what he did when working for others. However, in contrast, all income generated from his current business belongs to him. Indeed, Participant BIO3 commented: ‘I trust that if I want to become rich, I have to venture into a business. Being employed by someone, you would only receive a fixed monthly salary’.

Moreover, the monetary aspect when operating an entrepreneurial venture is really pertinent in ensuring the growth and sustainability of a business. One participant stated: ‘If you have the money and you’re a Bumiputera entrepreneur, you can roam wild in this country and you should take that advantage’ (ICT14). Nevertheless, Participant ICT6 argued that money could not give one everything that they wanted. He stated that the main element for him to be able to operate a newly-established company is through spiritual strength. During the early stage of his business, he could not promise his staff any certain material-based rewards. He might, however, help them to boost their motivation and develop themselves in completing their tasks (ICT6).
The third extrinsic factor of venturing into business, as remarked upon by six participants, is driven from depressing situations faced by participants in their previous jobs. Participant ICT12 took a decision to quit her previous job after facing unpleasant circumstances, where she claimed that one of her colleagues defamed her in order to ruin her reputation in the company. As a result, she started a business with her husband in order to prove to others that she can be a successful person no matter what kind of job she ventures into. From other cases, several participants (ICT1 and ICT14) took a decision to quit their jobs and formed their own businesses after having felt that their efforts were not being rewarded accordingly by their employers. Meanwhile, in the case of Participant ICT8, he formed his own company after his previous employer ceased business. Due to this situation, he took an initiative to start his business whereby he decided to venture into a similar nature of business as his previous employment, since he already had the experience and contacts.

Another aspect that emerged from the analysis under the theme of entrepreneurial motivation is the entrepreneurs-participants venturing into a technology-based industry. This will be discussed in the following section.

(c) Reasons for Choosing Technology-Based Industries as a Field of Business

Starting an entrepreneurial venture requires individuals to be selective in choosing the type of industry that they want to venture into. This section explores five main reasons that have driven participants to venture into a technology-based industry (in Table 5.3).

Table 5.3: Choosing Technology-Based Industries as a Field of Business

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Coding References</td>
<td>13</td>
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The most striking result to emerge from the interviews is that over half of the participants felt that having related knowledge has encouraged them to venture into a technology-based company. Generally, the decision to embark into a particular field of business might be based on the available knowledge in the field (ICT4, ICT5, BIO3 and BIO5), and this is
evidenced by a quote from Participant ICT2: ‘We’re doing business based on the knowledge that we have. For example, you would only open a tailor shop if you know how to sew’. Similarly, few participants have suggested that the decision to venture into the technology-based industry is based on their technology-related knowledge. The creation and exploitation of technological knowledge via educational background would not only trigger individuals to venture into a technology-based business (ICT5), but also might assist entrepreneurs to operate their own business. Participant BIO2 stated: ‘Through my educational background in biotechnology, I have knowledge about microbes and it helps me to explain to my customers which bacteria are harmful to humans’.

Looking more closely at the relevance of related knowledge in driving entrepreneurs to venture into a technology-based business, a few participants have suggested that the adoption of this knowledge and other knowledge areas has not only assisted them to venture into a technology-based business, but also to develop a range of technology-based products. For example, Participant ICT9, who is fluent in Mandarin, gained an interest to invent in an electronic learning (e-learning) product that is called ‘Kwik Mandarin e-learning’ to teach Mandarin to non-native Mandarin speakers, specifically the Malays.

The perceived available opportunity in the technology-based industries is the second factor that has been proposed by twelve participants. The Malaysian government’s inspiration and efforts to increase its economic strength through technology-based industries, especially in terms of increased business development programs and grants, have sparked the interests of Bumiputera entrepreneurs to grab opportunities available in the technology-based industry. To illustrate this, Participant ICT14 who was a lawyer by practice, stated that he ventured into the IT Industry due to the conducive business environment of the industry which has been emphasized by the government as one of the industries that will lead Malaysia into a higher income base. Indeed, the establishment of several government agencies responsible for the direction and oversight of Malaysia’s technology-based industries have provided an avenue for start-ups and existing firms in the industry to seek assistance, especially via grant allocation and technology advisory support. This would eventually increase the entrepreneur’s ability to sustain their businesses through the enhancement of their new product or technology development. For instance, the assistance provided by the RRI (Rubber Research Institute) for R&D activities has motivated Participant BIO5 to venture into his own business, as evidenced in
the following quote: ‘The research outcomes that I initially got from the RRI have made me confident to venture into this market. Moreover, I did market research and found that there is nobody doing this business as yet’.

The third reason that motivates Bumiputera entrepreneurs to venture into the technology-based industry is their passion or interest in this field. This reason was proposed by ten respondents, whose interests in the technological field drove them to venture into the business. This can be interpreted in terms of the creative and innovative nature of technology-based businesses which have sparked the interest of participants to take a risk and venture into a business. Moreover, the interest in the technology field might also emerge from an individual’s experiences in using and applying any technology-based application or software. For example, having an in-depth interest in the Geographic Information System (GIS) field and having worked as a GIS consultant in a town planning company, Participant ICT12 had a vision to open her own consultancy company, specialising in GIS applications. She stated: ‘I have a big vision. I must have my own consultancy company and become an IT consultant in GIS application’ (ICT12). Indeed, this passion has driven her to continue her master degree in ICT entrepreneurship and eventually venture into an ICT-based business.

The fourth factor that motivates Bumiputera entrepreneurs to venture into the technology-based field is having related work experience in the technology-based industry. Generally, having a substantial level of technology-based project experience would provide entrepreneurs with a sense of confidence in their ability to venture into a business (ICT3, ICT10 and OTH2). For example, Participant ICT15 commented: ‘The main reason I opened my own ICT Company was because I had ten years of work experience in the IT field, such as managing an IT department and possessing technical know-how’. Additionally, Participant OTH2 stated that his experience working in a construction-based company provided an opportunity to build up his own business network, since some of his customers were drawn from the previous company. As a result of this, he felt he would not face any severe problems in venturing into this industry because he had gained sufficient technical knowledge in conjunction with knowing key people in the industry. Ironically, this finding also suggests that a lack of educational background in the technological field might be compensated for by a substantial level of work experience in the industry. This is because a few of the respondents (ICT8, ICT15 and BIO6) who remarked on this factor
did not actually come from a technology-based educational background and yet have been able to venture into a technology-based business due to their experience in the field.

The desire to provide new offerings or produce innovative products in the technology-based industry has also become the least reason why participants ventured into the business, as remarked upon by seven participants. In this regard, Participant OTH2, who is developing a new construction system, aims to provide a more efficient system in building offices for his customers. Meanwhile, in regard to the ICT field, the development of new offerings that are based on the advancement of ICT applications was identified by two participants (ICT9 and ICT10). For instance, Participant ICT9 stated that he intended to share his Mandarin knowledge with other people, specifically Malay native speakers. This led to the use of ICT applications and transformation into an innovative product that is known as ‘Kwik Mandarin e-learning’.

To encapsulate the motivations of the Bumiputera entrepreneurs to venture into the technology-based industry, Figure 5.3 illustrates a thematic analysis for founding entrepreneurs’ motivations to venture into a technology-based industry.

**Figure 5.3: Motivations to Venture into a Technology-Based Industry**

Having discussed the first theme underpinning the founder attributes, the next section will discuss the second theme that focuses on the founder’s entrepreneurial personalities and their resultant impacts upon a firm’s business sustainability.

**5.1.2 Entrepreneurial Personalities**

Generally, as discussed in Section 3.1.2, the possession of a combination of individual founder personalities could influence the sustainability of a business. There are seven main entrepreneurial personalities which have emerged from the interviews through the matrix coding in this thesis (Table 5.4).
Table 5.4: Entrepreneurial Personalities

<table>
<thead>
<tr>
<th>Seeking Business Opportunity</th>
<th>Spiritual Strengths</th>
<th>Hard-working</th>
<th>Risk Taking Propensity</th>
<th>Ability to Manage Failure or Problems</th>
<th>Strategic Planning</th>
<th>Passionate in Business</th>
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<td>Sources</td>
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The first entrepreneurial personality type to emerge from the analysis is the desire to seek and exploit business opportunities. This attribute has been suggested by twelve participants, explaining that the exploration of any business opportunity would create an impetus for the Bumiputera NTBSFs to sustain their businesses in the long-term. Participant OTH2 claimed: ‘I need to explore any business opportunity in order to sustain my business. If I didn’t do that, I couldn’t survive’ (OTH2). Furthermore, the fast pace of technological development in the industry requires entrepreneurs to be able to develop and exploit any business opportunity to sustain their businesses. Therefore, the entrepreneurs should be alert to any business opportunity available in the industry, especially by taking the initiative to explore business opportunities in the following ways: via business networking (ICT1, ICT9), collaboration with other organisations (ICT10) and doing a market survey (ICT4, BIO5 and BIO6).

As discussed in Section 5.3.1, half of entrepreneurs interviewed ventured into a business due to their perception of business opportunities available in the technology-based industries. In this respect, the participants urged that the provision of business projects or financial grants in specific industries by the government or other organisations should be exploited (ICT4, ICT10). They explained that this was particularly for the Bumiputera NTBSFs in order to explore more opportunities such as obtaining grants for the development of new products (ICT5). Eventually, this would also provide an opportunity for firms to leverage their positions in the market, as proposed by Participant ICT6: ‘In software development, there is a big opportunity. Thus, we must have the ability to develop our own products to benchmark us with others’.

The second important personality type to emerge from the interviews relates to participants possessing self-spiritual strength. In fact, eight participants suggested that this attribute would help them in sustaining their business. Having a spiritual faith in regard to the
relationship with God is considered as an important element for these entrepreneurs to sustain their businesses. This might be interpreted in terms of the level of enhancement of self-motivation and perseverance of an entrepreneur in conducting challenging business operations, as illustrated by this quote:

You never expect what is going to happen in operating your business. Thus, when you’re facing a problem where there is not a single person who can help you, so you need to ask God to help you and solve your problem. These things might help you to boost your level of motivation (ICT2).

In addition to self-motivation gained by the participants via their spiritual strength, some entrepreneurs stated they would also make any entrepreneurial decision based on their religious values. This emanated especially from Islamic values, as all the entrepreneurs-participants in this thesis are Muslims (including two converts). As an example, one of the values is the concept of ‘Rezki’ meaning bounty or wealth from God, as stated by Participant ICT1:

We need to appreciate the concept of ‘Rezki’ where we need to remember that all wealth is coming from God. As long as we put in effort and God says that there’s wealth for us, so it’s meant for us.’

Besides that, the entrepreneurial ventures of the entrepreneurs could also be viewed as manifestation of worship to God, especially in relation to the fulfilment of ‘Fardu Kifayah’ (social obligations) towards the ‘Ummah’ (society). With regard to this, products or services offered by entrepreneurs to customers could be translated as offering benefits to other people. For instance, Participant BIO4 noted:

The products that we offer are organic and natural because it is very rare amongst Malay Muslims to find someone doing this kind of job. I do this motivated by a concern with Fardu Kifayah as it’s kind of giving alternative products for Muslims which are Halal (permitted by religion), good and safe.

Being a hardworking person is the third personality trait that should be possessed by the Bumiputera entrepreneurs. The entrepreneurs should consistently put their efforts into developing their businesses in order to sustain them. For example, Participant ICT12 stated: ‘The entrepreneur must be hardworking and competent in their jobs and, by having these qualities, they can succeed’. Indeed, the personality trait of being hardworking is also
claimed by Participant ICT1 to be an important source of worth for the Bumiputera firms, in order to compete with other firms in the industry. Due to this, entrepreneurs should give their full commitment to doing the business, as Participant ICT11 suggested: ‘I do not want to put any limit on developing my business. I would work whole-heartedly because the more effort I put in to developing the business, the more I would be able to profit’.

The propensity to take risk has emerged as the fourth entrepreneurial personality trait that should be possessed by entrepreneurs in sustaining their business, as cited by seven entrepreneurs. Indeed, this quality has influenced the decision to venture into a business by the entrepreneurs who are characterised by their inclinations to take risks, as stated by Participant ICT9: ‘When I decided to become an entrepreneur, it’s actually a risk as I am not sure how much monthly income I could generate’. Additionally, the propensity to take risks by the entrepreneurs could also be interpreted as taking action in response to challenges (ICT14). In this respect, Participant ICT2 stated: ‘I didn’t have any income for the last two years before venturing into business. It’s a bit risky and sometimes it might be a challenge for you as well’.

Perhaps the perceived difficulties in operating a technology-based business present such a challenge for the Bumiputera NTBSFs to sustain a business, due to the domination from non-Bumiputera firms in the industry and the level of research intensity in the industry (BIO2). Paradoxically, Participant ICT4 viewed the propensity to take risks in doing business as a way to generate profits. According to this participant, the level of investment made by the entrepreneurs to venture into a business, especially in the innovative industry, could enable the provision of more opportunities and the possibility to generate higher income.

The fifth personality trait to emerge from the interviews emphasises the ability of entrepreneurs to overcome any problem in sustaining a business. Six entrepreneurs-participants have proposed that the ability to manage failure or problems in operating a business is vital to ensure the sustainability of their businesses. This is because of the uncertain business-lifecycle faced and limited resources possessed by the entrepreneurs. Good entrepreneurs who face difficulty could transform those hurdles into success (ICT2, ICT12 and BIO6) through persistence. Participant ICT2 explained: ‘When I proposed my
initial application software, the first version had been rejected but I didn’t give up until the application was successfully produced. I learned from the failure experience’.

The sixth personality trait that should be possessed by entrepreneurs is the ability to operate a business strategically, either in terms of entrepreneurial business mindsets or actions. The entrepreneurs should be objective in achieving their goals and have a proper plan in place to develop their business. In this regard, the entrepreneurs are required to direct their business operations by setting a firm’s strategic direction in order to sustain the business (BIO5). For example, Participant BIO6 advised: ‘The best way to sustain a business is you need to strategize your business for at least three years ahead. If you have less than three years the bank will not want to finance you’.

The last personality trait, mentioned by five participants, is having passion for the chosen business. This attribute could be interpreted in terms of the entrepreneurs’ depth of interests in entrepreneurial activities, as suggested by Participant ICT7: ‘The most important thing is your passion in entrepreneurship. If you have passion in entrepreneurship, you could be very good at selling and having effective communication with people and eventually you can gain success.

In the following section, an analysis of founder’s human capital towards sustainable business operations of the Bumiputera NTBSFs will be explored and discussed.

5.2 FOUNDER’S HUMAN CAPITAL

The second section of founder-specific factors analyses the contributing roles of a founder human capital towards the sustainability of Bumiputera NTBSFs. Based on the seminal studies by Becker (1962, 1964), the analyses will be separated into two main aspects of individual’s human capital, namely: (a) the investment of the human capital aspect, and (b) outcomes of the human capital investment aspect. As shown in Figure 5.4, the investment of founder’s human capital was investigated in terms of formal educational background and prior work experience possessed by the founder. Meanwhile, the outcomes of human capital investment were investigated for knowledge and skills possessed by the founding entrepreneurs.
5.2.1 The Investment of Founder’s Human Capital

In this thesis, the investment of founder’s human capital is examined against their educational background and prior work experience before the formation of their businesses.

a) Formal Educational Background

One of the measurements of human capital stock that is commonly employed by scholars is performed by examining each individual’s educational background. For this thesis, the context under examination was the entrepreneur’s level of education, particularly the respective fields of study undertaken by entrepreneurs in higher education institutions (e.g. universities). This section aims to explore the role of the entrepreneur’s educational background towards the sustainability of business amongst new technology-based ventures. In order to uncover this matter, the researcher referred to Question 1 and Question 17 as outlined in the interview protocol for this thesis. For instance, Question 1 asked the entrepreneurs to disclose to the researcher something about their educational background. Conversely, Question 17 was asked in order to obtain the participants’ opinion on the role of their educational background towards the sustainability of their business and justifications. These two questions will guide the structure of discussion for this section.

From the interviews, the majority of participants commented that a formal educational background played an important role and helped them in venturing into a business. For instance, Participant ICT9 mentioned, ‘I believe that what I’ve learned at the university has helped me to become an entrepreneur’. This is because the formal tertiary background possessed by the participants was considered as a ‘ticket’ to embarking into the real business world (ICT1). Nonetheless, two participants (ICT11 and ICT14) have contrary
opinions about this; both stated that their formal education was not really significant in assisting them to run their current business, as the following quotation demonstrates: ‘I read Law before in the UK and I do not think the study has assisted me in venturing into this business (ICT-based business)’ (ICT14).

In spite of disagreement on the importance of a formal education background towards business sustainability, Participant ICT14 stated that having a formal education in legal study has enabled him to be trained in a useful discipline. One of the early exposures to industry or beneficial values perceived by the participants was via their formal education background. A discussion on three contributing roles of a formal educational background towards business sustainability, as shown in Table 5.5 will be explained in the following section.

Table 5.5: Contributing Roles of Formal Educational Background

<table>
<thead>
<tr>
<th></th>
<th>Enhancement of Knowledge and Skills</th>
<th>Early exposure to the Industry and Business</th>
<th>Self-Development and Additional Values</th>
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The enhancement of knowledge, both basic knowledge and business management knowledge, is the first role played using the participants’ formal education background towards the sustainability of a business venture. Seventeen participants stated that the development of their fundamental knowledge of industry was gained through their formal academic background. Participant ICT1 commented: ‘What I learnt in the university was just learning the fundamental knowledge that would become a foundation for me to embark into the industry’.

This situation could be derived from several perspectives. First, four participants (ICT2, ICT3, ICT5 and ICT15) suggested that having enrolled in several management subjects at university (such as finance and entrepreneurship) had given them a basic idea on how to better plan and manage their business operations. For example, Participant ICT15 claimed that having learnt intermediate finance at university helped him to manage cash flow, which is a crucial aspect in sustaining his business. Second, the formal educational background of the participants may enhance their ability to make preliminary expectations on the real business scenario, which might assist them to strategize their business.
operations and to enhance their level of confidence to venture into a business. In this respect, Participant ICT2 stated his university life did not teach him everything about the real business scenario, yet the knowledge gained at the university has prepared him to face the real business world. Third, the participants’ formal educational backgrounds have also assisted them to develop skills in operating a business, especially with regard to entrepreneurial skills and networking skills. The enhancement of entrepreneurial skills amongst entrepreneurs would normally be learned through management courses undertaken in the university. This can be illustrated by a quote from Participant ICT5: ‘When I did my Master of IT Entrepreneurship, it provided a platform for me on which to develop several important business skills, such as preparing business proposals and how to develop a business’.

Additionally, university life may also provide an opportunity for the participants to build potential business networks, especially amongst their lecturers or fellow students. The evidence of this is reflected in the case of Participant ICT5, who appointed his ex-lecturer as his business consultant. Similarly, interviews revealed that many participants had also established businesses with fellow students (ICT 12 and ICT6). Moreover, socialisation amongst friends at university may also increase one’s ability to communicate with other people, especially amongst potential business partners and investors.

The second role of a formal educational background (that has been suggested by 12 participants) is to provide early exposure to industry before venturing into real business environments. In this respect, the early exposure to industry refers to any entrepreneurial value or experience received by the participants via their formal education, especially preparations or expectations before embarking on the business venture. Early exposures to industry via the participants’ formal educational background could also be obtained through the way the participants managed their study. In this regard, several participants (ICT1, ICT6 and ICT8) proposed that university life has helped them to develop important skills vital for their business survival. For example, participant ICT6 claimed that he learned the art of prioritising tasks and tackling tight deadlines through the assignments given by his lecturers. These experiences may be used in a current business scenario where the participants need to submit proposals to their prospective clients in a given timeline. From another aspect, the academic courses undertaken by the participants may also expose them to industry in several unique ways. For example, Participant ICT3, who undertook a
degree in international business studies, found that his academic background helped him to better understand the cultures and lifestyles of other people. This has increased his confidence when dealing with any potential business partners from foreign countries. He was previously selected by the Malaysian government to attend an ICT-based conference in Australia due to his knowledge about IT and other cultures. From the context of the Malaysian tertiary education system, the Industrial Training Policy (ITP) of the Ministry of Higher Education (MoHE) requires all final-year undergraduate students to undergo industrial training as interns with any company approved by the university. This policy aims to offer students an early exposure to the real job world in industry, as well as enhancing the theoretical and technical knowledge of the students. In this regard, Participant ICT6 perceived that the industrial training that he underwent provided him with many benefits, including the utilisation of the knowledge obtained. He further commented: ‘During the industrial training period in the university, I was assigned to do a full IT system and to deal with clients as well. With that experience, it helped to better understand the business world’ (ICT6).

The last role of a formal educational background towards business sustainability is the enhancement of one’s self-thought and maturity. At university, students are trained to think analytically and creatively in facing any issues. Indeed, the different levels of thought as a result of a formal educational background may be illustrated in terms of the ability of the participants to communicate with and convince their potential customers. For instance, Participant ICT7 contended that having a bachelor degree in a related field has helped him to deal with his customers or top executive in a company, who are mostly experienced and educated people. Likewise, Participant ICT4 suggested that having a master degree has boosted his confidence level in operating a business in the ICT industry. This may be related to the fact that his bachelor degree was in the discipline of physics, a non-IT field. Hence, possessing a master degree in the ICT field would enhance his ICT-based knowledge, as well as boosting his confidence in communicating with his customers and business partners. Interestingly, the diversity of fields of study in which participants enrolled served to enrich their experiences and knowledge in two different fields. For instance, Participant ICT12, who possesses an educational background in town planning and ICT, has developed a plantation management system for customers in the town planning business.
From these circumstances, the educational background has been shown to play an important role in assisting participants to sustain their businesses, regardless of their respective levels of tertiary education and fields of study. Nevertheless, some participants (ICT11, BIO6 and OTH1) claimed that having a good educational background per se is not enough to sustain a business without having relevant prior experience in the industry. To explain this, the contributory role of entrepreneurs’ prior work experience towards a sustainable business will be discussed in the next section.

b) Prior Work Experience
The present section is designed to explore contributing roles of founder’s prior work experience towards their business sustainability. In this thesis, the role of prior work experience towards sustainability in business was examined through questions, such as: ‘Q17: In sustaining your business operations, do you think that having solid working experience in the industry is important? And why do you think so?’ These questions uncovered entrepreneurs’ perceptions on the importance of prior work experiences and how these prior work experiences impact upon their business operations. Generally, the interviews revealed that the majority of respondents felt that having substantial prior work experience is essential in sustaining their business operations. From the interviews, five main justifications for the role of prior work experience have been generated from the matrix-coding query, as shown in Table 5.6.

Table 5.6: Contributing Roles of Prior Work Experience

<table>
<thead>
<tr>
<th></th>
<th>Business Management Capabilities and Exposures</th>
<th>Technical Knowledge and Skill Development</th>
<th>Development of Soft skills</th>
<th>Development of Business Networks</th>
<th>Identification of Business Opportunities and Ideas</th>
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<tr>
<td>Coding References</td>
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The first role of prior work experience in sustaining a business amongst the Bumiputera NTBSFs is the development of entrepreneurs’ business management capabilities and exposures, as suggested by 18 participants. Generally, the business management capabilities can be interpreted in term of capabilities of the entrepreneurs in managing business facets, such as financial aspects and customer relations.
Undeniably, the experience of entrepreneurs in implementing tasks and interacting with other people in previous companies had developed their abilities in sustaining a business. In this respect, Participant ICT6 stated: ‘By observing some managerial problems that occurred in my previous employment, this taught me to be more cautious in managing this business’. Similarly, two participants (ICT3 and ICT14) worked as business management consultants before forming their own company. They subsequently proposed that their prior experiences assisted them in handling managerial aspects of a business with minimal difficulty. This is because the real business exposure gained from their previous employment has trained them to identify any problem and to take corrective actions on problems when dealing with clients’ operational issues. Participant ICT3 stated: ‘Through my previous experience in dealing with clients, it makes me more aware of death spots of a company such as arrangement of business accounts. This helped me to tackle any problem which emerges in my company’.

From the interviews, the prior work experience of entrepreneurs has increased their capabilities in two main managerial aspects: human resources management and financial management. In practice, prior work experience has enabled entrepreneurs to better manage human resources by understanding their employees’ needs and satisfaction levels. Interestingly, Participant ICT15, who was the Head of an IT Support Department, stated that his prior work experience has not only developed his capabilities in handling technical aspects, but also in managing his technical staff by giving them proper training for doing their daily tasks. Moreover, an effective human resources management programme is crucial to retaining employees in the long-term. This is because when an employee resigns to work in another firm, this is a loss to the company as it might also affect its operational activities and employee turnover rate (ICT12).

Besides having a substantial level of human resource management capabilities, managing the financial aspects of a firm is also crucial for any entrepreneur in sustaining their business operations. Indeed, one of the major constraints faced by entrepreneurs is the lack of financial capital in operating the business due to their limited work experience. This could impede their ability to access financial capital. The finding showed that the new Bumiputera technology entrepreneurs have a relatively narrow social network that can assist them in accessing financial assistance. In addition, the ‘newness’ of these entrepreneurs in the industry was seen as a liability and created difficulties in convincing
potential investors to offer any financial assistance. Moreover, the inability of the entrepreneurs to provide any required collateral and track records to financial institutions may also limit their chances when applying for any credit facility. This would eventually limit the ability of entrepreneurs to undertake more ambitious technology-based projects. Participant ICT14 commented: ‘As a new company, the most problematic issue that we are facing is not having a proper track record to convince our potential investors’. Therefore, the capability to generate financial sources from financial institutions and government agencies is important to allow the pursuit of more capital-intensive strategies, specifically in developing a company’s new product. This capability can be enhanced through the entrepreneurs’ prior work experience in the industry (ICT1). This can be interpreted in terms of building contacts, as well as confidence, amongst potential investors or funders by the entrepreneurs during their previous employment. Besides that, their prior work experiences may also provide some initial ideas and practical exposure when applying for financial assistance. These procedures normally involve a great deal of documentation processes, as illustrated in the following excerpt:

I now understand why people say experiences cannot be bought! This is because my prior experiences working with government agencies have taught me how to prepare paperwork and this made things easier when I wanted to apply for government grants which involved a lot of documentation (ICT10).

The second role of prior work experience, nominated by 17 entrepreneurs-participants is the creation and enhancement of technical knowledge and skills. In this regard, the participants believed that their prior work experience gave them an in-depth understanding of the technical knowledge required, specifically by working with a technology-based company before forming their own business. For example, Participant OTH2 stated that: ‘My work experiences helped me in conducting R&D activities and I know that this process requires a lot of patience as results would not be revealed quickly’. Participant ICT11 argued that the emphasis on theoretical aspects of technical knowledge at university created difficulties for him in better understanding the GIS application. Fortunately, having been exposed to the industry has enhanced his understanding and skills to be able to run the GIS application (ICT11). This issue can also be translated in terms of the relevance of the syllabus taught in the university with current industrial needs, as highlighted by Participant ICT1: ‘I think, in the IT world, possessing work experience is
far more important than formal education, as in Malaysia, the syllabuses in IT courses are not current and up-to-date with current demand’.

Additionally, the exposure of technical aspects during previous employment may give an insight to entrepreneurs as to how to enhance their own technological capability and to handle any issues related to technical problems. For instance, five entrepreneurs (ICT6, ICT7, ICT9, ICT10 and BIO4) proposed that their prior work experience enhanced their technical knowledge in a manner pertinent to their new product development. This is because the development of a new product requires entrepreneurs to familiarise themselves with the requirements of the system or other technical aspects (ICT7). Moreover, the development of a specific product may also require entrepreneurs to share their technological knowledge with their technical employees in order to ensure the product development can be implemented smoothly. This is because technical employees will need advice and proper guidance from the entrepreneurs in executing their tasks, especially during the product development activity (ICT6).

The third role of prior work experiences is the development of soft skills in operating a business. Nowadays, success in business not only depends on technical knowledge, but also on the entrepreneurs’ capabilities to build good relationships with business stakeholders. Soft skills of entrepreneurs are developed not only from their daily interactions with colleagues and subordinates at the previous employment, but also during exchanges of communication with external parties, as suggested by Participant OTH3: ‘My work experiences have provided me with an avenue for improving my communication skills, especially when I’m dealing with customers and employees’. Further, entrepreneurs’ soft skills may also provide an avenue for them to develop an effective leadership style. This is because the soft skills possessed by entrepreneurs through their prior experiences may assist them in managing their employees. The interviews uncovered those entrepreneurs, who possess prior work experience as a team leader or who were working in a team in their previous employment, may be better be acquainted with appropriate ways of managing their employees. For instance, Participant ICT12, who was a team leader in her previous employment, stated: ‘I gained the capability to manage my employees and guide them to execute their tasks effectively from the experience that I got as a team leader in my previous job’.
Additionally, the exposures gained by the entrepreneurs during prior jobs may also develop their soft skills in terms of better understanding the surrounding business environment. This is because entrepreneurs need to understand and adapt to the culture around them and eventually respond accordingly in order to anticipate the wants and needs of people surrounding them. Participant ICT4 stated:

In doing this business, I think soft skills are really crucial because some customers not only want to buy our products or service, but also want to share their personnel problems as well. We need to build a good relationship with them.

The fourth role of prior work experience, as remarked upon by six entrepreneurs-participants, is the creation of business networks through social connections with other people known to them from their previous jobs, especially amongst business stakeholders. In regard to this, Participant ICT8 suggested: ‘The most valuable thing that I got through my previous working experience is business networks. Via these networks, I knew my customers as well as my customers’ friends’. This is because the entrepreneurs would be able to develop an effective relationship with their potential customers and suppliers. Such experiences are crucial for strategizing their current business operations. To explain this, Participant BIO4 stated that her prior work experiences have helped her to identify which suppliers could offer quality raw materials at cheaper prices. This view is also in line with an opinion from Participant ICT1, who stated that the business network he has built from his prior employment is truly significant in helping him solve business problems and close business deals. This is because he was familiar with stakeholders’ expectations and this helped him to create inventive products in the market. Indeed, the value of having social networks from entrepreneurs’ prior experiences may also be interpreted in terms of learning processes that occur via interactions between entrepreneurs and business stakeholders (ICT14 and BIO5). These interactions are a continuous entrepreneurial learning process that eventually drives entrepreneurs’ behaviour and actions, as proposed by Participant ICT14: ‘My previous experience in a consulting firm taught me to communicate effectively with my current customers, specifically in negotiating and dealing of business transactions with them’.

The last role of the entrepreneurs’ prior work experience is to assist in identifying business opportunities and ideas as recommended by six entrepreneurs-participants. Prior work experiences possessed by the entrepreneurs have enabled them to be exposed to the latest
trends and current demands of specific offerings in the industry (OTH2). As a result of this, Participant ICT1, who had seven years of working experience in the ICT industry, stated: ‘Being exposed to the industry for years have increased my ability to see current demands in the industry. I could exploit a much more specialised market to offer customers’. More importantly, the entrepreneurs could generate any innovative idea from prior work experiences and be able to position their business by identification of niche offerings to the industry (ICT12 and ICT14). Through prior work experience, the entrepreneur could also obtain pertinent information about any relevant financial funding available and eventually grab that opportunity (ICT9).

The next section will delve into the role of founder’s knowledge and skills as being two main outcomes of human capital investments towards a sustainable business.

5.2.2 The Outcomes of Human Capital Investment
The outcomes of human capital investment in this thesis focus on two main aspects: (a) the level of knowledge and (b) the relevant skills possessed by the founders of Bumiputera NTBSFs. The contributing roles of each aspect will be briefly analysed in the next section.

a) Founder’s Knowledge
One of the main outcomes produced from the investment of human capital amongst the business founders is the development of relevant knowledge on how to operate and sustain a business. Through Question 18 of the interview protocol, this section uncovers the perceptual views of founders on the reasons why possessing such knowledge is crucial in sustaining their businesses and what strategies need to be implemented by entrepreneurs to enhance their level of knowledge. Generally, the participants believed that the possession of knowledge is an important resource for sustaining a business venture, especially in a technology-based industry. Table 5.7 shows the summary of a matrix-coding query on the reasons why knowledge matters in operating a business by the Bumiputera NTBSFs. From this, four justifications have emerged from the interview.

Table 5.7: Why Knowledge Matters?

<table>
<thead>
<tr>
<th></th>
<th>Embrace Technological Advancements</th>
<th>Management of Business Operations</th>
<th>Stimulate Creativity and Innovation</th>
<th>Manage Industrial Expectations</th>
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<tr>
<td>Sources</td>
<td>14</td>
<td>12</td>
<td>10</td>
<td>6</td>
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<tr>
<td>Coding References</td>
<td>18</td>
<td>22</td>
<td>11</td>
<td>9</td>
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The first benefit of possessing relevant knowledge in operating a business is being able to embrace the latest technological advancements in the industry, as proposed by 14 entrepreneurs-participants. The acquisition of new knowledge would thereby ensure that firms’ products offered to customers are relevant to their demands. Moreover, embracing the latest technologies will also enable the Bumiputera firms to remain competitive in the industry, as they should continuously learn new knowledge and develop new technologies in the market (ICT9). Taking an example from the biotechnology industry, Participant BIO6, whose products are hard-surface disinfectants developed by using novel microbiocide, suggested that, ‘The evolvements of new microbes from day to day require me to continuously update new knowledge.’

Nevertheless, several participants (ICT1, ICT7 and ICT14) argued that the application of entrepreneurs’ technical knowledge in developing new technology should be strategically implemented. They do not necessarily need to be ‘across-the-board’ due to the rapid change of a business environment and uncertainty of customers’ acceptance of the new technology. The entrepreneurs should commercialise their newly-developed technology based on their expectations of customers’ responses towards new technology, rather than commercialising their new offerings upon the completion of the development process (ICT1). Indeed, the eagerness of entrepreneurs to bring new technology from the knowledge transfer with foreign business partners in the market would not necessarily bring a positive impact to the firm’s profitability due to low acceptance by local customers. Participant ICT7 contended: ‘Based on our experience, we could not implement a new technology that we brought from South Korea due to low customers’ acceptance level of this new technology in this country compared with other developed countries’.

The second contributing role of knowledge, as stated by half of the participants, is to enhance their abilities to manage business operations. The nature of the technology-based business that is characterised as being part of a knowledge-based economy (BIO6 and ICT13) requires entrepreneurs to possess relevant knowledge before venturing into a business. This is in order to help entrepreneurs envision the current scenario in the industry and to strategize their business operations (ICT3). Interestingly, these participants also suggested that the reasons why they venture into a business are based on their domain knowledge in a particular industry. For instance, Participant ICT2 contended: ‘Without my
IT knowledge, I could not venture into any ICT business. Having this (knowledge) is such an advantage to me’. Additionally, the ability of the entrepreneurs to continuously enhance their level of knowledge could assist them in meeting customers’ expectations (ICT7 and ICT14) and developing new products (BIO2). Due to this, an entrepreneur should be a knowledgeable person in order to deal with customers and suppliers and encourage them to engage with their business (OTH2).

The third contributing role of knowledge in sustaining a business is to enhance the entrepreneurs’ level of creativity and innovation, especially in regard to the development of new products and technology. For instance, Participant BIO1 stated that he needs to be innovative by seeking relevant knowledge within his business in the biotechnology industry due to rapid technological changes. In line with this view, Participant OTH2 suggested that the knowledge creation through his R&D activities enabled him to offer new products in the market. Furthermore, the acquisition and enhancement of new knowledge by entrepreneurs would also enable them to diversify their offerings to the customers, as shown in the following quote: ‘You must seek information about current and future technology. Through this knowledge, you gain the ability to propose an innovative solution to your clients’ (ICT2).

The last contributing role of knowledge is to help entrepreneurs manage changing industrial expectations, both technological developments and new government policy. For instance, Participant ICT7 stated his company is currently working on developing performance system due to the inspiration of Prime Minister, Najib Razak, who aims to increase performance and efficiency amongst civil servants. Having recognised the importance of possessing relevant knowledge for the entrepreneurs, this thesis has also uncovered five strategies of knowledge acquisition and enhancement practiced by the entrepreneurs to sustain their businesses as shown in Table 5.8 below.

**Table 5.8: Strategies of Updating Knowledge**

<table>
<thead>
<tr>
<th>Sources</th>
<th>Internal Meetings &amp; Discussions</th>
<th>Social Networks</th>
<th>Reading</th>
<th>Industrial Seminars</th>
<th>Consultancy</th>
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<tr>
<td>11</td>
<td>9</td>
<td>9</td>
<td>7</td>
<td>5</td>
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<tr>
<td>Coding References</td>
<td>12</td>
<td>11</td>
<td>10</td>
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The first strategy employed to acquire and enhance knowledge, as stated by 11 participants, is to implement internal meetings and discussions, especially amongst employees and business stakeholders. The dynamic nature of business faced by the participants requires them to discuss with their staff latest technology advancements in the industry and other issues in regard to developing their business operations (ICT2, ICT1, and OTH1). The participants believed that the implementation of periodic organisational meetings with employees is crucial as a platform by which to exchange ideas among organisational members. For example, Participant ICT6 stated: ‘In order to update my knowledge, I conduct weekly meetings or discussions in order to gain feedback and information from my staff’.

The second knowledge enhancement strategy practised by the entrepreneurs is through their social networks. This strategy is regarded as an efficient method of enhancing knowledge because the entrepreneurs could save the time and cost of attending formal training (ICT5 and ICT12). Through discussions and from comments received from their social networks (BIO3 and OTH1), the entrepreneurs could generate new ideas or knowledge which are valuable for their business operations, as suggested by Participant ICT11: ‘Social activities with knowledgeable people have exposed me to new things (knowledge) in the industry, such as the latest sensor accuracy measurement developed by other industrial firms.’

Meanwhile, the third strategy implemented by the participants to enhance their knowledge is through reading habits. Nine participants suggested that good reading habits would enable them to update new knowledge available in the industry. Participant ICT14 claimed that reading magazines related to his business area exposes him to the latest reviews by experts on new technologies or products available in the industry. Interestingly, the reading habits stated by the participants were not only limited to magazines, but also to electronic media. For instance, Participant OTH2 suggested: ‘I believe reading is an important aspect for updating knowledge as we are facing a world without boundaries, whereby through reading via Internet websites, we will learn new things’. The fourth strategy implemented by the participants to embrace new knowledge in the industry is by attending industrial seminars or training courses. Seven participants suggested that their participation in any industrial seminar that focuses on business development aspects would provide new exposures and knowledge in the industry. For instance, Participant BIO1
noted: ‘I’m always attending any business seminar or conference in the biotechnology field to update my current knowledge’ (ICT10). Interestingly, attendance at these business seminars could be used as a platform for entrepreneurs to not only enhance their knowledge, but also to promote their products with other participating firms (ICT12).

The last strategy of enhancing knowledge is through engagement with external consultants who are experts in their technological areas or business fields. In this regard, three of the participants sought consultancy services from their ex-lecturers, while others hired external consultants to give them technological advice. For example, Participant BIO4 stated that the development of her firm’s new products was made via consultation assistance from SIRIM, especially testing their samples and ingredients.

b) Founder’s Relevant Skills
The second outcome from the investment of human capital which has emerged in this thesis is the possession of relevant skills by the entrepreneurs-participants in sustaining a business. Question 19 has been put to the participants to attempt to uncover contributing roles of relevant skills and to further understand what types of skills are required by the participants in order to sustain their businesses. Generally, the participants viewed the possession of relevant skills as an important aspect of sustaining their businesses, specifically due to multiples roles played by entrepreneurs in operating the business.

Table 5.9: Reasons why Possessing Relevant Skills are Important

<table>
<thead>
<tr>
<th>Sources</th>
<th>Product and Technology Development</th>
<th>Dealing with Customers</th>
<th>Manage Business Aspects</th>
</tr>
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<tbody>
<tr>
<td>Coding References</td>
<td>18</td>
<td>16</td>
<td>15</td>
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<td>25</td>
<td>17</td>
<td>20</td>
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Table 5.9 shows the summarised result of a matrix coding query that examined the participants’ views on the importance of possessing relevant skills relating to business sustainability. Three main reasons have emerged from this study.

First, the relevant skills possessed by the entrepreneurs-participants would assist them to develop new products and technologies, as suggested by 18 participants. The entrepreneurs generally develop their products and technology based on skills that are either developed from their previous educational background or work experience (ICT6, BIO2 and BIO3). For example, Participant ICT7 stated that his experiences in developing a land tax payment
by using a multimedia kiosk in a previous employment have developed his niche skill in
developing a multimedia kiosk for any application requested by the customers. Additionally, the development of participants’ new products or technologies could also be derived from their skills in identifying customer need and transforming the ideas into viable products (ICT4, ICT13 and BIO4). Significantly, the skills possessed by the entrepreneurs would enable them to continuously develop their own products rather than depending on knowledge and expertise from other parties (such as outsourcing to other firms (OTH2)) and this is pertinent for their firm’s sustainability as contended by Participant ICT6: ‘If I’m always outsourcing my software development projects to other firms, they know how to develop the software, whereas we know nothing and are the ones who are actually losing’.

The second justification for the importance of relevant skills is to enhance their abilities to deal with customers effectively. The participants believed that soft skills possessed by them in dealing with customers (such as negotiation and interpersonal skills) are important to convince the customers to engage with the firms’ products (BIO1). Participant ICT6 proposed: ‘Soft skills are required by an entrepreneur in operating a business, specifically in terms of communications and public relations. It reflects on how you want to deal with customers’. Indeed, skills possessed by entrepreneurs assisted them to attend to customers’ expectations, especially in ensuring all criteria expected could be fulfilled by the firms. Furthermore, entrepreneurs should also develop skills of maintaining good relationships or rapport with their existing customers, such as by providing after-sales services. By making this extra effort, customers would feel appreciated and be more likely to do business with the firm in the future (BIO5).

The last reason to justify the possession of relevant skills is to enhance entrepreneurs’ business management aspects, as suggested by 15 entrepreneurs-participants in this thesis. Relevant skills possessed by entrepreneurs have assisted them to develop managerial skills, especially in terms of managing cash flow, marketing firms’ new products and managing employees. Besides that, entrepreneurial skills possessed by the founders assist them to enhance their competencies in formulating a strategic plan for their business operations, as stated by Participant ICT 10:
The most important skill is the planning skill. When you start something, there must be a plan. We need to think that our product can be sold for another five years. It reflects our vision and mission in doing the business.

Table 5.10: Types of Skills

<table>
<thead>
<tr>
<th>Sources</th>
<th>Soft Skills</th>
<th>Technical Skills</th>
<th>Business Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coding References</td>
<td>18</td>
<td>14</td>
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From another perspective, as shown in Table 5.10, the participants-entrepreneurs have also suggested three types of skills which are important for sustaining a business, namely: (a) soft skills, (b) technical skills and (c) business management skills. The result shows that soft skills have been perceived as being the most important skills, as suggested by 18 participants. In this respect, the soft skills mentioned by the participant can be viewed from several views such as namely: interpersonal skills, negotiation skills and problem-solving skills. The second set of skills suggested by the participants is technical skills, which have been cited 21 times from 14 participants. Lastly, skills of managing a business have emerged 15 times from more than half of the entrepreneurs-participants in this thesis.

The sustainability of a Bumiputera NTBSF is also affected by the founder’s social capital and this aspect will be discussed in the next section.

5.3 FOUNDER’S SOCIAL CAPITAL

The third aspect investigated in this thesis is founder’s social capital. Three sub-themes have emerged from the thematic analyses of the importance of founder’s social capital towards Bumiputera NTBSFs’ business sustainability. These are illustrated in Figure 5.5. The sub-themes were emphasised on the aspects of founder’s relationships with social connections. The first aspect discusses the contributing roles of family business backgrounds and support to the participants, especially in terms of a parental role model. This section also explores challenges faced by those participants whose parents were salaried employees. Secondly, friends’ support given to participants is also discussed in this section. The last aspect investigated under the founder’s social capital was the impact of founder’s surrounding life environments upon the sustainability of their business.
5.3.1 Family Business Background and Support

From the interviews, 14 out of 24 entrepreneurs-participants came from a family with a business background. These participants stated that their self-employed family members have supported their business venture either in terms of advisory support, moral support or financial support.

(a) Moral and advisory support
Participant ICT1 stated that his self-employed parents have supported him with anything that he needed, especially in terms of advisory support, as well as ideas sharing. Indeed, having family members who are involved in business activities could also provide a platform for the entrepreneurs to discuss any issue which emerged in conducting their businesses. Participant ICT3 suggested that:

When you start your own business, there are a lot of hiccups in terms of getting your initial capital and other business matters. During this stage, family support is really important in terms of not only monetary support, but also emotional support (ICT3).

Additionally, entrepreneurs may learn relevant knowledge and skills needed to operate a business through observations of and early entrepreneurial experiences of/from their self-employed parents in conducting a business (BIO2). The entrepreneurs may be able to generate new ideas and receive valuable feedback from their self-employed family members, which could assist them in sustaining their businesses. More importantly, their family members would motivate and inspire the entrepreneurs to remain persistent in the business (ICT7). Interestingly, five entrepreneurs (ICT1, BIO2, BIO3, BIO4 and OTH3) have proposed that having self-employed family members provided them with an opportunity of gaining early entrepreneurial exposures. This was especially so for those who regularly assisted their family in the running of the business before embarking on their own ventures. These early exposures served to stimulate their entrepreneurial
interests from a young age (BIO4). It also helped to create a perception that undertaking a business venture is a part of their families’ way of life. To illustrate this, Participant BIO3 stated:

My late father quit his job and started his own business. Then, my elder brother and sister have also started their own business a few years back, and I can proudly say that having a business is part of our family tradition, it is in our blood.

(b) Financial Supports
One of the main constraints faced by the Bumiputera technology-based entrepreneurs in sustaining their businesses is lack of financial resources. The interviews revealed that few entrepreneurs have received financial support from their family members, especially the injection of initial capital needed during the start-up of a firm. This was the experience of nine of the participants. In this respect, a few entrepreneurs started their businesses by using their own savings and financial assistance from their family members, as suggested by Participant OTH3: ‘My financial condition was not enough to cover expenses incurred during the initial stage of the business, and thus, I needed to borrow some money from my parents’ (OTH3). Moreover, the inconsistent income generated in the early stage of business operations may also spark entrepreneurs to seek assistance from family members. This is especially so when their firms’ operational expenditures exceed the generated incomes (BIO3). The contribution of the initial capital may be obtained not only from the entrepreneurs’ parents, but also the entrepreneurs’ spouse as well as siblings, as shown in the following quote: ‘When I wanted to form this company, it was extremely difficult for me as I didn’t have a strong financial position. What I did was, I borrowed RM4000 from my sister that was used to support my employees’ salaries’ (ICT6).

From an interesting perspective, the contribution of financial assistance to entrepreneurs by family members is seen as highly motivating by showing support to the entrepreneurs. One participant suggested that: ‘My mum just gave a few thousand for me to start the business, instead of giving a loan. She’s inspired me to do my own business as both of my parents are running their own businesses’ (ICT3). Paradoxically, nine entrepreneurs claimed that they used their own money in starting up their own businesses rather than seek financial support from their family members. For example, Participant ICT7 stated: ‘I’m quite fortunate as when I worked at XYZ company, my salary was quite high and I’ve managed to save a lot from that and fund my initial capital’.
Remarkably, five entrepreneurs (ICT2, ICT5, ICT11, ICT13 and ICT15) expressed reluctance to accept any financial assistance from their family members. This could be translated in terms of the independent personalities possessed by these entrepreneurs, as remarked by one Participant (ICT15): ‘…they (parents) wanted to help me in providing financial assistance, yet I’m not keen to accept that as I wanted to be independent’. Further, the evidence of this personal characteristic can also be seen in the case of Participant ICT5, whose father is a farmer in a suburban area. Thus, being independent in life has become his life principle, as shown in this quotation: ‘I didn’t receive any financial assistance from my parents as I have a principle of not requesting money from them’ (ICT5). An explanation for this could be that the unfavourable socioeconomic condition faced by their family members would inspire the entrepreneurs not to depend on their family members financially (ICT2).

(c) Views from non-business family background
This thesis has also uncovered five entrepreneurs-participants (ICT4, ICT8, ICT9, ICT14 and BIO6), whose parents were salaried employees. They had faced difficulties in convincing their family members about their intentions to venture into a business. These sceptical views from non-entrepreneurial parents might be interpreted in terms of the level of risks taken by entrepreneurs to venture into a business, as remarked by Participant ICT8: ‘In the beginning, my father was not really supportive as he asked me to work as a government servant rather than to venture into a risky job’. Moreover, non-entrepreneurial parents would feel uncertain about the potential of an entrepreneurship career, as their nature of jobs was different from those of the entrepreneurs. Participant ICT4 stated that: ‘Both my parents are lecturers. Their careers are different from what am I doing right now. Nevertheless, they still encouraged me to be an entrepreneur even though initially they were not really convinced with my decision’ (ICT4).

Besides that, these non-entrepreneurial parents want their educated children to work at reputable firms rather than venture into a business (ICT2, ICT9). As a result of this, the parents did not support their children’s decision to venture into business. In the case of Participant ICT9, his parents were not really supportive in allowing him to venture into the current business. The parents were sceptical as they thought that he should be an engineer rather than an entrepreneur as he obtained a degree in civil engineering.
Nonetheless, the discouragements faced by entrepreneurs from family members towards their entrepreneurial ventures were viewed by five participants (ICT2, ICT8, ICT9, BIO3 and BIO6) as a challenge for them to run their business operations successfully. In this respect, Participant BIO6 stated that the lack of family support to venture into a business has motivated him to work harder and have a strong heart (being steadfast) to ensure his firm’s success. Nevertheless, the process of convincing their family members would definitely take time in order for the outcome to be tangibly seen, as suggested by one participant: ‘I needed to convince my family. After two years they saw that I can sustain a business and said that I could carry on with it’ (ICT8). Interestingly, Participant ICT9 stated that his family members were slowly accepting his decision to become an entrepreneur, as he could not only support his own life, but could also contribute money when family members needed his financial assistance.

(d) Work-Life Balance
From the analysis, another important issue that arose in the theme of family support is work-life balance. Six participants (ICT1, ICT10, ICT14, BIO4, BIO5 and OTH2) highlighted the issue of balancing their commitments between conducting their businesses and managing family. Being an entrepreneur requires participants to spend a lot of time managing the business, especially attending business meetings with customers and developing a firm’s products, as stated by Participant ICT1: ‘Time that I spend with my family is limited. The rest of my time is spent with business matters as I need to be more flexible due to some customers requesting to meet you after normal working hours’.

The issue of work-life balance amongst the entrepreneurs could also be examined in terms of managing family matters while running their businesses, especially managing the welfare and life activities of their children. Participant ICT10 stated:

We need to manage our family and this is similar to how we manage our business with vision and mission. We should know where we want to educate them (kids) and they’ll understand us since we share our life with them.

Due to this fact, Participant OTH2 suggested that having a family who understood the nature of his work is crucial due to his commitment in running the business. Similarly, Participant BIO5 felt more confident to venture into his biotechnology-based business with
the support and understanding given by his wife, especially in helping him to manage his family matters and to share financial responsibility in raising the kids.

Interestingly, four out of five female participants (ICT10, ICT12, BIO3 and BIO4) have raised the issue of work-life balance in terms of their responsibility as a wife and mother to their children. Indeed, Participant BIO3 proposed that many Bumiputera women are reluctant to venture into a business due to their family commitments. Moreover, according to the Malaysian Malay-Muslim culture, a wife should obtain permission from her husband in order to show wifely obedience, as stated by Participant ICT12: ‘….in 2007, I felt down (demotivated) and didn’t want to do anything. I wanted to do my business, but my hubby didn’t give the permission’. The interviews revealed that the capability of an entrepreneur to manage their work-life balance between their business operations and family matters would affect the sustainability of their business due to the tight schedule faced by the entrepreneurs. Next discussion will examine friend support as another social aspect of entrepreneurs which would affect the business sustainability.

5.3.2 Friend Support

From the interviews, one emerging aspect underpinning the founder’s social aspect is friend’s support. Four entrepreneurs-participants have ventured into a business due to their friend’s advices and influences (ICT1, ICT6, ICT8 and ICT12). For example, Participant ICT1 made a decision to venture into an ICT-based business after four years in the industry due to suggestions given by his friends. Interestingly, three participants (ICT2, ICT6 and BIO6) started their first business ventures with close friends via a business partnership. In this regards, Participant BIO6 ventured into his first business venture (a business consultancy) upon his graduation after being invited by his friend to become one of their business partners. Indeed, this early entrepreneurial experience has sparked his ambition to venture into his own biotechnology-based firm (BIO6). Additionally, the achievement of business success amongst friends has motivated these participants to venture into a business. For instance, Participant ICT12 stated that: ‘I saw many of my friends, who ventured into a business and owned big cars. I started to love the idea of making money and that influenced me to go into a business’.

Moreover, the involvement of the entrepreneur’s friends in a technology-based industry, such as ICT, has built up their confidence and interest in venturing into business for
themselves (ICT8). This is because business operations in the technology-based industry are surrounded by uncertain technological change, and hence some entrepreneurs may seek advice from their friends in dealing with this circumstance (ICT10 and ICT15).

Additionally, some entrepreneurs have also sought advice from close friends in operating their businesses, especially in technical and management aspects. In this respect, entrepreneurs might observe their entrepreneur-friends’ management style in running a business and eventually learn from them (OTH1 and OTH2). Indeed, the relationship with friends could be seen as a source of information for entrepreneurs to gain new insights about their business operations such as through casual conversations with friends (ICT12). Besides the advisory support, the entrepreneur may also receive encouragement from their friends as well as being able to share problems relating to the business (ICT4). The encouragement received by entrepreneurs is not necessarily in the respective business area, but also the self-development aspect which may eventually boost their confidence when doing the business. For example, Participant ICT12 suggested:

My friend who is a Catholic advised me to do a lot of meditation at certain times. As a Muslim, I took it and did a lot of prayers to ask God to give me assistance and this eventually increased my level of confidence in doing this business.

On the other hand, support of friends may also be received in terms of financial assistance given to entrepreneurs, as stated by one participant: ‘I borrowed money from my close friend for about RM10,000 to start my own business. Within three months, I managed to repay all the debt to him’ (ICT6). From another perspective, friend’s support for entrepreneurs could also be interpreted as the creation of business transactions and collaborations made between entrepreneurs and their friends. Participant ICT3 suggested that it would be easier for him to sell his products to his friends due to the trust generated from their friendship. Indeed, several of his firm’s sales are generated from his own friends or via recommendations given by his friends to other prospective customers.

5.3.3 Surrounding Life Environments

The abilities of the Bumiputera entrepreneurs to sustain operation of their businesses are also influenced by their surrounding life environments. Findings showed that three factors underpinning the founder’s life environment aspect have been suggested by participants as influencing their ability to sustain a business. Having a good role model is one of the
factors that could assist entrepreneurs either in terms of technical aspects or business operational aspects. In addition, findings have also shown that the ability of Bumiputera entrepreneurs to sustain a business could also be affected by their connections with politicians, especially in terms of obtaining business projects from the government. Nevertheless, this factor could hinder their abilities in the case of a political change in the Malaysian political scenario. Lastly, the business culture of Bumiputera society has been found to be a factor that could affect the ability to sustain a business in the long term. A culture known as ‘Ali-Baba’ has arisen; whereby Bumiputera entrepreneurs who normally receive projects from the government would delegate their projects to Chinese entrepreneurs to do those tasks.

5.4 SUMMARY

The central focus of this chapter is to explore the founder-specific aspects that could influence the sustainability of a firm in order to answer the first sub-research question of this thesis. Analysis of the data revealed three main aspects of founder-specific factors that could influence the sustainability of a business (in Figure 5.6).

The first aspect is the attributes of a founder in regard to his/her motivation to venture into a business and entrepreneurial personalities of the founder which would influence the direction of the business. These two attributes are crucial in influencing the sustainability of a firm amongst Bumiputera. It is interesting to note that the entrepreneurs’ motivations such as the desire to help the society in job creation and product offering would not only affect the sustainability of a firm, but also the sustainability of Bumiputera socioeconomics. Additionally, having a set of relevant personality strengths, such as being hardworking and having a higher spiritual intensity would assist the founders to overcome any obstacle faced by them in sustaining their business. Further, one of the unexpected issues to emerge from the analyses is the role of religious values in entrepreneurs’ daily life that can be examined through the entrepreneurs’ motivations and personalities.
Figure 5.6: Founder-Specific Aspect Thematic Analysis Model

Source: Author
The second of the founder-specific aspects analysed in this chapter is founder’s human capital that mainly refers to the investment of founder’s human capital and the creation and development of two important outcomes from such investment. The analysis revealed that the founder’s human capital investment such as formal educational background and prior experiences have positive implications towards the sustainability of Bumiputera in operating a business. For instance, many participants stated that both aspects are crucial in enhancing their business capabilities, especially in terms of identifying business opportunities, and more importantly, enhancing entrepreneur’s knowledge and skills in running a business. Hence, the outcomes of human capital investments such as possessing relevant skills and knowledge will assist the entrepreneurs to embrace technological advancements and to deal with customers effectively in order to sustain their business. Chapter Eight discusses how relevant government agencies play their roles in nurturing the entrepreneurs through the investment of human capital, such as business training.

The last aspect uncovered in this chapter is the founder’s social capital that is comprised of family business background and support, friend’s support and the influence of surrounding life environments. As expected, more than half of the entrepreneurs-participants come from a self-employed family background. What was interesting to discover in this analysis were the views generated from the participants whose parents who were salaried employees. This group of participants faced more difficulty to convince the family members of their intention to venture into a business, let alone moral support and financial support from the family, compared to those entrepreneurs whose parents were entrepreneurs. One unanticipated finding was the issue of work-life balance faced by the participants. This finding suggests that the entrepreneurs should be able to balance between their business operations and family matters, particularly amongst Bumiputera women entrepreneurs. The Malay culture normally puts more responsibilities on wives to manage family matters while requiring they should first obtain permission from their husband for all actions. Chapter Six discusses the entrepreneurs’ perceptions of the resources held by their firms and how they can influence business sustainability. This might reflect on the entrepreneur’s capabilities (such as knowledge and skills) to manage the firms’ resources as discussed in this chapter.
CHAPTER SIX

ANALYSIS: FIRM-SPECIFIC RESOURCES

6.0 INTRODUCTION
This chapter reports on the analyses of the firm-specific resources emerged from the interviews amongst the Bumiputera NTBSFs, and aims to answer the second sub-research question of this thesis: ‘To what extent have the firm-specific resources impacted upon the sustainability of Bumiputera NTBSFs?’ In this chapter, three main themes related to the firm-specific resources were investigated that comprised of firm’s social capital, firm’s intangible assets and capabilities, and firm’s business strategies. This investigation was analysed by using matrix coding queries from the NVivo. Initially in discussion of a firm’s social capital, three aspects are examined and further elaborated: business networking, business reputation and intra-firm relationship. The second theme of analyses discusses the firm’s intangible asset and capabilities, especially those elements that have direct implications towards Bumiputera NTBSFs in the technology industries such as R&D capabilities, organisational innovative culture and firm’s Intellectual Property Rights (IPRs). Next, this chapter also discusses the strategies of competitive advantage employed by the firms in maintaining and sustaining their business operations. This chapter concludes with a summary of each related theme and sub-theme emerged in this chapter.

6.1 FIRM’S SOCIAL CAPITAL
This section examines the social capital of a firm, which comprises its business networking, business reputation and intra-firms relationship as illustrated in Figure 6.1.

Figure 6.1: Firm’s Social Capital Thematic Analysis Model
6.1.1 Firm’s Business Networking

This section uncovers the contributing roles of business networks towards the sustainability of business amongst Bumiputera new technology-based firms. In general, the ability of entrepreneurs to build good business networks is crucial in assisting their firm’s business growth and sustainability. Having recognised this issue, the entrepreneurs-participants were asked in Question 25 of the interview protocol about their perceptions of the importance of possessing a good business network and why they think so. Additionally, the participants were also further probed to share their strategies of building business networking in their organisations.

Analyses showed that almost all participants perceived that possessing a good business network is important in sustaining their business operations. Participant ICT14 suggested that knowing people in operating a business is beneficial regardless the location of the business, either in Asian countries or Western counterparts. In this respect, the development of a firm’s business network was viewed as an integral process for the entrepreneurs to conduct their businesses. One participant suggested: ‘Business networks are important as this is the pulse of a business. If we do not possess a good business network, absolutely the business would be decelerated and eventually fail’ (ICT7).

Indeed, the possession of a good business network amongst the new, technology-based firms is important towards the firm’s business performance, especially in regard to the new technology development. The ability to leverage a firm’s business networks would accelerate technological capabilities of the firm, as noted by Participant BIO5: ‘…if you don’t have contacts, it would be hard for a new firm like us to develop a new technology due to limited knowledge and resources’. In a similar vein, the inability of founding entrepreneurs of newly-established small firms has required them to seek assistance from other external parties either from both private firms and government agencies, as remarked by the following quotation: ‘As a new firm, we have limited financial budget as well as resources and the way to overcome these problems is through business networking’ (ICT13). Nevertheless, Participant ICT2 was the only participant who perceived that the importance of possessing of a good business network was a situational aspect in sustaining his business, whereby he further noted:
The importance of business networks depends on the situation of a business. Sometimes, I think it is important and sometimes it’s not really important such as you only need to exploit the networks when you want to solve problems faced by your organisation (ICT2).

The summary of matrix coding analysis from the NVivo as shown in Table 6.1 shows that there are four main reasons why leveraging a firm’s business networking is important towards the sustainability of a technology-based firm (See Appendix 6.1); (a) business opportunity (b) business collaborations and outsourcing (c) learning and knowledge enhancement and (d) manage business.

**Table 6.1: The importance of Business Networking**

<table>
<thead>
<tr>
<th>Seeking Business Opportunities</th>
<th>Business Outsourcing and Collaborations</th>
<th>Managing Business</th>
<th>Knowledge Enhancement</th>
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<tr>
<td>Sources</td>
<td>20</td>
<td>13</td>
<td>10</td>
</tr>
<tr>
<td>Coding References</td>
<td>26</td>
<td>20</td>
<td>10</td>
</tr>
</tbody>
</table>

The most cited reason for business networking by the entrepreneurs-participants is to seek business opportunities, whereby 25 coding references have emerged from 20 participants. In this respect, Participant OTH1 noted that: ‘A good network leads to opportunity. If we have a good network, our percentage to get a new job (business project) would be higher’. In fact, the possession of a good business network could increase the viability of a new technology development by the firms, as expresses by one participant: ‘How could we market our new products if we didn’t have a good business network?’ (BIO3). In addition, the newly-established firms would promote and sell their products with their business partners first before marketing the products to other new customers (BIO4). Hence, the generation of a business project via a firm’s business network requires the entrepreneurs to identify and exploit the right business network, as suggested by one participant: ‘When you pick the right network, the opportunity will come together. It is like an umbrella concept whereby if we are in the right network, we will have the opportunity to get some sub-contract jobs’ (ICT1).

Maintaining a good relationship with business stakeholders, especially amongst existing customers, might create awareness about the firm’s capability to render good service. From
another perspective, the development of a good business network between the firms and business stakeholders may also lead to the creation of organisational business trust. The trust of others towards a firm may eventually lead to the intention of doing business with the firm as well as the creation of long-term, mutually beneficial relationships that lead to more business. Therefore, through this business trust the firms would be able to commercialise their new offerings with less difficulties and to some extent, the business stakeholders would also assist the firms to recommend the new offerings to other parties. One participant proposed: ‘I think having a good network is just a matter of trust. We are human and making connection with others might help us in running the business’ (ICT14).

Ironically, Participant OTH2 claimed that, in order to build a sense of business trust with other local firms, one of the ways they did it was to conduct an international-based business project with foreign stakeholders: ‘The funny thing about our local business culture is we have to market our products to overseas first before selling it in Malaysia to better gain trust from our local customers’.

The second reason why business networking is important for the firms to sustain its business is business collaborations and outsourcing. From the interviews, this was cited 20 times by 13 participants. As mentioned earlier, newly-established small firms normally face a lack of resources and this constraint could be solved via collaboration between firms in the industry or through outsourcing of the business jobs to other firms. For instance, Participant ICT3 stated that: ‘If we have business networking and let’s say we have few jobs that we can’t do due to lack of resources, we could outsource other firms that can do those jobs’. Besides that, the competitive business environment in the technology-based industry has required the technology-based firms to come out with a strategy of collaborating with other firms, even with their competitors in doing the business, as remarked by one participant: ‘In doing this business, we don’t really bother about competing with firms as we will collaborate with the competitors and be their business partners’ (BIO1).

In addition, the business collaborations and outsourcing might also help the new entrepreneurial firms to focus on a niche business aspect in the industry and to share their resources with their strategic partners. For instance, Participant ICT12 explained that the
collaborations made with other firms have enabled her organisation to focus on a specific business aspect and market its offerings to a broader geographical area: ‘By collaborating with other firms we not only focus on our main business, but we also could do the business in many places in Malaysia or even overseas with our business partners or appointed agents’ (ICT12).

The third reason why business networking is important as mentioned by ten participants is to ease the process of managing a business, especially solving problems faced by the firms. The business management challenge faced by the newly-established firms due to limited resources and entrepreneurial experience may hinder effective management of their business operations. Therefore, having a good business network might help these firms to enhance their business management capabilities through assistance and support received from their business partners. The assistance provided by these social networks is not only limited to product line assistance, but also may underpin the business processes of a firm (ICT1). For instance, Participant ICT2 stated:–‘When you face any problem in operating your business, you could use your social networks to help you overcome that problem’.

In this respect, having a strong network would enable the firms to gain necessary support and advice and become more resilient in operating their businesses. The business connections with relevant business stakeholders such as suppliers, distributors and government agencies would assist the firms to accelerate their business operations (ICT06, BIO2 and OTH2). For example, Participant OTH2 stated that the connections with suppliers would assist his firm to find raw material required in doing the business. Similarly, Participant BIO2 suggested: ‘Having known several suppliers via business networking, I already knew which suppliers that could offer us quality raw material with cheaper price’.

Finally, the fourth reason why business networking is important as remarked by eight participants is to enhance a firm’s organisational learning capability and knowledge. Business networking activities can enhance the collective learning process of a firm and this would eventually lead to development of the firm’s capabilities of gathering and updating relevant information. This is because the socialisation process with other firms would also enable them
to develop their tacit information and turn the tacit information into firm-specific knowledge. One participant stated: We should possess a good business network to update our organisational knowledge and information, especially by asking our business partners about the latest technology available in the industry’ (ICT5).

Additionally, the connections with other external parties either private firms or government agencies would assist the firms to develop their new business ideas (ICT6) and obtain valuable insights about valuable information that related to business development aspects such as the availability of business training and financial facilities provided by the government (ICT12). The possession of a good business network may also help the firms to reduce business uncertainty in running their business, especially in a rapidly changing technological environment by projecting the future direction of the industry, as Participant ICT4 remarked: ‘Business networking is not just for our business connections only. The most crucial matter is we must learn from our business partners in order to foresee where the industrial players would be heading towards in the future’. The establishment of business networks is not only limited to the geographical area of operations, and this would provide an avenue for the firms to gain new knowledge from their international counterparts (ICT3, BIO6). For instance, Participant ICT3 stated: ‘I went overseas several times for business conferences as I wanted to learn how foreigners do business in the ICT industry. For example, in Singapore… they have a vast number of IT companies blooming there’.

Table 6.2: Strategies of Developing Business Networking

<table>
<thead>
<tr>
<th>Business Exhibitions, Workshops and Conferences</th>
<th>Business Associations Membership</th>
<th>Casual Meeting</th>
<th>Online Social Networks</th>
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</thead>
<tbody>
<tr>
<td>Sources</td>
<td>13</td>
<td>13</td>
<td>11</td>
</tr>
<tr>
<td>Coding References</td>
<td>22</td>
<td>17</td>
<td>13</td>
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</table>

Having recognised the importance of business networking, the entrepreneurial firms implemented several strategies to leverage their business networks. The matrix coding from the NVivo as shown in Table 6.2 has uncovered four strategies of networking emerged from the interviews amongst the Bumiputera new, technology entrepreneurs.
These strategies comprised: (a) attending business exhibitions, workshops and conferences, joining business associations’ membership, (c) casual meeting with people, and (d) building online social networks. The most cited business networking strategy that emerged from the interviews is attending business exhibitions, workshops and conferences; whereby 22 coding references were generated from 13 participants. Through this approach, the entrepreneurial firms could demonstrate their offerings to the public and this eventually would attract more potential buyers for the company. One participant suggested: ‘When we started our business, we have participated in many business exhibitions to expand our business networking and more importantly some big clients were generated from attending those events’ (ICT5).

Interestingly, the demonstration of new inventions by the technology firms at the business exhibitions might also provide an avenue for the firms to seek recognition for their new product development and inventions. For instance, Participant BIO2 has won several awards for his firm’s product invention: ‘We had won a silver medal award for the ITEX (International Invention Innovation Industrial Design & Technology) Exhibition and were also awarded the HKTA Award for the Best Invention in Sanitation from Hong Kong’.

Besides that, the entrepreneurs might also be able to explore other firms’ innovative products as well as identify the business strengths possessed by other firms in the industry. Through this approach, the entrepreneurial firms would be able to find potential firms that could collaborate in the business, as illustrated in the following quotations: ‘When we attend a business exhibition, we might also explore any business collaboration opportunity with other exhibitors’ (ICT11). ‘We went to business exhibitions to seek any firm that doing business in the orchid tissue culture which could collaborate with us’ (BIO1).

From another perspective, some entrepreneurs may also build their relationships with other firms by attending any business workshop organised by both government-owned organisations and business associations. The business workshops conducted are aimed to give new insights and information that may enhance learning experiences of the entrepreneurs. Further, the acquisition and enhancement of knowledge gained by attending the business workshops may also be strengthen with networking processes with other workshop’s participants, specifically through knowledge sharing activities amongst the participants. For instance, Participant
ICT12 suggested that: ‘...the communication with the workshop’s participants in the technology sharing session at the MDeC business workshop has provided such a knowledge that boosts my confidence to be a successful entrepreneur’. She further stated that her company will send any representative to attend any workshop in case she could not able to attend the workshop (ICT12). Likewise, the importance of attending the business workshop also has persuaded Participant ICT09 to invest firm’s money, as he stated: ‘...in a month I allocate a certain budget and time for me to join any business workshop or event which might help me to know more people in order for me to be more competitive in doing this business’.

Besides attending business exhibitions and workshops, several participants also proposed that one of the good techniques to build a firm’s business networking was through attending business conferences. The benefits of attending business conferences as mentioned by these participants were mainly in terms of obtaining the latest technology developed in the industry and gaining knowledge in the area of business operations and industrial-specific technological knowledge (ICT11). For instance, Participant ICT7 stated: ‘My firm is usually attending conferences in order to gain new product exposures and from there, we communicate with other entrepreneurs...seeking any collaboration with potential business partners’.

Besides that, some entrepreneurs have also attended international conferences which were held in overseas and these attendances gave both business and technological exposures to them. For instance, Participant ICT3 explained that the exposure that he gained by attending several international conferences has enabled him to better understand foreigners’ business culture. He further stated: ‘As the Malaysian ICT industry is relatively small compared with others, exposures gained via attending international conferences has provided such a knowledge in terms of others’ culture and knowledge with other participants’ (ICT3).

The matrix coding query from the NVivo shows that more than half of the participants (13 participants) suggested that joining any relevant business association would assist them to strengthen their business networks and eventually to sustain their businesses. By becoming a member to any business association, the firms could obtain resources needed in operating their businesses, as proposed by one participant: ‘Lacking of both business and financial
information faced by Bumiputera entrepreneurs might be compensated via developing a good business networking, especially by joining relevant business associations’ (ICT4).

Due to this fact, many of these technology firms have become a member to an association which is similar to their nature of business. For example, many participants from the ICT industry have mentioned about the existence of the Malaysian Association of Bumiputera ICT Industry and Entrepreneurs (NEF) that acts as a platform for Bumiputera ICT-based firms to build business networks. In addition, several participants have also joined few business associations that were specifically tailored with their area of business. For example, interviews revealed that ICT-based firms might join several ICT-based business associations: Participant ICT15: ‘….this firm has joined IASA that refers to the Independent Association of Software Architecture that is an international association. The IASA also has a branch in Malaysia’; Participant ICT11: ‘As we are involved in the development of GIS software, the association that this company has joined is the Institute Surveyor of Malaysia or called as ISM’.

Interestingly, the number of participants from the biotechnology industry that joined in the business association is minimal. Only one participant from this industrial cluster has joined a business association (BIO5). As expected, the firms might also join business associations which gather a group of firms with similar interests in conducting a business such as similar business locations and even races of the firm’s owners. For instance, the existence of the Malay Chamber of Commerce Malaysia (MCCM) strives to integrate Malay businessmen and entrepreneurs for the interest of Malays’ economic development. Additionally, this association comprised of several divisions or branches of small associations that are clustered by states in Malaysia. These state branches would focus their activities amongst firms which are operated and located in their state areas, as illustrated by one participant: ‘As our business location in Iskandar developmental area that is in Johor state, we really wanted to be a member of both Iskandar Malays Chamber of Commerce and Johor Malays Chamber of Commerce’ (ICT4).

In terms of benefits gained through business, association memberships may be seen through business development programs conducted by the business association such as training and mentoring programs as well as potential business collaborations opportunities with other
firms. For example, Participant ICT9 noted: ‘I have joined several programs conducted by the NEF even before I became an official member as I perceived this matter is important for my business growth’. Further, the connections made between firms in the business associations may provide a room for sharing resources and knowledge amongst the members, as mentioned by one participant: ‘Joining business associations could help us to possess business networks, especially to find raw material required in doing this business such as logistics’ (OTH2).

Additionally, the firms may also gain benefits in terms of the connection possessed by the business associations with other organisations such as multinational companies (MNCs) and ministries which are related to the firms’ business operations. Participant ICT6 mentioned that the strong relationship between the NEF and the Ministry of International Trade and Industry as well as other MNCs would be able to help the members to grab any business or project opportunity available and this eventually would help the firms to sustain their businesses. Nevertheless, he further commented: ‘I think firms should develop their own strengths, especially in terms of their product offerings in order to impress other members which already have been in the industry for quite some time’ (ICT6). This may be interpreted in terms of the difficulties for new firms to establish a reputation amongst established firms in the business association due to the liability of newness faced by them.

Indeed, even more than half participants agreed that it’s really beneficial for them to become a member in any business association, nevertheless there were issues arose from the interviews besides difficulties to established their reputation amongst association members such as the domination of established firms and strong political environment in the association (ICT8). For instance, Participant ICT6 stated:

I do believe that moving forward with business associations is important but we need to ensure that methods of association that we’re practicing are beneficial for all members. We don’t want to see those who already rich become richer and not really help small companies.

The third business networking strategies that emerged from 11 participants was conducting casual meetings within the firm’s social networks in order to build a good relationship with them in the long-term. In this regard, Participant ICT2 noted:
When you do business, you would meet people and sometimes you would not know whom you will meet tomorrow. Perhaps, you will meet a big person in the industry and thus, the most important thing is to being kind to anybody.

The implementation of casual social meetings would assist the firms to exchange information that is related to their business operations. More importantly, the firms would also expose to any new technology or product available in the industry. For example, Participant ICT5 suggested that by meeting friends who are doing a similar business would enable him to exchange the information regarding the latest IT systems used by them. Interestingly, Participant ICT14 proposed: ‘By having a casual meeting such as having coffee with our business stakeholders, this would expose them with our company’s products in order to get prospective buyers amongst them’.

The last approach of business networking to emerge eleven times from 9 participants is online social networking. The advancement of information technology has enabled entrepreneurs to communicate with others and transact business online through internet connectivity. As mentioned by Participant ICT9: ‘I spend a lot of time to communicate with business partners, staff and partners via the internet. This is because nowadays business landscape has changed. Thus, for us to communicate either locally or overseas there is no boundary’.

Indeed, this approach has also assisted entrepreneurs to communicate their products and services to existing and potential customers. In this matter, Participant BIO6 proposed that the application of IT in business may act as marketing tools which might disseminate information to the customers, especially via his firm’s website. Similarly, one participant mentioned: ‘Our medium of marketing is using website-based marketing. We try to update our website regularly as some customers contacted us via this webpage as they get to know as from this medium’ (ICT6). Interestingly, some potential customers or business partners from both local and overseas might also contact the entrepreneurial firms based on the information provided in their marketing portals. For example, Participant ICT12 noted: ‘Based on information published on the company’s website, we received demands from potential business partners to open a branch in Kuala Lumpur and Kota Bharu’.
The next section discusses the aspects of firm’s reputation towards the sustainability of Bumiputera NTBSFs.

6.1.2 Firm’s Business Reputation

The second aspect of a firm’s social capital analysed in this thesis is business reputation of the Bumiputera NTBSFs. The analyses revealed that all entrepreneurs-participants were concerned about developing a good firm reputation in order to sustain their businesses, especially in the technology-based industry. For instance, Participant ICT 9 claimed: ‘…in today’s situation, the current competitive markets are characterised by knowledgeable and smarter customers and this requires our firm to be able to build up a good business reputation to build the customers’ confidence’.

The analyses as shown in Table 6.3 have unveiled four main reasons why having a good business reputation is important on the sustainability of Bumiputera NTBSFs.

Table 6.3: Reasons why Business Reputation is Important

<table>
<thead>
<tr>
<th>Sources</th>
<th>Develop Trust</th>
<th>Build Firm Image</th>
<th>Business Generations</th>
<th>Business Collaborations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>22</td>
<td>12</td>
<td>12</td>
<td>9</td>
</tr>
<tr>
<td>Coding References</td>
<td>29</td>
<td>20</td>
<td>16</td>
<td>10</td>
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The most cited reason as suggested by 22 participants is to create and develop trust amongst their business stakeholders. In the current market that is characterised with knowledgeable customers, Bumiputera entrepreneurs need to build customers’ confidence with their product offerings (ICT9), specifically towards the creation of loyal customers who are continuously engaged with their firms’ products and services as stated by one entrepreneur-participant: ‘When people (customers) trust us even with a small job as you can deliver to them, they will be starting to give you more and we would have more recurring customers’ (ICT3).

The second reason for possessing business reputation is to project a good image to external parties, as cited by 12 participants. The ability of a firm to develop a strong brand image is viewed as crucial to ensure their financial success (BIO2) due to perceptions by customers and suppliers about the firm’s business. Hence, the entrepreneurs should develop a proper track
record and conduct an effective marketing strategy to develop their firm’s image. For example, Participant OTH2 stated: ‘People are commonly influenced by their first impression on a product. Thus, we need to implement marketing strategies that could make our customers remember our company’s existence’.

The third reason as suggested 16 times by half of the participants is to generate business transactions with their customers due to their good business reputation. Interestingly, the reputation possessed by the firms would influence existing customers or other stakeholders to propose other to engage with the firm’s product offerings. Participant ICT2 stated: ‘Once they are satisfied, when they meet people who need the same service like them, they will propose your business’. The last benefit of possessing a good business reputation as suggested by nine participant is to generate more business collaborations with other firms in the industry.

In a nutshell, the abundance of products in the market has created a situation where customers have the option to choose products which are produced by firms perceived to possess a reputable standing in the industry. Thus, developing good relationships with stakeholders either both customers and suppliers are crucial in influencing the sustainability of a firms, especially in terms of developing trust that is an crucial element for those relationship to bear fruitful.

6.1.3 Firm’s Intra-Firm Relationship
The thematic analyses have also uncovered that the intra-firm relationships in a firm have emerged as internal social factors that might affect the sustainability of Bumiputra NTBSFs. The intra-firm relationship analysis in this thesis can be divided into two main aspects, namely relationships with employees and relationship with business partners.

<table>
<thead>
<tr>
<th>Table 6.4: Intra-firm Relationship</th>
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<tbody>
<tr>
<td>Organisation-Employee Relationship</td>
</tr>
<tr>
<td>Sources</td>
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<tr>
<td>Coding References</td>
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</table>
Table 6.4 shows that half of the participants suggested that having a good relationship with their employees was really crucial in sustaining their businesses. The firm’s ability to attract, manage, develop and retain good human talent would assist the entrepreneurs to conduct their business smoothly. Indeed, some participants suggested that the development of a company’s growth and new product development would be influenced by contributions made by their employees. One participant stated: ‘I would discuss with my employees about the development of a new product as well as the way that our company could market this product and generate profitability’ (ICT8). For that reason, several actions have been implemented by the participants to develop and retain their employees such as sending them to training programs, delegating challenging work tasks, providing necessary rewards and communicating effectively with their staff. For example, Participant BIO5 suggested: ‘We are helping our employees by providing them a friendly working environment. The employees could openly share any idea to us that could help the firm to grow. We will reward them accordingly’.

On the other hand, ten participants have suggested that having a good relationship with their business partners, especially in creating a mutual understanding between the partners is important for a sustainable business (ICT3 and ICT11). To realise this, the entrepreneurs would normally choose business partners who could be trusted and able to support them in operating the business (ICT14 and BIO5). One ICT entrepreneur stated: ‘Me and my business partner complement each other in running our business whereby my role is more in terms of business management strategy whereas he will go for the technical aspects’ (ICT14). Interestingly, few entrepreneurs made their spouses as their business partners in conducting business (BIO4, BIO6 and OTH3).

6.2 FIRM’S CAPABILITIES AND INTANGIBLE ASSETS
The second aspect of firm-specific resources explored in this chapter focuses on the firm’s intangible assets and capabilities. Figure 6.2 shows the thematic analysis model for firm’s capabilities and intangible assets; whereby three themes have been investigated under this theme that comprised of R&D capabilities, innovative cultures and IPRs of a firm.
6.2.1 R&D Capabilities

This section discusses contributing roles of a firm’s R&D capabilities towards the sustainability of Bumiputera NTBSFs. To uncover this issue, Question 20 of the interview protocol asked the entrepreneurs-participants the importance of possessing R&D capabilities and their justifications for giving those reasons. In addition, the participants were also further probed to briefly explain their current strategies of conducting R&D practices.

a) Reasons Why R&D Capabilities are Important

The analysis generated from the NVivo’s matrix-coding query as shown in Table 6.5 has uncovered four main reasons why R&D capabilities are important towards sustainability of Bumiputera NTBSFs, namely: (a) new product development, (b) to fulfil customers’ need, (c) firm’s knowledge enhancement and (d) opportunity creation.

<table>
<thead>
<tr>
<th>Table 6.5: Reasons Why R&amp;D Capabilities are Important</th>
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</thead>
<tbody>
<tr>
<td>Product Development &amp; Fulfil Customers' Needs</td>
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<tr>
<td>Sources</td>
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<tr>
<td>Coding References</td>
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</tbody>
</table>

The R&D capabilities possessed by the firms would increase their abilities to develop new products or technology as stated 33 times by 21 participants in this thesis. Quality products produced by the firms from their R&D activities would enable them to strengthen their positions in the industry and eventually sustain in the long-term. For instance, Participant ICT1 stated: ‘I need to have a solid product to survive in this industry (ICT). Hence, I will be continuously conducting R&D activities until I’m satisfied with the quality of the product’.
The second reason is to fulfil customers’ needs or demand, through the development of product and technology, remarked upon by more than half the participants. In this respect, the entrepreneurs should emphasise the importance of customising their customer offerings. Participant ICT3 stated: ‘We conduct R&D activities to customise the ERP (Enterprise Resource Planning) system that we developed to our customers’. Indeed, this could be done through a feasibility study of the product to investigate the acceptance by customers of a particular product and to find a better way to improve the product (ICT9, ICT10 and BIO4).

Through the R&D firms should also be able to enhance their knowledge with discovery of research outcomes. In this respect, the firms would not only be alert to latest technologies in the industry, but few participants were also stated that they continued to develop new technologies in order to build their knowledge competitiveness (ICT5, ICT13 and BIO3) due to dynamic business environment (BIO1). Interestingly, Participant ICT6 claimed that continuous R&D activities have helped him to expect and create demand of their customers. The last reason why the R&D capability is important to assist the Bumiputera NTBSFs is the creation new business opportunities in the market, in which this reason has been stated by seven participants. This could be explained through the new product or technology invented or developed by the firms as described earlier. Besides the invention of viable products, the entrepreneurs may also provide a good reputation which would enable them to convince the investors and government agencies to fund their further business development. For example, one participant stated: ‘Through the outcomes of my research in the plantation management IT system, I could able to convince my funders who are non-technical persons to approve my grant application’ (ICT12).

Having realised the importance of R&D activities towards Bumiputera NTBSFs’ sustainability, the entrepreneurs have implemented several strategies to enhance their R&D capabilities that will be discussed in the following section.

b) Strategies to Enhance R&D Capabilities
Table 6.6 shows that three strategies have been adopted by the entrepreneurs-participants in enhancing their firm’s R&D capabilities, namely in-house R&D activities, formation of strategic alliances and external parties outsourcing.
Table 6.6: Strategies to Enhance R&D Capabilities

<table>
<thead>
<tr>
<th>Sources</th>
<th>In-House R&amp;D Activities</th>
<th>Strategic Alliances</th>
<th>Outsource with External Parties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coding References</td>
<td>17</td>
<td>9</td>
<td>3</td>
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<td>20</td>
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</table>

The implementation of in-house R&D activities emerged as the main strategy employed by the entrepreneurs-participants, with this strategy stated 20 times by 17 participants. The implementation of in-house R&D activities by the Bumiputera NTBSFs would be examined in terms of the composition of human capital, acquisition of new assets or devices, and attendance at relevant training programs. Further, several participants suggested that the creation of an R&D team or unit would enhance their R&D capabilities. For instance, Participant ICT2 stated: ‘We have an R&D unit in our company that is responsible to create a system for our business operations and to propose the best solution on the problems faced by our customers’.

In addition, the entrepreneurs-participants have stated several reasons why they preferred to conduct in-house activities rather than other strategies. First, the entrepreneurs would feel more confident to market their new products or technologies, as mentioned by Participant BIO6: ‘Based on results of the research that I have conducted, it made me confident to be in the market as I found out that we do not have any close competitor who is doing the same business’. The second reason is to better understand newly-developed products, especially their main features such as product quality and benefits. One biotechnology participant proposed: ‘I conducted a pre-test of my homeopathy products to investigate how these products could change the personality polar of the end users’. The last reason for conducting in-house activities is to serve the customers better by knowing better the main features of the firm’s new products.

The second strategy of enhancing R&D capabilities as suggested by nine entrepreneurs-participants is strategic alliances with other firms, especially sharing expertise or knowledge about new product development. The implementation of strategic strategy could also be seen as a transfer of knowledge to the new entrepreneurs by the experts (BIO3). Moreover, the limited resources and knowledge possessed by the firms could be compensated through these strategies.
strategic alliances. In this respect, the entrepreneurs would collaborate with experts from universities or research institutes in conducting an R&D activity. In addition, the entrepreneurs might also collaborate with their business partners or friends who were involved in similar businesses, as suggested by Participant ICT12: ‘I made several business collaborations with my friends, especially my ex-classmates, to develop our new products as I do not think that could do everything and could only focus on my niche knowledge’.

The least cited strategy that emerged from three participants was to outsource several technical tasks to external parties. The lack of expertise and human resources faced by the entrepreneurs require them to hire external consultants to assist them with business advisory and technical assistances, as proposed by Participant ICT7: ‘We hired programmers for the development of this application (IT system) and then from that we developed further based on the requirement given by our customers’.

The next section discusses the second aspect of firm’s capabilities and intangible resources which is the innovative culture possessed by the firms in sustaining its business operations.

6.2.2 Innovative Culture and Business Sustainability
The second aspect of intangible asset investigated in this thesis is the innovative culture of firms. In order to uncover this aspect, the participants were asked about their views on the benefits of possessing encouraging innovative and entrepreneurial cultures in their firms as outlined in Question 21 of the interview protocol. In addition, the participants also shared several approaches to cultivating organisational innovation in their firms, which will be briefly discussed in the second part of this section.

a) Benefits of Possessing Organisational Innovative Culture
The matrix-coding query from the NVivo has uncovered five main benefits of encouraging innovative culture in firms, especially on the sustainability of Bumiputera NTBSFs, as shown in Table 6.7.
Table 6.7: Benefits of Possessing Innovative Culture

<table>
<thead>
<tr>
<th>Sources</th>
<th>New Product or Technology Development</th>
<th>Affect Firm Performance</th>
<th>Fulfil Customers' Needs and Demands</th>
<th>Enhancement of Knowledge</th>
<th>Firm's Good Image</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coding References</td>
<td>16</td>
<td>10</td>
<td>7</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>References</td>
<td>19</td>
<td>13</td>
<td>8</td>
<td>7</td>
<td>4</td>
</tr>
</tbody>
</table>

The first reason is to stimulate the ability of Bumiputera NTBSFs to develop their new products or technologies, as remarked upon by 16 participants. Besides, ten participants believe that having an encouraging innovative culture would affect their firm’s general performance. The third benefit gained from having an innovative culture, as stated by seven participants, is enhancing their understanding of customer needs and demands. The fourth benefit is to enhance the level of organisational knowledge possessed by the firms. The last benefit of possessing encouraging innovative culture is to create a good image for the firms.

b) Cultivation of Organisational Innovation Culture Approaches

In table 6.8, the analyses from the interviews have uncovered four main approaches implemented by the Bumiputera NTBSFs to cultivate organisational innovative culture.

Table 6.8: Cultivation of Organisational Innovation Culture Approaches

<table>
<thead>
<tr>
<th>Sources</th>
<th>Effective Communication Channel</th>
<th>Organisational Developmental Activities</th>
<th>External Sources of Information and Knowledge</th>
<th>Teamwork</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coding References</td>
<td>17</td>
<td>15</td>
<td>13</td>
<td>4</td>
</tr>
<tr>
<td>References</td>
<td>31</td>
<td>35</td>
<td>13</td>
<td>4</td>
</tr>
</tbody>
</table>

The first approach is to provide effective communication channels between organisational members. Table 6.8 shows that this approach was mentioned 31 times by 17 participants in this study. There are several channels of organisational communication that have been implemented by the participants, namely face-to-face interactions and other mediums of communication such as via telephone or email. The analyses show that in creating an effective channel of communication in the organisation, several participants emphasised conducting face-to-face meetings amongst organisational staff either on a weekly or monthly basis. This is because the face-to-face interactions between founding entrepreneurs and employees may
also provide beneficial advice for employee improvement and career development. To illustrate this, Participant ICT1 stated that: ‘I usually have a talk and give them advice on how you want to start a company, start professionally, and brand yourself professionally so that if you meet with a good client, client will be confident with you’. Besides that, the implementation of meetings amongst the staff would enable the founding entrepreneurs to discuss any new development of the firms. According to Participant BIO4, the organisation of organisation monthly meeting would provide an avenue for her to brief and train her staff pertaining to the business operations activities.

The second approach of cultivating innovative cultures implemented by the Bumiputera NTBSFs, as suggested by 15 participants, is implementing organisational-based development activities amongst their members. In this respect, implementing continuous training amongst the Bumiputera NTBSFs is pertinent for the firm’s innovativeness, specifically R&D activities and employees’ skills enhancement. Therefore, the identification of training types should be tailored to the needs of their employees and sometimes the training will be organised at the request of employees. For instance, Participant ICT3 mentioned: ‘…they will request any training to management… when the time comes and when employees think that they need the training, they will propose to the company and the company will decide’.

The analyses also uncovered that some organisations implemented reward systems to their employees to cultivate organisational innovation in their firms. The reward systems implemented by the firms focus on their employees’ contributions towards the development of a firm’s new products or technologies, especially their ideas as well as commitment. Besides that, the participants would also expose their staff with real business practices in order to guide the employees about the current scenario in the industry. Interestingly, some participants (ICT1, ICT4, ICT10, BIO4, and BIO5) have also claimed that they would also provide support and assistance to their employees who have potential to venture into a business. To illustrate this, Participant BIO5 stated that one of his strategies to expand his business was by appointing his best employee to be his new business partner in a new business venture. Due to this strategy, this participant has managed to penetrate international
markets (in China) by forming a company that is managed by his ex-employee. He also mentioned:

We just did one deal with China. Actually this guy managed to create a product, our new product in the market and give him about ten percent share in that company. So, whenever we go overseas, we are actually using that company.

On the other hand, the cultivation of organisation culture could also be implemented via exploiting external sources of information and knowledge from other firms in the industry. This approach has been suggested by 13 participants whereby several ways of implementing the approach is through collaborations with other firms as well as seeking other parties’ advices or opinions. The collaboration between entrepreneurial firms with other organisations could be explained in terms of limited resources and expertise. Hence, having collaborated with other external parties has assisted the participants in conducting innovative activities in their firm. This can be seen from the case of Participant BIO4, where her company collaborated with the Standards and Industrial Research Institute of Malaysia (SIRIM) in developing her products. This participant stated: ‘We are developing this (the product) with SIRIM, whereby we’re testing our sample and the cost includes the fees to SIRIM consultants, costs of using their labs as well as the materials’.

The last approach of cultivating an organisational innovative culture in a firm is forming a spirit of teamwork amongst the employees, as suggested by four entrepreneurs-participants. In regards to this, the success of a firm’s business operation and growth is considerably influenced by the ability of employees to work as a team. This can be seen in the following extracts: BIO5: ‘We are actually working as a team. The team succeeds and the company will succeed’; ICT2: ‘Without any of us, the business wouldn’t be growing like this. It is not only me. Any of us would do it. Yes, we work as a team’.

Based on the above extracts, participants also agreed that the success of a firm is not only dependent on the ability of the founding entrepreneur, but a good combination of teamwork is considered much more important, specifically in cultivating organisational innovation via R&D activities. For example, Participant BIO5 stated: ‘Our R&D team is about four and they are led by a guy with PhD, who previously worked at the RRIM (Rubber Research Institute of
Malaysia). Thus, having good synergy amongst employees is pertinent for fostering organisational innovation as well.

The next section will elaborate the issue of IPRs amongst Bumiputera NTBSFs, especially pertaining to current practices and implications towards a sustainable business.

### 6.2.3 Intellectual Property Rights (IPRs) and Business Sustainability

Another aspect of firm’s intangible assets that has been investigated is the contributing roles of IPRs towards the sustainability of Bumiputera NTBSFs. In exploring this phenomenon, Question 20 from the interview protocol was asked of the entrepreneurs-participants in order to uncover their perceptions about the importance of possessing IPRs for their business sustainability. Further, this section also uncovers the current IPRs practised by the participants and the issues that hindered their IPR implementation.

Generally, most of the participants agreed that the possession of IPRs for their offerings were important to ensure their sustainability in business. From a different perspective, Participant ICT8 suggested that the necessity to apply for IPRs for a firm is conditional: ‘It’s really important if the product is really different. So, if your product is an innovative and novel, you have to apply for the IPR’. Nevertheless, Participant ICT7 contended that the possession of IPRs for his firm is not really necessary due to level of imitation faced by the business ventured by the firms, as shown in the following quote: ‘I think this is not really necessary as in the ICT industry, if you just change few things and it can be your product. Meaning that, at this moment we need to continuously innovate’.

**a) Reasons Why IPRs are Important**

The matrix coding query has uncovered three main reasons why IPRs are important for the sustainability of a firm: (a) protection from imitation or duplication, (b) increase firm’s value and reputation, and (c) firm’s financial standing.
The most striking outcome as to why IPRs are important for their sustainable business operations as shown in Table 6.9 is the protection of products from imitation or duplication by others, which was cited 23 times by 18 participants. In general, imitation or duplication of a firm’s products by competitors in the industry would effectively steal the rights of the firm. This wrong action by the competitor would affect the ability of the entrepreneurs-participants to manage their business in the future if their products or rights have been stolen by the competitors and no legal action could be taken by them without any IPR (ICT10). One participant stated: ‘This IPR would help us to prevent other people to steal our own right by imitating or improvising our products and claim as theirs’ (ICT12).

The second reason why the firms need IPRs for their business is due to the increased value of firms and the reputation created from the possession of IPRs, as remarked by seven participants eight times in the interviews. In this respect, the business stakeholders such as customers or suppliers would recognise the reputation of the firms, especially in regard to their innovative offerings. For instance, Participant ICT1 stated: ‘By having IP, our company would have some value added and differentiate ourselves from others. Thus, people might know that I have my own products and we’re not just like a normal trading company’.

Lastly, the implication for a firm’s financial standing by possessing an IPR has also been cited eight times by six participants in this thesis. The financial standing of the firms could be derived from the two benefits as mentioned earlier as the entrepreneurs could protect their rights and reputation through the IPRs. Additionally, Participant ICT12 stated that: ‘IPRs might also benefit us towards the generation of profit by selling our own IPRs to others in case they want to use our IPs’.

b) The current IPRs practices

Even though the entrepreneurs realised the positive implications of possessing IPRs, nevertheless, the level of IPR practice amongst the participants in this thesis has shown that
only a few of the participants have obtained IPRs for their products or technologies invented, as shown in Table 6.10.

**Table 6.10: The Current Practices of IPRs**

<table>
<thead>
<tr>
<th>Sources</th>
<th>Approved</th>
<th>In Preparation</th>
<th>Consider in future</th>
<th>Just Keep as Trade Secret</th>
<th>Do not need</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coding References</td>
<td>5</td>
<td>7</td>
<td>11</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Coding References</td>
<td>5</td>
<td>8</td>
<td>12</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

Meanwhile, seven participants stated that they were in preparation to apply the IPRs for their firms. In this respect, the entrepreneurs might conduct some information search from the MyIPO in order to get a better idea on the correct procedures to apply the IPR (ICT4). Further, the preparation of relevant documents that need to be sent to the MyIPO (the authority) in applying for IPR have been implemented in this stage, as stated by Participant ICT5: ‘We just began to arrange several documentations for applying IP for our product and currently still in the process to be sent to the MyIPO’.

Almost half of the participants have considered applying for the IPRs for their products or technologies invented. Most of participants in this category were still in the process of developing their products or in the final stage of their new product development. Due to this, the entrepreneurs stated that they would consider submitting an application to get an IPR for their new product. Participant ICT14 noted: ‘We are really well aware of the importance of the IPR but before taking our step further, we want to make sure our new system (IT application) is working’.

Interestingly, three participants did not consider applying for IPRs for their products because they have opted to just keep their invented products or technologies as trade secrets. One of the main concerns of entrepreneurs in patenting their products was the disclosure of their product information to the MyIPO or other related organisations. For instance, Participant BIO2 stated: ‘Our current strategy is to keep our technology as a trade secret due to its simplicity and I’m afraid somebody else my imitate it. That is why we do not want to patent it’. On the contrary, only one participant perceived that there was little need for his firm to
apply for any IPRs in operating the business. The analyses from the interview have also uncovered several issues in regard to the implementation of the IPRs amongst Bumiputera NTBSFs.

c) Issues Related to the Current IPRs Implementation
The interviews uncovered five main issues regarding the implementation of IPRs’ amongst the Bumiputera NTBSFs as shown in Table 6.11.

Table 6.11: Issues Related to IPRs Implementation

<table>
<thead>
<tr>
<th>Sources</th>
<th>Discouraging Culture</th>
<th>Complicated Procedure</th>
<th>Trade Secret Disclosure to Others</th>
<th>Costly</th>
<th>Time Consuming</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coding References</td>
<td>11</td>
<td>6</td>
<td>6</td>
<td>5</td>
<td>4</td>
</tr>
</tbody>
</table>

The matrix coding query as shown in Table 6.11 has revealed that the discouraging IP culture was stated as the main issue that hindered current practices of IPRs amongst Malaysian Bumiputera NTBSFs whereby ten participants cited this issue eleven times during the interviews. This discouraging culture of the IPR practices as viewed by the participants could be seen in terms of the lack of enforcement by the authority to take action against any person who breaches the IPRs of the firms (BIO3). Additionally, lack of awareness and understanding of the importance of IPs in protecting a firm’s product (BIO1 and OTH1) amongst the entrepreneurs might also contribute to this discouraging culture, as illustrated in the following quote: ‘Malaysian entrepreneurs are not really aware about the importance of patenting their invented products and even some of them do not really know their rights in protecting their products’ (BIO1).

This situation may also be derived from the ignorance of the entrepreneurs who focus only on the profit generation rather than thinking about the long-term effect that their firms would face without the IPRs, as raised by Participant ICT12: ‘Some entrepreneurs might think that it is not compulsory to apply IPR for their company’s products as long as they can sell their products’. From another perspective, the discouraging culture on this issue may also be influenced by the nature of the fast technological change as well as the level of product
complexity in several areas in the technology-based industries such as in the IT industry. For instance, one participant stated:

IT-based product is considered one of the product types that is difficult to get patented due to piracy issues faced by the entrepreneurs. Other users could easily change steps in programming and eventually we would lose our right on that product (ICT6).

In addition, five participants viewed that the process of applying IPRs for their products or technologies was complicated, especially in terms of procedures involved in applying for the IPRs. This is because the entrepreneurs need to know in detail what type of property could be protected through IPRs. Participant BIO3, who is involved in the plant tissue culture technology, stated that she could not patent plants produced by them, she could protect the technology developed by her to produce the plants. Moreover, the customisation of a firm’s products based on customers’ needs would make it difficult for the firm to patent all their products. In this regard, Participant ICT12 suggested:

We are developing a system whereas this system might face several changes due to different customers’ requirements. Hence, not every firm’s property can be patented. Perhaps, in terms of our overall idea, name, modules as well as our own mobile applications we can apply for the IPs.

The third issue as stated by five participants is their hesitation to disclose details regarding their new products or technologies as required by the MyIPO. The disclosure of the products’ details may include ingredients used and methods applied in developing the products. Some entrepreneurs have expressed their concern about the confidentiality of the information disclosed, as stated by Participant ICT7:

I need to declare technique that I used in order to patent my product for their staff (MyIPO) to assess the novelty of our product. But, if the patent could easily be seen to public, I think it is better for us not to patent our product.

The forth issue that emerged in this thesis was the costs involved in applying for the IPRs, as remarked by five of the participants. Moreover, these new technology firms were having limited financial resources to apply for the IPRs, whereby Participant ICT9 stated that he would only consider getting the IPRs for his products after his firm is financially stable.
Lastly, three participants claimed that the application for IPRs is time consuming and this would demotivate them to apply due to the fast technological change in the industry. As a result of this, Participant ICT14 stated: ‘The time taken for patenting our IT products might take years. Upon the approval, the products have become absolute and there would be pirated version available in the market. This is not good for our financial standing’.

The next section uncovers the third aspect of a firm’s capabilities and intangible assets, namely business strategies adopted by the participants in sustaining their business.

6.3 FIRM’S BUSINESS STRATEGIES

Another theme to emerge from the firm-specific resources was the business strategies adopted by the entrepreneurs-participants in sustaining their business operations (Figure 6.3).

Figure 6.3: Firm’s Business Strategies Thematic Analysis Model

The Bumiputera technology entrepreneurs have adopted several types of strategies. The matrix-coding query, as shown in Table 6.12, examined business strategies was commonly adopted.

<table>
<thead>
<tr>
<th>Sources</th>
<th>Product Differentiation</th>
<th>Technology</th>
<th>Customer Service</th>
<th>Business Diversification</th>
<th>Cost Competitiveness</th>
</tr>
</thead>
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<td>11</td>
<td>8</td>
</tr>
</tbody>
</table>

The product differentiation strategy has emerged as the most cited business strategy adopted by the entrepreneurs in sustaining their business. The competitive business environment faced
by the entrepreneurs has required them to differentiate their product’s features from their competitor’s (ICT13). In this respect, Participant ICT15 suggested: ‘It is crucial for the technology firms to provide more innovative and marketable products than other firms in order to gain business success’. Through this strategy, Participant ICT9 proposed that the entrepreneurs should examine the current situation in the market, such as customer need, in order to come out with a new product offering. Moreover, the differentiation could be achieved by creating additional values of the products such as their quality and unique features (BIO1, BIO3 and OTH3). On the other hand, the entrepreneurs might also differentiate their product positioning through a good marketing strategy such as branding and advertising. For instance, Participant ICT10 stated: ‘We differentiate our product (E-Quran) with a learning centre by creating a trademark that makes our customers feel proud in engaging with the product’.

The second strategy employed by 18 entrepreneurs-participants is the embracement of technological advancement in the industry. This strategy is realised through the development of a new technology or technological upgrading and some entrepreneurs stated that the inability of a firm to embrace the latest technology would impede their business growth and sustainability. For instance, Participant ICT15 noted: ‘Due to the fast pace of technological change, our business could not be sustained if we do not follow the technology and grab the opportunity to be a leader of that technology’. This is because the embracement of the current technology by the firms would provide a better advantaged position in the market than their competitors (ICT7 and BIO3). For instance, Participant BIO6 stated: ‘I’m the only Malay who is currently doing the floating feed in the feed technology industry in this state. It gives me more advantage in selling my products, especially with government agencies’.

The third business strategy as stated by 13 entrepreneurs-participants is providing good customer service, specifically by attending to all customer needs and wants. The ability of the firms to deliver quality services to customers would have a positive effect towards a firm’s financial standing, as suggested by Participant ICT3: ‘Once they (customers) are satisfied, when they meet people who need the same service like them, they will propose your business’. Indeed, the customers would also loyally engage with the firm’s products due to
their satisfaction towards their customers’ services. Further, some entrepreneurs mentioned that they would service their customers beyond their expectations such as providing after-sale services and making a regular communication with them (BIO1, BIO5 and OTH1). Additionally, providing good customer service may also assist the entrepreneurs to build their reputations in the eyes of their customers, as stated by Participant ICT4: ‘When we render good service to our customers and build a good relationship with them, we eventually build our reputation’.

Diversifying business activities is the fourth strategy adopted by eight entrepreneurs in order to survive in the industry. The entrepreneurs venture into other types of business, either in the same industry or a different industry to generate more income and eventually sustain their business. For instance, Participant IC1 was not only involved in the system development business activities, but he was also ventured into the advertising business in order to generate more income based on the IT skills he possessed. As a result of business diversification, the generation of profit in one of their business portfolios would assist the entrepreneurs to cover any loss generated in other business, as stated by Participant OTH2: ‘I need to explore any business opportunity to sustain my business, especially through diversification of my business portfolio as this would help me to back up my business profitability’.

The last business strategy adopted by the participants is cost effective strategy whereby the entrepreneurs offer their customers a lower cost of products with the same quality offered by their competitors. Indeed, Participant ICT14 stated that the ability to offer a quality IT system to the customers at a lower price is an important selling point of his firm. Interestingly, the entrepreneur may also sell their product or services to any overseas customer in developed countries at a lower price due to that country’s cheaper currency (ICT4). This strategy would attract potential customers to buy the firm’s products or services, as suggested by one biotechnology entrepreneur: ‘These recent years as the economics were not really good, customers are generally looking for a cheaper price and even some of them are not really concern about product quality’ (BIO6).
6.4 Summary
The purpose of this chapter was to explore the contributing roles of firm-specific resources possessed by the Bumiputera technology entrepreneurs in sustaining a business. Findings from this chapter shed some light on answers to the second sub-research question of this thesis. In particular, three main aspects of firm-specific resources uncovered from the data analysis, namely firm’s social capital, firm’s capabilities and intangible assets, and firm’s business strategies appeared to be crucial resources that entrepreneurs need to develop in order to sustain their business, as shown in Figure 6.4.

From the evidence, this chapter shows how the entrepreneurs came out with several approaches or strategies to exploit these resources in operating their business. The first firm-specific resource uncovered was firm’s social capital, whereby this capital concerns how the firms want to leverage their business networking and to leverage their business reputation in the eyes of their stakeholders. It was interesting to note that both aspects of firm’s social capital concerned on the ability of a firm to leverage its business through collaboration with other firms or organisations. For instance, the collaboration between an entrepreneurial firm and a multinational company (MNC) is not only able to build a symbiotic relationship, but this can also increase the firm’s reputation of the entrepreneurial venture. In Chapter Seven, the business stakeholders’ make several efforts to help entrepreneurial firms to leverage business networking via business matching programs. One unexpected aspect that emerged in this section is the intra-firm relationship between a firm and its employees and partners. Indeed, this finding suggests that the entrepreneurs should also emphasise the welfare of their employees as these people are considered an asset for the company in operating the business.
Figure 6.4: Firm-Specific Resources Thematic Analysis Model

Source: Author
The second aspect of firm-specific resources investigated in this chapter is the firm’s intangible assets and capabilities. Analysis of the data uncovered three main intangible assets and capabilities which might lead to the sustainability of a firm: R&D capabilities, a firm’s innovative culture and IPRs of a firm. Being involved in technology-based business, all participants agreed that R&D activities are crucial to ensure their firms’ ability to develop new offerings that can fulfil the current market needs. To ensure this process can be operated smoothly, the firms need to inculcate an encouraging innovative culture in the organisation. This can be done via several approaches that have been uncovered in the analysis such as providing effective communication channels and forming a teamwork spirit amongst the organisational members. In addition, the analysis showed that it was somewhat surprising that so few participants (less than half) have applied for the IPRs for the firms’ products and technology. This was despite the majority of participants agreeing that having IPRs were important to protect their products, to increase the firm’s reputation and financial standing. This could be explained in terms of a secrecy agenda where the entrepreneurs did not want to disclose methods or materials used in producing the products or technologies.

Lastly, having a good business strategy has emerged as the third resource that should be developed by the entrepreneurial firms in sustaining their business. In practice, there is no absolute strategy that should be employed by the entrepreneurs as the selection of business strategies should be in line with the firm’s business nature and products. Nonetheless, a majority of participants have emphasised the product differentiation strategy in operating their business as they believed that the capabilities to produce a quality product that fulfils customer preference might increase their profit.

In the next chapter, Chapter Seven, a thorough analysis on the roles of business stakeholders towards Bumiputera sustainable business ventures will also reflect on how these stakeholders play a role to enhance the firm-specific resources possessed by the entrepreneurs.
CHAPTER SEVEN

ANALYSIS: BUSINESS STAKEHOLDERS

7.0 INTRODUCTION

This chapter aims to uncover the main roles played by business stakeholders of the Bumiputera entrepreneurial firms, especially their roles in assisting the firms to sustain their business in the long-term. This chapter guides the researcher to answer the third sub-research question of this thesis: ‘To what extent the business stakeholder’s support impacts the ability of Bumiputera NTBSFs to sustain their business?’ Three main stakeholders were chosen in this thesis: government officers, university academics and policy makers. The next section will discuss the roles played by each stakeholder. A summary is provided at the end of this chapter.

7.1 ANALYSIS EMERGED FROM THE INTERVIEWS WITH GOVERNMENT OFFICERS

This section’s goal is to understand the role of government agencies in assisting the entrepreneurial technology-based small firms in sustaining their businesses, especially among Bumiputera-owned firms. Nine government officers from eight government agencies were interviewed in order to get their insights on how the government put considerable emphasis in providing assistance and support to the firms. It also explores any issue which might accelerate or escalate the effectiveness of providing such measures to the entrepreneurial technology-based small firms. The profile of government officer-participants are summarised in Table 7.1.
Table 7.1: Profiles of Government Officer-Participants

<table>
<thead>
<tr>
<th>Participant</th>
<th>Position</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOV1</td>
<td>Manager</td>
<td>To manage the development of Bumiputera ICT firms through the implementation of various entrepreneurship programs.</td>
</tr>
<tr>
<td></td>
<td>Bumiputera ICT Entrepreneurship (BITE) Unit, Technopreneur &amp; Enterprise Division, Multimedia Development Corporation (MDeC)</td>
<td></td>
</tr>
<tr>
<td>GOV2</td>
<td>State Director</td>
<td>To administer the promotion of the manufacturing and services sectors in the state and to assist companies which intend to invest in the manufacturing and services sectors.</td>
</tr>
<tr>
<td></td>
<td>Malaysia Industrial Development Corporation (MIDA)</td>
<td></td>
</tr>
<tr>
<td>GOV3</td>
<td>Assistant Vice President</td>
<td>To manage the incubation matters, especially promotion and commercialisation of local research and to bring in new technologies from abroad.</td>
</tr>
<tr>
<td></td>
<td>Incubator Services</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Malaysia Technology Development Corporation (MTDC)</td>
<td></td>
</tr>
<tr>
<td>GOV4</td>
<td>Patent Examiner Officer</td>
<td>To examine the intellectual application and provide related information in relation to IPs.</td>
</tr>
<tr>
<td></td>
<td>Intellectual Property Corporation of Malaysia (MyIPO)</td>
<td></td>
</tr>
<tr>
<td>GOV5</td>
<td>Senior Assistant Director</td>
<td>To administer the development of Bumiputera entrepreneurship that comprises the cultivation of entrepreneurial culture and providing necessary support to the entrepreneurs.</td>
</tr>
<tr>
<td></td>
<td>Entrepreneur Development Department, Council of Trust for the Indigenous People (MARA)</td>
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</tr>
<tr>
<td>GOV6</td>
<td>Manager</td>
<td>To manage the development of Bumiputera ICT firms through the implementation of various entrepreneurship programs as well as to liaise the programs with other government agencies.</td>
</tr>
<tr>
<td></td>
<td>Government Relation &amp; BITE Unit, Technopreneur &amp; Enterprise Development Division, Multimedia Development Corporation (MDeC)</td>
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<tr>
<td>GOV7</td>
<td>Assistant Manager</td>
<td>To process the applications of funding made by the industrial firms amongst the SMEs and providing the necessary information.</td>
</tr>
<tr>
<td></td>
<td>SME Bank (An agency under government)</td>
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</tr>
<tr>
<td>GOV8</td>
<td>Assistant Manager</td>
<td>To act as the central point of reference for information and advisory services for all SMEs in Malaysia.</td>
</tr>
<tr>
<td></td>
<td>Corporate Communication Division, Small and Medium Enterprise Corporation Malaysia (SME Corp.)</td>
<td></td>
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<tr>
<td>GOV9</td>
<td>Manager</td>
<td>To administer the progress of biotechnology activities in Johor state.</td>
</tr>
<tr>
<td></td>
<td>Corporate Services</td>
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<td></td>
<td>Johor Biotechnology and Biodiversity Corporation (J-BioTech)</td>
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Fundamentally, each government agency that is involved in the entrepreneurship development has its specific roles. Through thematic analysis as shown in Figure 7.1, seven main roles have been identified as important for the government agencies to assist the entrepreneurial firms in operating and sustaining their businesses.
In order to examine the roles as stated by each government officers-participants, Table 7.2 provides a content analysis via a coding-matrix query generated from the NVivo. This table shows government officer’s perceptions of the roles of their agencies in assisting the Bumiputera entrepreneurs in technology-based industries.

### Table 7.2: Coding Matrix Query: Roles of Government-Officers Participants

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<th>GOV2</th>
<th>GOV3</th>
<th>GOV4</th>
<th>GOV5</th>
<th>GOV6</th>
<th>GOV7</th>
<th>GOV8</th>
<th>GOV9</th>
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<tr>
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#### 7.1.1 First Role: Entrepreneurship-Based Training and Business Development Programs

The implementation of entrepreneurship-based training is the first role played by the government agencies to assist the Bumiputera firms in sustaining their businesses. This role
has been made known by seven government participants. The main objective of implementing entrepreneurship training is to provide the necessary skills and knowledge needed by the firms in operating and sustaining their businesses (GOV8). With regard to this, several government agencies have provided ongoing business training for the small firms whereby these training sessions might cover several important aspects of business management such as basic financial management and marketing. For example, Participant GOV4 stated that the MyIPO has established the Intellectual Property Training Centre (IPTC) that aims to provide training and research services to inventors or business owners in order to enhance their IP human capital. For example, she suggested: ‘The entrepreneurs could be able to do their own patent drafting by attending courses offered by our organisation (GOV4).’

From another perspective, Participant GOV7 stated that MARA has also introduced a mentor-mentee program that aims to train new Bumiputera firms to operate their businesses at MARA industrial business premises. Under this program, the mentors were appointed among successful Bumiputera entrepreneurs who will train several Bumiputera newly-established firms in terms of business aspects such as marketing and business operations. Interestingly, Participant GOV7 said that this program has managed to create a diaspora of Bumiputera firms in the industry. Besides that, the implementation of training may also be seen as a platform for the government agencies to inform the latest government policies as well as any available incentive offered to the entrepreneurial firms such as financial assistances and business support (GOV3 and GOV7). Additionally, this training will be able to nurture entrepreneurship amongst the Bumiputera community. One respondent stated:

Together with MARA, we have started to organise several series of training in a few states. Our training are a basic program that puts emphasis on the enculturation aspects of entrepreneurship development whereby the training aims to acculturate entrepreneurial minds and behaviour of potential entrepreneurs (GOV1).

Indeed, several government agencies are implementing entrepreneurship training programs for the university students in order to encourage the students to choose entrepreneurship as their career choices, as stated by Participant GOV7: ‘At the SME Bank, we are conducting the Graduate Entrepreneurship Scheme focusing on Bumiputera graduates to encourage them to become entrepreneurs.’
In addition, Participant GOV6 stated that her organisation had conducted several training sessions under a program called ‘UniTech’ that aims to inculcate entrepreneurial mindsets as well as to give early industrial and business exposure in the ICT industry to the students. This is because the implementation of entrepreneurial training amongst students at the higher education institutions (GOV6) is conducted to train the student to think creatively and exposed to the current business scenario.

7.1.2 Second Role: Implementation of National Policies and Statutory Frameworks

The NVivo analysis uncovered that the government agencies are responsible to implement national policies and statutory frameworks as formulated by the policy makers, the legislative authority of the country. With regard to the node ‘Implementing national policies and statutory frameworks’ from the NVivo, 26 coding references have emerged from eight respondents. In this respect, the participants predominantly mentioned two main aspects related to this role, namely: (a) assistance to Bumiputera technology entrepreneurs, and (b) the development of technology-based industries.

Delving into these three aspects, 13 coding references have emerged from six participants regarding to the policy of the government to provide assistance to the Bumiputera technology entrepreneurs. The disadvantage scenario faced by the Bumiputera society in the Malaysian business landscape has called for the government to intervene through formulation of national policies. This can be traced back to 1970 when the government introduced the NEP as a main policy that aimed to increase the economic participation of Bumiputera community. In relation to this, Participant GOV2 noted:

Since our independence about 50 years ago, several policies have been introduced by the government…in 1970s, we started the New Economic Policy, and in 1980s we focused with the industrialisation. This creates change and makes our Bumiputera something as we simply look at our ancestors’ hard times, my generation and your generation is totally different now.

Moreover, a lack of business and financial resources faced by the Bumiputera entrepreneurs has hindered their ability to develop new products and technologies and eventually to commercialise their firms’ outputs. The development of a new technology through R&D
activities requires a lot of money, and having realised this situation, Participant GOV3 recommended: ‘Bumiputera entrepreneurs could produce a good, yet they do not have financial resources to the market the product.’ As a result, the government has assisted the Bumiputera technology entrepreneurs through business grants. Not surprisingly, the recipients of the MTDC grants (product development grant and commercialisation grants) include many Bumiputera technology entrepreneurs (GOV3). In addition, the socioeconomic situation of the Bumiputera community in terms of the participation in the industrial sector is less favourably compared with other ethnic groups in Malaysia, especially the Chinese. Therefore, a few government agencies have taken a role to provide necessary support as suggested by Participant GOV2:

Unfortunately, the Bumiputera entrepreneurs don’t have their own (products) as they’re not coming from a rich family and not receiving support from the society. That is one of the reasons why the government is looking to help the Bumiputera to enhance their capability and to develop ideas into to the next steps which is the production stage

Besides the allocation of financial assistance, several government agencies have established a special unit of Bumiputera entrepreneurship development under their organisational structure. Indeed, several government officer-participants interviewed in this thesis were working with those special units and involved directly with the development of Bumiputera entrepreneurial firms. The establishment of these special units indicates the commitment of the government to assist the Bumiputera firms in operating their businesses via various types of training and programs. For example, Participant GOV7 stated that the creation of a special unit of Bumiputera entrepreneurship in her organisation has put more priority on approving financial assistance to the Bumiputera firms. In another example of the role of this special unit, Participant GOV7 explained: ‘I’m a manager for the BITE unit and our target customers are the Bumiputera community. We are responsible in terms of the grassroots of Bumiputera, especially towards those who want be an entrepreneur and even seasoned entrepreneurs.’

The second aspect that has been emphasised by the government officer-participants related to the implementation of the national policies that was related to the development of the technology-based industries. In the biotechnology industry, for instance, the Johor state government has established the J-BioTech as a state-owned corporation that aims to develop
biotechnology industry in the state, as outlined in the National Biotechnology Policy. In regard to this aspect, Participant GOV9 noted:

> For our master plan, we are a state government agency that is responsible to manage all biotechnology activities in Johor. Meaning that, any biotechnology-based entrepreneurship in this state is under our jurisdiction or job scopes and this might include the development of biotechnology firms’ database.

In a similar vein, the establishment of the technopreneur development division (TTD) in the MDeC in 2000 emerged as the eighth flagships in the development of the MSC Malaysia. The establishment of this division has been considered a starting point of developing ICT-based entrepreneurship in Malaysia, as Participant GOV1 said:

> Since then (the establishment of TTD), MDeC has been entrusted to come up with development programs for the technopreneur, specifically in ICT industries as outlined in the MSC master plan, and my involvement has been for the development of Bumiputera developed ICT entrepreneur only.

From another perspective, the focus of the industrial policies by the government has also shaped the direction of the government agencies in providing funding to the entrepreneurial firms. Participant GOV7 stated:

> Besides the manufacturing sector, we are also giving loans to those entrepreneurs who are involved in the ICT sector. For the biotechnology sector, we are in the process and will look forward into this industry. Yet, if a biotechnology is doing a business in the agriculture subsector, we will refer them to AGRO bank.

### 7.1.3 Third Role: Business Matching and Networking

The third role of government agencies to assist and support the Bumiputera technology-based firms, as stated by eight respondents, is business matching and networking. The government agencies will try to identify any potential partner for entrepreneurial firms to collaborate with based on synonymous interests. The activities of business matching between firms in the industry will enable the identification of business opportunities and eventually will lead to potential business collaborations, as stated by Participant GOV1:
We are trying to develop these Bumiputera companies by organising a session between them and other government-linked companies (GLCs) in order to give them an opportunity for them to introduce their products and services and providing them a platform to leverage their business network.

Besides that, the business matching organised by these government agencies aims to provide relevant information about business facilities and assistance provided by other agencies (GOV3). Indeed, Participant GOV6 suggested the government agencies may also act as a facilitator between the firms and other organisation as they will advise and guide these firms to get assistance from relevant agencies. For instance, the MDeC will organise a program called InnoTech that would gather several technology entrepreneurs, industry players and venture capitalists, either local or international VCs, to give an opportunity to technology firms to pitch their ideas to the VCs. This eventually may lead to funding opportunities (GOV1).

In addition, the business matching conducted by the government agencies may also lead to potential collaboration between emerging entrepreneurial firms with other international companies. One participant stated: ‘If ten companies are going for a trade mission overseas under us, we will try to bring at least two Bumiputera companies to give them an opportunity to market their products there’ (GOV6). In this respect, Participant GOV2 suggested that his organisation has developed a comprehensive database of Malaysian companies, manufacturer and technology providers, called E-Connect. On its website foreign investors may look into and seek potential joint-venture project and business collaboration.

Besides that, the business matching and networking activities implemented by the government agencies may also provide a platform for the Bumiputera firms to further develop their technology by sharing resources and research facilities. Due to this fact, there were five respondents who suggested that the business matching and networking could be also implemented via collaboration with the entrepreneurial firms’ technological development with universities and research institutions (GOV2, GOV3, GOV5, GOV6 and GOV9). In this regard, the government agencies will be the connecting bridge between the firms and universities, as stated by Participant GOV3: ‘We will arrange collaborations between our fund
recipients that are mostly technology entrepreneurs with universities as they have the expertise for the R&D activities and good research facilities’.

7.1.4 Fourth Role: Providing Financial Assistance

Financial constraints faced by the entrepreneurs hinder their expansion and even their ability to sustain their business in future (GOV9), as one participant suggested: ‘In order for the firm to go the next level, funding is the keystone for them to move up’ (GOV5). Having recognised this situation, the NVivo analysis from the interviews shows that 20 coding references under financial assistance node have emerged from eight participants. This indicated that the provision of financial assistance to the Bumiputera firms is one of the main roles played by the government.

As mentioned in the previous section, the provision of financial assistance might also be considered as an indirect (intangible) business facility provided by the government to assist the Bumiputera firms. With regard to this, several government agencies have allocated several types of financial grants to the Bumiputera firms in which the allocation of these grants are normally given based on their needs as well as their current business stages. For instance, potential start-up firms are eligible to receive pre-seed grants from the government in order to develop their initial business ideas into viable product prototypes. Taking an example from the biotechnology industry, the BioTech Corp could offer pre-seed funds up to RM2.5 million for each firm in order to help the start-up biotechnology firm to establish its business operations, particularly in terms of implementing Biotechnology-based R&D activities (GOV9). The provision of this pre-seed grants aim to encourage more entrepreneurial ventures into the biotechnology industry that is relatively emerging sector in Malaysia. Besides that, the endowment of pre-seed funds could also be seen as governmental efforts to increase the number of entrepreneurial firms in the country, especially amongst Bumiputera community. For instance, the BITE division under MDeC has offered a pre-seed fund in term of conditional grants of up to a maximum of RM150000 to facilitate the transformation of innovative ideas into viable business products amongst Bumiputera ICT-based start-up firms. As a result of this, Participant GOV6 claimed: ‘For the pre-seed recipients under the
Technopreneur Development Unit, 52 percent of the recipients are Bumiputera as this program is directly supervised by our division’.

In addition to allocation of pre-seed funds to the start-up firms, the government has also offered other types of financial assistance to entrepreneurs to emerging firms and established firms, especially firms that are involved in the technology-based businesses. The development of a new technology by the entrepreneurial firms requires a lot of financial injections, and hence, the provision of specific research grants by the government would assist these firms. One of the participants noted: ‘The grants are given based on the business stage of the entrepreneurs such as technology acquisition fund (TAF) or commercialization of R&D fund (CRDF) that are specialised to technology firms’ (GOV3).

Nevertheless, the implementation of the liberalisation policy in 2009 by the Malaysian government has shifted the allocation of financial assistance given more soft loans rather than grants, as presented by five participants (GOV1, GOV2, GOV6, GOV8 and GOV9). One of the apparent examples is the transformation of SMIDEC into SME Corps in October 2009, whereby one participant noted:

Before this, we were known as SMIDEC that was also known by many parties as the grant provider to the SMEs. After we got re-branding to the SME Corp Malaysia last year, we instantly abolished the endowment of grants (GOV8).

Likewise, several government agencies had also been affected by this new policy as these agencies are no longer providing any grant to the entrepreneurial firms as been shown in the following quotes:

The government didn’t give us the money anymore for the grants. But, they asked us to identify the EPP or Entry Point Project whereby we will identify a project and become a platform or facilitator for the entrepreneurs to get assistance from other relevant agencies (GOV6).

If we look at the current situation, all grants have been abolished and changed to conditional loans (GOV8).
The abolition of many grants to the entrepreneurial firms has also indicated that Bumiputera entrepreneurs may not receive previous privileges as the government will provide the soft loans based on a firm’s merit. Participant GOV2 said that the liberalisation policy has changed the direction of the NEP that put priority to Bumiputera entrepreneurs because the government is going to be more open and will emphasise the new concept ‘1Malaysia’, which gives equal treatment to all races. As a result, Participant GOV1 suggested that this phase could be considered as a paradigm shift for the Bumiputera entrepreneurs, as shown in the following quote: ‘It is about change management, we are changing them from one paradigm to one paradigm. From getting free money (grants), they still get money (soft loans) but they have to be more accountable with the money.’

This strategic change may also have originated from misuse of financial assistance given to entrepreneurial firms, especially the grant recipients amongst the Bumiputera entrepreneurs. Participant GOV7 stated that there is a lot of funding available for Bumiputera entrepreneurs, yet she claimed that many of the recipients of these funding used the money irresponsibly. The misconduct of financial grants can be seen in terms of the usage of the money for self-interest rather than for the development of a firm, as stated by Participant GOV6: ‘Malay entrepreneurs when they got business contracts or projects, they would immediately buy a luxurious car or anything for themselves.’ Besides that, the irresponsibility of some Bumiputera entrepreneurs in repaying their loans to the government agencies has led to the insufficient funds available to be given to other potential entrepreneurs, as stated by one participant: ‘Some of them are reluctant to pay their loans and eventually we are not able to cycle our funds (GOV7).’ On the other hand, the outcomes of the grants’ recipients in terms of business performance and new product development are not really encouraging as some of the Bumiputera entrepreneurs could not manage their businesses successfully (GOV6). In this respect, one participant noted:

Sometimes the Bumiputera entrepreneurs want grants, loans and business premises facilities. They are supposed appreciate our assistance by put their efforts to show a good business performance. Frustratingly, some of them failed to do so and even few blamed for not getting enough assistance (GOV5).
Based on the above scenario, the government implements a monitoring system in order to ensure the effectiveness of the grants given to the recipients-firms. Through this monitoring system, the grant recipients are required to prepare an imbursement statement that reports all expenditures used in developing their products and relevant receipts. Indeed, the implementation of the new policy would train the Bumiputera entrepreneurs to consume the money that they receive accountably (GOV1). Besides that, several government agencies are also assisting the entrepreneurial firms by connecting the entrepreneurs with potential investors and venture capitalists to fund product development activities. An example of this endeavour is the establishment of a business dialogue between the entrepreneurial firms and venture capitalists or established firms (such as MNCs). This business dialogue can be seen as a platform for these companies and more importantly, to pitch to local and global venture capitalists and gain input on areas for improvement.

7.1.5 Fifth Role: Business Advisory and Consultancy

The first role played by the government towards the development of Bumiputera technology-based small firms is providing relevant business advisory and consultancy support to the entrepreneurial firms. The analyses showed that 14 coding references have emerged from node ‘business advisory and consultancy’ wherein seven respondents from the government agencies suggested that providing advisory support and consultancy to entrepreneurial technology-based small firms was one of the important roles played by these agencies, especially in assisting the firms with both business development and technological support (GOV1, GOV3, GOV5, GOV6, GOV7, GOV8 and GOV9). In regard to this role, Participant GOV8 stated that the transformation of SMIDEC into the SME Corp by the government in 2009 has changed the organisation’s role as a central point for SMEs in Malaysia to seek information and advisory services. Indeed, the SME Corp has also appointed several business counsellors to assist the organisation in providing free advisory services for eligible SMEs as well as to other people who want to venture into a business (GOV8). Besides the general business advisory services provided to the entrepreneurial firms, other specific business aspects are also provided by the government agencies to entrepreneurial technology-firms such as in marketing and financial aspects. One participant stated:
Knowing that the Bumiputera firms are lacking in terms of marketing aspects in business, MARA has appointed 188 consultants from various fields to help the Bumiputera entrepreneurs to position their businesses or products either in both local and international markets (GOV5).

Due to the advancement of technological development today, few government agencies are also providing technological assistance and advice to technology-based small firms by appointing mentors or technological consultants from successful firms in specific industries. For instance, in the ICT industry, Participant GOV6 stated:

The Bumiputera ICT entrepreneurs could approach to all our appointed mentors that we have selected from the top Bumiputera ICT firms and experienced industrial people whereby these mentors willing to help other entrepreneurs, especially newly-established ICT firms in terms of technological aspects’.

Meanwhile, in the biotechnology sector, Participant GOV9 stated her organisation will help the biotechnology firms to assess the viability of their technological inventions as well as to evaluate any paperwork prepared by the firms applying for BioNexus status from the BiotechCorp. She further explained:

It is a bit difficult for these new biotechnology firms to apply for the BioNexus status due to many criteria set by the BiotechCorp. Thus, they will ask our help in drafting a good and professional paperwork for that purpose.

7.1.6 Sixth Role: Business Facilities and Infrastructure

In order to create a friendly business environment in the country, the government has provided a comprehensive set of business facilities and infrastructure to the entrepreneurial firms, as remarked by seven participants. In this respect, participants have generally referred to the provision of the governmental business facilities and infrastructure based on tangible aspects only, such as providing business premises and industrial sites. For instance, the Johor state government has granted 10,000 acres of land to be developed as ‘Bio Desaru - The Green Food Valley’ that focuses on the biotechnology-agriculture industry (GOV9). With regard to this initiative, Participant GOV9 stated: ‘Our organisation is responsible to attract potential biotechnology firms to operate their businesses at the Johor biotechnology valley, whereby 18 biotechnology firms have established businesses at the granted industrial land.’
Besides the provision of industrial land, several government agencies have also allocated less costly or even fully-subsidised business premises to the entrepreneurial firms, as stated by four participants (GOV3, GOV5, GOV7 and GOV9). In this respect, Participant GOV5 said that MARA has provided industrial complexes in many districts in Malaysia for the Bumiputera entrepreneurs to increase the participation of Bumiputera community in business activities. Through this incentive, Bumiputera entrepreneurs will get cheaper rental for occupying government subsidised business premises rather than commercial premises. Further, few selected firms may also get free rental on business premises for one month if they pay on time. Even start-up firms could apply for a rental-waiver up to the first three months of their business operations.

Besides that, MARA has also established several business incubator centres for newly-established Bumiputera firms that ventured into technology industries such as ICT, creative multimedia, health biotechnology, and food technology (GOV5). In another example, Participant GOV7 pointed out that her organisation (MTDC) has designed a Technology Development Cluster Program (TDC) that aims to accelerate the development of the Malaysian technology industry. Through this program, several technology centres have been established as joint venture projects between the MTDC, local universities and industrial firms. Additionally, the collaboration with universities and other government agencies in this program has enabled these firms to obtain other support service such as a business advisory service and a technological assistance from the universities researchers. Indeed she claimed:

I believe that we provide such an attractive rate for technology entrepreneurs to rent our R&D spaces compared to other service providers, and in fact, we are also offering free of charge other facilities such as our training centre and meeting rooms to our tenants (GOV7).

Nevertheless, Participant GOV2 proposed that the infrastructure incentives provided by the government should not only be viewed in terms of physical infrastructure, but might also comprise other non-physical infrastructure, such as the availability of human capital and less bureaucratic business procedures that could influence the ability of the firms to operate their businesses. A few government agencies have taken the initiative to organise business incubation centres in order to create a pool of potential entrepreneurs who will be trained to
market and commercialise new technologies and products that are developed by universities and research institution. Additionally, the Malaysia government has established the Special Taskforce to Facilitate Business or known as PEMUDAH in 2007 in which one of its main objectives is to benchmark best practices to improve the ease of doing business (GOV1). One participant stated:

As far as what we have done, we are trying hard to make sure that the process of applying for our grants is easier for the applicants. If we look at this matter, things are getting better now because it used to take up to two months, but now it has been shortened to three days only (GOV1).

From another perspective, Participant GOV7 suggested that the provision of business facilities and infrastructure may also be seen as providing low interest soft loans to entrepreneurial firms to finance their business premises, machinery and working capital. This type of assistance will be discussed further in the next section.

7.1.7 Seventh Role: Nurture Entrepreneurial Culture

The node of ‘nurturing entrepreneurial culture’ has emerged nine times from five participants, whereby they have generally stated that entrepreneurial nurturing is one of the main roles played by the government in assisting the entrepreneurs to sustain in the business. The interviews revealed that the cultivation of entrepreneurial culture as mentioned by the government officers-participants is focusing on building future entrepreneurial human capital in the country, especially amongst the students (GOV9). In this respect, several government agencies have started to organise entrepreneurship-based training or talks to the students as early as in secondary schools. The main objectives of these programs is to give early exposure about being in business to youth, and importantly, to inculcate an entrepreneurial mindset which would enable them to be more innovative and dare to take risks to venture into a business in the future. Participant GOV6 noted: ‘We went there (educational institutions) as we wanted to teach them about new idea generation...innovation in order to inculcate their mindset of becoming a businessman or an entrepreneur’.

Additionally, some government agencies are also involved indirectly in preparing a blueprint of an entrepreneurship syllabus at several educational institutions. For instance, MARA that
has a number of educational institutions either from secondary school levels (e.g. the MARA junior science college) to tertiary higher education (e.g. Universiti Kuala Lumpur) has instructed these institutions to offer entrepreneurship subjects as part of an academic syllabus (GOV5). Besides that, MARA provides a certain allocation of financial assistance to selected entrepreneurship student clubs at several secondary schools in order to expose the students to a real business culture. In the same vein, Participant GOV6 believed that the indirect involvement of the government agencies might be able to train the students to think out of the box by bringing real industrial knowledge to them. This is because many students were just limiting their ideas within their scope of study, as Participant GOV6 claimed: ‘Some of them proposed an idea that already existed in the industry and this problem is not just among the students, but also to people who teaching them’. Therefore, the government agencies have appointed several trainers selected from successful entrepreneurs to share their business experience and to train the students to be more creative and innovative.

The government agencies have also implemented several series of entrepreneurship-based programs amongst those employees (government staff) who are considering taking early retirement and venturing into a business. This scheme was introduced by the government in order to nurture their staff to be entrepreneurial after retiring from the service, as Participant GOV7 stated:

Some government agencies have also asked us to give business talks amongst their staff as some of their staff chooses an early retirement. Through these programs, participants would be informed about available entrepreneurship programs (training) and financial funding or loans that we could offer to them.

From another perspective, the government can also nurture an encouraging entrepreneurial culture amongst the business firms by setting up collaboration between the industrial firms and research institutions in order to enhance the technological development in a country, as stated by one participant: ‘When we talk about established Bumiputera firms such as SAPURA and SCHOMI that are linked very well in the technology-based industry, they need more support in terms of technological aspects’ (GOV2). Therefore, making up collaboration would be a good way to nurture an encouraging environment of operating a business due to
potential benefits gained by all parties involved, especially technological development and knowledge enhancement.

The cultivation of entrepreneurial culture is being seen as a platform for the government to boost the entrepreneurs’ motivation in owning a business, especially amongst the Bumiputera entrepreneurs. In this respect, Participant GOV9 claimed that the historical background of ethnic Malays lacking motivation in business activities would reoccur if the government did not make any effort to influence them to venture into a business. Moreover, Participant GOV5 stated that the competitive business environment would discourage the Bumiputera entrepreneurs from operating their businesses, and thus, the organisation of business training and developmental programs by the government agencies might enable them to build up their level of confidence through knowledge and skills gained. This would eventually boost their motivation to run the business successfully.

The next section discusses the roles of university academics towards sustainability of Bumiputera NTBSFs.

7.2 ANALYSIS GENERATED FROM INTERVIEWS WITH ACADEMICS

As reported earlier in Section 3.5.2, previously published studies and analyses suggest that academics or researchers working in higher education institutions play an important role in ensuring that technology entrepreneurship is sustainable. The objective of this section is to ascertain whether this can be done and to do this, interviews with four academics at Malaysian higher education institution were conducted. These academics were selected based on their roles in promoting entrepreneurial culture in the university as well as providing assistance to entrepreneurs in the form of consultancy services, such as assistance with technological and business development issues. The profiles of the academic-participants are summarised in Table 7.3.
Regarding the role of higher education in Malaysia, Figure 7.2 derived from the NVivo presents an analysis model of the university academic’s role in providing a general view of support and assistance to the entrepreneurial firms. Three main roles have emerged from this model. The cultivation of entrepreneurial cultures is focused on the implementation of entrepreneurship-based teaching and research at the universities. In this aspect, the academics are responsible to ensure that the syllabuses taught by them are relevant and practical for the students to apply in their careers, regardless in the entrepreneurship or working with other companies. The second role focuses more on the commercialisation of university research outcomes in which the academics are responsible to set the foundation of implementation of research outcomes such as through the establishment of a commercialisation unit at the university or creating spin-off companies to commercialise the technology developed. The last role is related to the creation of relationships between the university and industry, particularly through business collaborations.
The coding matrix query from the NVivo as shown in Table 7.4 has uncovered three major themes, namely (a) cultivation of entrepreneurial cultures, (b) commercialisation of university research, and (c) strengthening university-industry linkage. Each academic person’s role in the sustainability of entrepreneurship development in Malaysia will be discussed in the following section.

Table 7.4: Roles of University Academics

<table>
<thead>
<tr>
<th>Participants</th>
<th>Commercialisation of University Research</th>
<th>Cultivation of Entrepreneurial Cultures</th>
<th>University-Industry Linkages</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACA1</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>ACA2</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>ACA3</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>ACA4</td>
<td>0</td>
<td>X</td>
<td>0</td>
</tr>
<tr>
<td>Total Source</td>
<td>3</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Total Coding Reference</td>
<td>17</td>
<td>12</td>
<td>16</td>
</tr>
</tbody>
</table>

7.2.1 First Role: Cultivation of Entrepreneurial Cultures

The first role played by universities in promoting the development of entrepreneurship as suggested by all respondents is the cultivation of entrepreneurial cultures amongst students and academics. The cultivation of an entrepreneurial culture among students is crucial in order
to produce future businesspeople so that they will be more innovative and willing to take risks when undertaking an entrepreneurial activity (ACA4). It is through this experience that students will understand the mechanics of doing business (ACA2). Two respondents suggested that the cultivation of an entrepreneurial culture amongst university students should be implemented when they are undergraduates:

I do admit it is really difficult to cultivate entrepreneurial cultures amongst our students as this may take time. I think the cultivation of entrepreneurial culture should not be started in the university as it should be nurtured since kindergarten (ACA1).

As an academic, we need to think on how to inculcate entrepreneurial passion or interest amongst our students. Perhaps we could create awareness amongst youngsters whereby this awareness should be created at the early age of an individual (ACA4).

Nevertheless, implementing an entrepreneurial culture among university students can bring benefits to students, especially concerning their future career choices (ACA1). Interviews revealed that academics have inculcated an entrepreneurial culture in students by offering entrepreneurship-related academic courses or training during both undergraduate and postgraduate study. Participant ACA4 stated that the entrepreneurship courses offered may be an avenue that nurtures an entrepreneurial culture among university students. He further explained that: ‘By offering entrepreneurship courses to our students, I reckon this could increase their interests to venture into entrepreneurial activities once they have completed the course’.

Moreover, the rising number of entrepreneurship centres and faculties in Malaysian public universities signifies where Malaysian higher education is going, with its emphasis on creating an entrepreneurial mindset in their graduates (ACA2). These entrepreneurship centres or units organise study plans for entrepreneurship-related courses, undertake entrepreneurship research and offer business consultancy or advice to both university students and staff who want to venture into business. These services are also offered to other external parties such as small business owners. Additionally, many courses offered by the universities have also included entrepreneurship subjects as elective subjects that could be chosen by students.
These courses aim to provide them with exposure to entrepreneurship knowledge of key competencies (ACA4).

Besides the entrepreneurship courses offered to their students, Participant ACA2 stated that some universities may also collaborate with other government agencies and private organisations such as the National Institute of Entrepreneurship (INSKEN), MARA, MTDC and MDeC. These institutions organise several entrepreneurship training or entrepreneurship acculturation activities to students. For instance, a series of entrepreneurship talks is conducted at the university for Bumiputera students, whereby speakers or trainers as well as the content for that program are normally assisted by MARA. Throughout this program, MARA might also identify those students who could be trained to be potential entrepreneurs. In addition, this program may also generate entrepreneurial interest amongst their students by sharing stories about business ventures’ success stories and what was produced by them (ACA2). For example, Participant ACA1 suggested that:

In order to develop my students’ interest in entrepreneurship, I ask them to read and share with the class stories about successful entrepreneurs whom they really admire. Some of them may say Bill Gates, Steve Jobs as well as local entrepreneurs such as Syed Mokhtar.

From another perspective, a few universities are organising business plan competitions to provide the students with an avenue to share their inventive ideas and to realise real opportunities in any given industry. Participant ACA2 stated that the implementation of a business plan competition may assist his students in exploring the source of funds from venture capitalists. He further explained:

By encouraging our students to participate in the business plan competition, there is also an opportunity for our students to get commercialisation funding of their viable ideas. This is because several judges are invited from the government institutions such as MDeC or MITI, and also venture capital firms.

The benefits of offering entrepreneurship-related courses and training to university students are two-fold in developing entrepreneurship in Malaysia: Firstly to expose students to real
business situations which might eventually spark their interest to venture into a business; and secondly to increase their critical and innovative thinking skills.

In exposing students to real business, Participant ACA1 suggested that: ‘…the relevancy of teaching syllabus in promoting entrepreneurial cultures and mindset amongst students depends on the courses offered by each faculty or university’. This view is also in tandem with that of Participant ACA4 who mentioned that his organisation has been offering a Master degree in IT entrepreneurship to create an entrepreneurial culture and to elevate the number of IT-based entrepreneurs, especially amongst Bumiputera. For these reasons many universities have revised their teaching syllabus to ensure its relevance and practicality to industrial or wider economic needs. For instance, Participant ACA1 stated that her organisation had conducted a series of discussions with industrial representatives to gather suggestions on the relevance of the courses or syllabus being offered. The outcome of these discussions as indicated by Participant ACA1 was as follows: ‘Recently, this university has changed its curriculum syllabus in order to be tailored to industrial needs. In fact, the university is starting to implement this every three years whereby we didn’t implement this policy before’.

Besides a continuous improvement in courses’ syllabus, academics might also promote entrepreneurship courses or training by cultivating an entrepreneurial culture amongst their students. For example, one strategy in exposing real business situations to the students as mentioned by Participant ACA2 is derived from the types of academic assignments given to them:

…all students who are undertaking the entrepreneurship subject in my class are required to interview a successful entrepreneur for their group task as well as to prepare as well as present a business plan to the class in order to expose them to the real business environment (ACA2).

Interestingly, the variety of tasks or assignments given to students may enable the academics to identify students who have the potential to be future businesspeople by identifying those ventures that represent a viable business idea that can be commercialised. Participant ACA3 suggested that:
When I teach them (students) in the class, I can identify which students have the potential to be entrepreneurs through the way they share their ideas as well as how fluent or well they can explain their ideas to the class.

The second benefit that could be generated from entrepreneurship-based courses and training for students is to increase their critical and innovative thinking skills. This is because several important entrepreneurial concepts such as opportunity identification, risk-taking attributes and creativity are being introduced to students through coursework and training, and this might shift their thinking into a more entrepreneurial direction (ACA1). One academic suggested:

The ability of the students to think critically might be derived from the ways their lecturers deliver lessons to them. Thus, when I teach my students, I always advise them to be more creative by projecting any new stuff that could be commercialised in the future (ACA3).

This entrepreneurial cultivation amongst Bumiputera students is also crucial to increase Bumiputera participation in technology-based industries. One participant remarked: ‘…universities need to take the role in increasing the number of Bumiputera in the technology-based industry due to the low participation from this group... we need to foster our students to become more entrepreneurial’ (ACA1).

University academics’ efforts to increase Bumiputera participation in technology-based industries is vital because previously general Bumiputera involvement in the technology-based industry has been discouraged compared to other conventional businesses. Participant ACA4 explained this scenario as follows:

I think Bumiputera technopreneurs are not really exposed in the industry and this might lead to our society’s general perception which views that the Bumiputera entrepreneurs are more commonly venturing into conventional-based business such as running a restaurant or in the handicraft-based business. They are not really apparently seen in the technology-based industry.
7.2.2 Second Role: The Commercialisation of University Research

The second role as remarked upon by three academics is the commercialisation of university research. Nowadays, universities in Malaysia not only function as teaching institutions, but also play important roles in societal development through innovative technologies generated from continuous research activities as well as catalysts of new technology-based ventures. For instance, Respondent ACA2 stated that: ‘In this university, we have a lot of interesting products which are comprised of ideas or concepts such as product prototypes and ready products’. Therefore, these research products created by the universities should be commercialised in order to foster the development of technology-based industries in Malaysia, especially since universities are being pressured to show tangible outcomes for the research grants they receive. Interviews revealed that this role is implemented by the university in three ways: the establishment of a commercialisation centre or unit at the university; the emphasis on continuous R&D activities; and the creation of spin-off companies.

Respondent ACA1 who is the deputy director of the innovation and commercialisation centre at a university in southern Malaysia, mentioned that many public universities have recognised the importance of commercialising their research outcomes, specifically to assist their staff in commercialisation activities as and process the intellectual property applications to the proper authority. Participant ACA1 said:

> Having recognised this role, the university has transformed the previous organisation that was known as the Bureau of Innovation and Consultancy (BIC) into the Innovation and Commercialisation Centre (ICC) whereby the new structure is focusing on innovation and commercialisation rather than on the consultation aspects.

Indeed, the creation of a commercialisation centre or unit is crucial to guide and support university researchers with business sense and skills, thus making the need to commercialise university research self-evident. Participant ACA2 stated: ‘…the researchers at the university are able to produce good products, but they are not able to commercialise the product due to their poor business sense.’

The second aspect that is important regarding commercialisation of university research is continuous R&D activities into producing innovative products that can be marketed and
enhance help entrepreneurs in new product development activities as suggested by Participant ACA2:

Our researchers are also helping entrepreneurs in developing a new product. Hence, we do scout around and seek any new technology that is available in other countries and bring it here (to Malaysia). Whilst at the same time we are providing inputs to entrepreneurs and assisting them to develop a new product.

The third aspect that could be implemented when universities commercialise their research is the creation of spin-off companies. Their creation may enable university people such as academics, researchers and students to commercialise and market their research products. Additionally, the creation of these companies may also enhance a university’s reputation in terms of their ability to conduct research. As stated by two respondents:

My first involvement in the entrepreneurship field started as a mentor for students who are involved in the entrepreneurship training course and from there, I followed the university’s inspiration to produce more spin-off companies from research activities. (ACA3)

The university is moving towards a direction where we try to create more spin-off companies generated from the students’ research or products. (ACA1)

Having more spin-off companies based on university research is evidenced by the creation of special business grants or financial assistance given to staff or students. Respondent ACA1 stated that the university is currently giving support to their staff and students via a special grant in order to commercialise any research product that can be marketed. She further mentioned that: ‘After identifying a viable product or technology produced by our students, the university would help them to commercialise the product by giving a special grant or fund amount up to RM50,000’. On the other hand, the creation of students’ spin-off companies may also occur due to entrepreneurial training. For instance, Participant ACA4, who is the head of the Department of Management at the faculty has been involved in entrepreneurship training programs for students and assisted them to form their own companies. He explained the benefits of his department’s programs as follows:
I found that the entrepreneurial training may help the university to identify students who possess high entrepreneurial orientation and eventually we will help these students to form their own companies by giving them support, both technological and financial.

In general, the spin-off companies created from the university research could be either fully-owned by the universities or their subsidiaries, or constitute a joint-venture between universities and industrial corporations or businesses. The creation of the first type normally involves collaboration between university researchers and students. For instance, academics could mentor students in developing their products as stated by Participant ACA2. The second type of spin-off companies is created via collaboration between universities and industrial concerns. The creation of these spin-off companies will be explained in more detail in terms of how universities played the university in are developing and strengthening entrepreneurship in Malaysia.

7.2.3 Third Role: Strengthening University-Industry Links

The third role played by the university is to strengthen university-industry links as remarked on by three respondents (ACA1, ACA2 and ACA3). Collaboration between the university and technology-based entrepreneurs has been recognised as something that can boost the development of technology entrepreneurship in Malaysia, specifically via the technology- and knowledge-sharing activities. Having recognised this role, many Malaysian universities are devising business and research collaboration strategies with firms in order to enhance their R&D via technology-sharing as well as obtaining funding from government agencies (especially the research institutions) and private sector organisations such as venture capitalists. The collaboration between universities, business firms and funders may also be seen as a symbiotic relationship that could boost technology entrepreneurship in Malaysia. Respondent ACA1 stated: ‘Bumiputera-owned technology firms are lacking in financial resources, and hence the ICC of the university would help them by seeking any available funding either from our internal funds or external funders’.

Besides the financial assistance provided by the ICC, Participant ACA1 also explained that some Bumiputera technology entrepreneurs may also collaborate with universities to develop
a new technology. Collaboration between the universities may be beneficial to both parties. From the entrepreneurs’ perspective, this collaboration may help them overcome not having enough resources - either technical or financial resources (ACA1). Moreover, the liability of newness faced by small firms might impede their ability to execute R&D activities, requiring them to rely on assistance from university researchers or experts. Meanwhile, collaboration with small firms may also assist university academics to obtain new insights into technological aspects as suggested by Participant ACA3:

We as university researchers could not cover all technological aspects as we have other roles as lecturers as well. The best thing that we could do is to engage with entrepreneurs due to the industrial knowledge possessed by the entrepreneurs, especially what are the current technologies demanded as well as problems arising in the industry. What we can cater to is the current technology R&D that might be able to fit in with the current demands.

With reference to the development of Indigenous technology entrepreneurship, Participant ACA2 mentioned that several universities have been collaborating with MARA (the council of trust for Indigenous people), to provide a postgraduate course for Indigenous students in the technological field. For instance, one university in northern Malaysia has offered a two-year master program in ICT entrepreneurship whereby MARA will give scholarships to eligible Indigenous students. At the end of their studies, these students are expected to venture into an ICT-based business based on the product prototype that they have developed during their courses. Indeed, throughout this course students are also being exposed to a real business environment where the university becomes an intermediary between the students and other Indigenous technology entrepreneurs via business outreach programs that the university conducts.

A series of business talks have also been organised and some successful Bumiputera technology entrepreneurs are being chosen to mentor a number of students. This type of program has also been implemented by a university in the southern peninsular of Malaysia where the outcomes of this program would be measured in terms of their commercialisation value, the creation of intellectual property rights (IPRs) and the new spin-off business venture. For this reason, the ICC of the university will liaise with potential students in order to help
them to form their own companies and commercialise their ICT-based inventions. For example, Participant ACA1 explained the role of the commercialisation department that she supervises: ‘Even though the ICT-entrepreneurship program is not directly under our supervision, yet we will deal with these students in order to help them to process IPRs of their inventions as well as to commercialise their products’.

This program also helps students to develop business networks for their future business ventures. Networking in this way will enable students to gain relevant industrial technical knowledge and learn the art of doing business in various industries. In regard to the role of the university to promote this networking strategy, Participant ACA2 said:

As dean of the business school here, I have made several alliances or networks with Bumiputera technology entrepreneurs in order to seek their assistance to help our students who are currently being trained to become future technology entrepreneurs. In fact, some of these students have formed their own business start-ups and doing business collaboration with other technology entrepreneurs.

The next section analyses the roles of government agencies as perceived by the government officers interviewed in this thesis.

7.3 ANALYSES EMERGED FROM THE INTERVIEWS WITH POLICY MAKERS

This section analyses general roles played by Malaysian policy makers towards the development of entrepreneurship in Malaysia, specifically towards the Bumiputera entrepreneurs. Two policy makers from dominant political parties in Malaysia were selected based on the positions they hold in their political parties as well as their substantial experiences in the entrepreneurship development. The profiles of the policy maker-participants are summarised in Table 7.5.
Table 7.5 Profile of policy maker-participants

<table>
<thead>
<tr>
<th>Respondents</th>
<th>Political Position</th>
<th>Non-Political Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLM1</td>
<td>Deputy Chairman of the State The People’s Justice Party (PKR)</td>
<td>Chairman and State Exco* Agriculture Modernization, Natural Resources and Entrepreneurial Development Committee (*This position is equivalent to a ministerial position in the state)</td>
</tr>
<tr>
<td>PLM2</td>
<td>The Chairman Bureau of Economics &amp; Entrepreneurship Development (BEPU), The Youth Division, The United Malays National Organisation (UMNO)</td>
<td>Chairman Training &amp; Entrepreneurship Development Selangor Malay Chamber of Businesses</td>
</tr>
</tbody>
</table>

The role of the policy makers towards the development of Bumiputera entrepreneurs, predominantly amongst the ethnic Malays, is generally influenced by their political ideologies. During the interviews, the policy makers were asked about their roles in assisting the Bumiputera technology entrepreneurs to conduct businesses. In this regard, Participant PLM1 whose political party emphasises a non-ethnic approach in overcoming the Malaysian socioeconomic imbalances has noted: ‘…our party’s concept is not focusing on Malays-based only. Currently, we are uniting all races as one entity and thus we are helping all entrepreneurs, regardless [of] their races’.

The other, Participant PLM2 is from UMNO, the most dominant party in the country. The party has been part of the National Front coalition that has formed Malaysia’s government since independence and emphasises upholding the aspiration of Malay nationalism. In this respect, the position of Participant PLM2 is as follows: ‘We do not have any right to give any business projects. But, we could help the Bumiputera entrepreneurs by acting as the bridge or platform for the Malay entrepreneurs to operate their businesses through our programs’.

The NVivo analysis has revealed the emergence of three main roles as stated by the policy maker-participants. Figure 7.3 demonstrates the roles of policy makers in assisting the Bumiputera entrepreneurs.
Although a different political ideology is possessed by both policy makers in this thesis, both entrepreneurs have emphasised on the importance of fostering a good business network for the Bumiputera technology entrepreneurs. In this aspect, several programs have been introduced by the policy makers to help the entrepreneurs, and more importantly, to serve their electorates. The roles of the policy makers will be discussed briefly in the next section.

7.3.1 First Role: Business Networking and Business Matching

The first role of the policy makers in assisting the Bumiputera entrepreneurs that emerged from the interviews is developing a business network for the Bumiputera entrepreneur. The NVivo analysis from both participants showed six coding references. This indicates that both participants have recognised the importance of building a good business network for the Bumiputera entrepreneurs. Indeed, Participant PLM2 suggested: ‘…the entrepreneurs should seek, maintain and nurture relationship[s] in regard to business networking as this would certainly [be] beneficial for them either today or in the future’.

In the same vein, Participant PLM1 also stressed the role of assisting the Bumiputera to develop their business networking claiming that one of the reasons why Bumiputera are left behind the ethnic Chinese in the Malaysian economy is their lack of business networking. Further, he explained this situation might be occurring for the following reason: ‘The business culture amongst the ethnic Chinese in Malaysia is already well-established as they have business networking as their strengths. Compared to the Malays, they are just doing business in a limited scope’.

Figure 7.3 Analysis Model of Policy Maker’s Roles
For this reason, Participant PLM1 recommended that the Bumiputera entrepreneurs should mingle with the Chinese entrepreneurs, collaborating with them in order to strengthen their business network and also to gain new knowledge. Moreover, the development of a good business network may enable the entrepreneurs to use their contacts to help them in operating their businesses (PLM2). In this respect, Participant PLM2 stated that the policy makers could help Bumiputera entrepreneurs by organising business networking activities: ‘We also organize business talks or forums amongst Bumiputera entrepreneurs whereby the main role played by this unit is to gather all these Bumiputera entrepreneurs in order to help them to do business seeking and matching’.

Besides organising business talks or forums as indirect ways of stimulating business networking amongst Bumiputera entrepreneurs, both policy makers have taken an initiative to organise industrial visits both locally and overseas. It is claimed that these industrial visits give opportunities to observe the ways established entrepreneurial firms are doing business and eventually would create international business networking for the entrepreneurs. Further, the industrial visit might also expose the entrepreneurs to new technologies in the industries (PLM1) and interest them in developing those technologies by collaborating with the established international firms. In regard to this, Participant PLM1 further noted: ‘We have organised several business trips overseas such as we went to Indonesia, China, Taiwan and India last year in order to give the opportunity to meet with other countries’ business leaders and to make business matching with them’.

7.3.2 Second Role: Business Development Programs

The node ‘organising business development programs’ in the NVivo analysis has emerged four times in the interviews with the policy makers. This signifies that the continuation of the business development programs by the policy makers is crucial to assist the entrepreneurs in running their businesses. Participant PLM1 believes that continuous business development programs are important due to the highly competitive nature of business nowadays. In regard to this matter, he suggested:

It is because nowadays is the world of knowledge-based entrepreneurship and businesses. Being sustainable in the business means the entrepreneurs should possess a
good educational background if possible. If not, they must undergo a training which would give them a real exposure from that area in order to train their thinking skills.

From another perspective, the policy maker-participants also mentioned the implementation of several programs that aim to inculcate technology entrepreneurship amongst the Bumiputera community. These programs aim to increase the participation of the Bumiputera entrepreneurs in the technology-based industries, and importantly, to expose them to the latest available technology. In this respect, one policy maker stated:

There was [were] few programs that BEPU has conducted with MOSTI and MDeC in order [to] explain latest issues in the technology-based industry such as green technology business opportunity to the entrepreneurs. Besides that, in the field of construction, we collaborate with IBS to expose the entrepreneurs with latest systems (PLM2).

Further, the development of the technology entrepreneurship is important in order to create a pool of human capital that would drive the industry. This is because the government has developed good infrastructure to create an encouraging business environment in the country, yet human capital needs to be created through business development programs such as entrepreneurship training. Participant PLM1 explained: ‘The current role of my section is to ensure that all those facilities and infrastructures developed could be used by putting our technology entrepreneurs there. What we are doing is we give several training sessions to them’.

Besides that, Participant PLM1 suggested the implementation of business development programs could be seen as a platform to create awareness within the community about the assistance provided by the government, especially amongst Bumiputera youth. He claimed: ‘Currently we (Bumiputera community) do not have enough entrepreneurs as entrepreneurship is not our culture. Looking at our young graduates, how many of them [are] willing to be an entrepreneur?’ Therefore, an awareness program is the initial component of business development programs organised by the policy makers.
7.3.3 Third Role: Assisting the Formulation of National Policies

The last role played by the policy maker is assisting the formulation of national policies, especially in relation to the development of Bumiputera entrepreneurship. The policy makers have a good connection with other crucial policy makers; especially the minister and this would enable the policy makers to be involved in the formulation of the policies. For example, Participant PLM2 who was a special officer to the Minister of the Ministry of Entrepreneurship and Cooperative Development stated:

Based on my current position, I am responsible to pay attention to entrepreneurs’ welfare and development, especially amongst the Malays. Few years back, I was a special officer to the Minister and responsible to advise the minister to plan policies and dealt with the NGOs and other entrepreneurship development.

7.4 SUMMARY OF STAKEHOLDER ANALYSIS

This chapter has given an account of the contributing roles of business stakeholders towards the sustainability of Bumiputera entrepreneurs through the provision of relevant support and assistances. The evidence from this chapter suggests that three main business stakeholders have provided a strong support to the Bumiputera to venture into a business and much assistance for the Bumiputera technology-based firms to operate and sustain the business, as depicted in the business stakeholder support and assistance thematic analysis model (Figure 7.4). This model has shown that each business stakeholder has a specific role to play in assisting the Bumiputera entrepreneurs, especially to create an encouraging business environment.

The first aspect uncovered in this chapter is the role played by officers in any government agency or department in assisting the entrepreneurs to sustain a business. The findings revealed that the implementation of entrepreneurship-based training and business development programs have emerged as the main aspect that had been emphasized by the government agencies, besides business matching, networking activities and provision of financial assistances. These actions may indicate that many Bumiputera entrepreneurs lack those aspects in operating their business. Nevertheless, few government officers emphasised that the types of support needed by each entrepreneur should be examined as each firm has its
specific needs in sustaining a business. The findings also suggest that some Bumiputera entrepreneurs were not aware of the assistance provided by these government agencies as there was lack of coordination among the government agencies in implementing the entrepreneurship development programs.

Having examined the roles of university academics, the cultivation of entrepreneurial cultures focuses on the implementation of entrepreneurship-based teaching and research at the universities. In this aspect, the academics were responsible to ensure that the syllabuses they taught are relevant and practical for the students to apply in their careers, whether in the entrepreneurship field or working with other companies. The second role of academics is more focused on the commercialisation of university research outcomes, whereby the academics are responsible to commercialise their research outcomes such as through the establishment of commercialisation units at university and the creation of spin-off companies. From an important perspective, these activities have a positive implication in producing entrepreneurs in the technology industries, especially among Bumiputera. Indeed, these programs may also help the academics to ensure that all R&D activities at the university may bring valuable impacts to the society through the commercialisation of their research outcomes rather than focusing on teaching activities only. The last role is related to the creation of relationships between the university and industry, particularly through business collaborations. Through the efforts made by the academics, some collaboration in business and research has also been implemented between the universities and industrial partners. These collaborations would help the entrepreneurs in operating their business through knowledge and technology transfer activities with the university.
Figure 7.4: Business Stakeholder Support and Assistance Thematic Analysis Model

Source: Author
The last aspect examined in this chapter is the role played by the policy makers in Bumiputera entrepreneurship development. One important aspect to be noted, even though different political ideology is possessed by each policy maker, both entrepreneurs have emphasised the importance of fostering a good business network for the Bumiputera technology entrepreneurs. In this aspect, several programs have been introduced by the policy makers to help the entrepreneurs, and more importantly, to serve their electorates. To summarise the findings uncovered in this chapter, the conceptual model has shown that certain roles played by the business stakeholders were identical and relevant to each other. This indicates that each business stakeholder could collaborate and initiate strategic partnerships among them to serve those roles. For example, the government agencies could collaborate with the university academics in implementing entrepreneurship-based training to the entrepreneurs. The triangulation of each role played by the business stakeholders will be discussed in the following chapter, Chapter Eight, in order to illuminate how specific entrepreneurship-based activities could be integrated amongst business stakeholders.
CHAPTER EIGHT

DISCUSSION

8.0 INTRODUCTION

This chapter discusses the implications of factors identified in the analysis chapters (Chapters Five, Six and Seven) in this thesis, specifically founder-specific factors, firm-specific resources towards the sustainability of Bumiputera NTBSFs as well as the support and assistance provided by the business stakeholders to help the firms in sustaining the business. The findings generated from the previous two chapters are discussed with previous literature reviewed in Chapter Two and Chapter Three in order to uncover and further understand the factors which are perceived important by the participants in this study.

8.1 DISCUSSION ON THE FOUNDER-SPECIFIC FACTORS

As mentioned in Chapter Three, the founder-specific factors are an important aspect that may assist the entrepreneurs to sustain their businesses. The discussion of each factor will be uncovered in the following section.

8.1.1 Founder Attributes

a) Entrepreneurial Motivations

The findings of this thesis uncovered the reasons why the entrepreneurs-participants ventured into a business were varied and driven by their personal interests to perform entrepreneurial acts (intrinsic motivation) or external factors such as rewards gained from the entrepreneurial acts (extrinsic motivation). These results are in line with Carsrud and Brännback’s (2011) comprehensive review of entrepreneurial motivations, particularly in regard to the conversion of entrepreneurial behaviours of individuals towards a business venture, whereby from this thesis four intrinsic motivations and three extrinsic motivation have emerged (Section 5.1.1).

Based on the classical views, entrepreneurs normally ventured into a business for economic reasons (Schumpeter 1936), and the findings showed that monetary gain has appeared as one
of extrinsic factors that influenced the entrepreneur-participants to venture into a business. However, this factor has not appeared as the most cited factor that influenced the Bumiputera entrepreneurs as there were several factors other than economic reasons that emerged (Carsrud & Brännback 2011) from the findings, such as love of challenge, perceived level of freedom, social network influence and dissatisfaction with previous work. These findings further support the idea of Jayawarna et al. (2013) who proposed that there is a dynamic development in regards to motivations of individuals to form a business venture, mainly their career path, household and business life courses. This would also explain why some individuals choose entrepreneurship as their career choice and others do not (Farmer et al. 2011).

Moreover, the findings suggest that venturing into the field of entrepreneurship does not guarantee that entrepreneurs would be able to generate any lucrative outcome. As the entrepreneurship field is such a challenging field, only a few people who love to take the challenge and have high enthusiasm would venture into a new business. Indeed, this factor has been cited most by the participants, whereby they have a desire to take up a challenge by venturing into business. This could be explained by the level of confidence possessed by entrepreneurs-participants and their individual goals to challenge their potential to venture into a business (Townsend et al. 2010). From an important perspective, few participants (ICT4, ICT9, BIO3 and BIO6) stated that their actions to venture into a business were not only that they wanted to challenge themselves, but also they intended to prove that Bumiputera can be as successful as other non-Bumiputera entrepreneurs, especially in the technology-based industries. This remarkable finding would also suggest that the frustrating socioeconomic situation of a community (in this thesis Bumiputera) could also play a major role in influencing entrepreneurial intentions among the people, not only due to the economic necessity (Hessels et al. 2008), but also due to the psychological construction of the individuals from their current surroundings that could be linked to their innovative entrepreneurial ventures. As discussed in Chapter 2 (Section 2.3.3 and 2.3.4), the participation of the Bumiputera in the commercial activities is below other races. Therefore, the creation of any entrepreneurial venture would be to increase the number of Bumiputera as well as help them to improve their financial position in the Malaysian society. In this sense, the
participants would persevere in operating the business due to the Malay nationalism spirit that drives them to sustain the business.

This finding may also be linked with the third intrinsic motivating factor that emerged in this thesis: the desire to contribute to one’s own society. Through the formation of a business venture by Bumiputera entrepreneurs, they can contribute to the society via job creation as well as wealth and knowledge sharing. This finding corroborates the idea of Benzing et al. (2009) who suggest formation of a business is not only related to economic reasons such as profit gain, but also might be driven by welfare and social gains (Dubini 1989). Interestingly, few entrepreneurs have shown that becoming opportunistic entrepreneurs who responded to a viable perceived business (Robichaud et al. 2010) could also help their society through the invention of new products or services which meet the societal needs and wants. For instance, the development of E-Qalam by Participant ICT10 aimed to teach Muslim primary school students to learn Quranic knowledge via the application of e-learning. From a behavioural perspective, this finding indicated that the entrepreneurs’ perceptions and intentions could influence their innovative ventures, and eventually lead them to the desired outcomes of the ventures (Estay et al. 2013), particularly in terms of new product creation and increase the knowledge of the society.

One unanticipated finding was that the desire to start a business at a young age emerged as the least intrinsic motivating factors. These young Bumiputera entrepreneurs who decided to venture into entrepreneurship as their career choice perceived that their decision to venture into the business might reflect less responsibility to be borne by them at a young age and their ability to learn and recover from their mistakes (or even failures). This action can be translated in terms of the entrepreneurs’ potential outcomes and personal expectations in venturing into business as proposed by Naffziger et al. (1994), in which their entrepreneurial actions were more inclined to grab ‘opportunity’ to either succeed in the business, or to venture into another business if they fail, or even change their profession to work with other companies. Moreover, many activities aimed at nurturing entrepreneurial skills and to inculcate an entrepreneurial mindset among youngsters (especially university students) have been conducted by universities (Section 7.2.1) and government agencies (Section 7.1.7). These
activities may influence these young entrepreneurs to venture into a business as they have
developed sense of self as an entrepreneur since a young age. As a result of this, the
participants have sufficient capabilities in operating their business in a long term.

Problems or dissatisfaction during previous employment also emerged as one of the reasons
why entrepreneurs-participants ventured into business. This situation can be regarded as push
motivations (Shinnar & Young 2008) in which the frustrating employment experiences
triggered the entrepreneurs to take risk, venture into business and gain a better perceived level
of freedom (Mallon & Cohen 2001). Besides, most female entrepreneurs were having a
problem in balancing between career and family matters (Section 5.3.1) and decided to quit
their jobs temporarily to make money via business activities and eventually establish their
own business. Jayawarna et al. (2013) refers to this as a ‘household life course’ whereby this
situation was mainly faced by career women who bear the responsibility between their jobs
and family and chose to be an entrepreneur to have a greater level of freedom and flexibility.

In addition, the finding has also showed that perceived opportunities available in the
technology industry have attracted participants to venture into a technology-based business.
For example, the ICT industry is such a big area, and indeed, there many ICT-based
businesses that could be chosen by entrepreneurs in the ICT industry such as animation,
design, networking and software development. Nevertheless, the exploitation of the available
business opportunities in the ICT industry should be thoroughly filtered by entrepreneurs in
order to be able to fulfill the real specification needed by the end user or customer.
Additionally, entrepreneurs should choose a business that is within the scope of their
knowledge and expertise as choosing the right business may also be used as a platform for
entrepreneurs to demonstrate their abilities to develop their own products, which is important
for business sustainability.

b) Entrepreneurial Personalities
The findings have uncovered a set of entrepreneurial personalities possessed by the
entrepreneurs-participants which might influence the sustainability of Bumiputera NTBSFs
(Section 5.1.2). Many scholars (Khan 1986; Ray 1993; Calvo & García 2010) agreed that the
discovery of sets of entrepreneurial attributes and personalities is important to better
understand founding entrepreneurs’ attributes that may influence the sustainability and performance of a business venture, rather than focusing on a single trait. Nevertheless, the findings were examined by taking into consideration the lack of consensus among entrepreneurship researchers regarding entrepreneurial traits or personalities that are crucial to operate and sustain a business (Estay et al. 2013). Hence, the discussion here will highlight entrepreneurial personalities unearthed in this thesis and its relatedness with previous studies on the impacts of entrepreneurial personalities towards sustainability of a business venture.

The desire to seek and exploit business opportunities has emerged as the most cited entrepreneurial personality by the participants. This finding may be linked with a personal trait introduced by McClelland (1961) called ‘need for achievement’ (N-Ach) that is widely cited in current entrepreneurial behaviour research (Brandstätter 2011; Belso-Martinez et al. 2013). In order to attain high achievement in operating and sustaining a business, entrepreneurs should constantly explore any business opportunity which could be exploited. Indeed, this type of entrepreneur was aware of assistance and support provided by the government agencies in terms of grants or business tenders and would grab those opportunities in order to maximise their profits. Besides that, seeking opportunities may also be translated as efforts taken by the entrepreneurs to expand their business opportunities by attending business training, making strategic collaborations and networking with others. Due to this, having an extravert type of personality and being proactive (Brandstätter 2011) is an important characteristic for entrepreneurs to constantly seek business opportunities with other organisations.

One of the important findings that emerged in relation to the participants’ entrepreneurial personalities is self-spiritual strength possessed by the participants. This personality emerged as the second most cited personality in which the participants concerned about a spiritual faith in regard to the connection with God would influence their actions in sustaining a business. Since all participants in this thesis are Muslim, the discussion of religious values emphasised by the participants were more inclined with Islamic values or concepts. This study is in line with the emerging concept of entrepreneurship research that examines the role of religion towards an entrepreneurial venture or business practices (Tracey 2012; Audretsch, Bönte &
Tamvada 2013). Interestingly, this finding corroborates with Audretsch’s (2013) who found that Muslims in India were more likely to be self-employed and positively influenced by Islamic entrepreneurial attitudes and work ethics. As can see from the analysis, nine participants highlighted some Islamic concepts with their business practices such as halal (permitted by Islamic law), rezki (bounty from God) and ummah (society). Based on these strong spiritual values, the participants will be persistent in running their business as this leads to the sustainability of their business operations.

In addition, other entrepreneurial personalities that emerged in the findings might also concur with previous studies such as risk taking propensity and ability to manage failure or problems in operating a business. For instance, the propensity to risk taking portrayed by the participants was consistent with the findings of Mills & Pawson’s (2012) study that suggests adventurous type of entrepreneurs (in ICT industry) identified themselves as risk takers who were able to take action in an uncertain and challenging environment. Meanwhile, the ability to overcome a problem personality may be connected with emotional stability under the ‘Big Five personalities’ model (Brandstätter 2011) which identifies those entrepreneurs who possessed a high level of emotional stability, tolerated stress better and were able to handle difficult situations in operating the business. The participants showed that their abilities to overcome hiccups in the early stage of their business operations were a positive factor in their business sustainability.

8.1.2 Founder’s Human Capital

a) Formal Educational Background
The result that emerged in Section 5.2.1(a) showed that the majority of the entrepreneurs-participant agreed that having a good formal educational background assisted them in operating and sustaining a business. This finding supports prior studies which have noted the importance of possessing a good educational background towards a business start-up and a firm’s performance (Walker & Brown 2004; Dickson et al. 2008; West & Noel 2009; Zhang, Duysters, et al. 2013).
Nevertheless, ten entrepreneurs-participants stated that the possession of a good formal educational background is not an ultimate factor that could determine the sustainability of their business in the technology-based industries. This finding further support the idea of Coy et al. (2007) who claimed that possessing a higher level of educational background did not necessarily contribute to a firm’s success. A possible explanation for this might be that one of the criteria of resources that can lead to a firm’s competitive advantage as proposed by Barney (1991) is the rareness of a particular resource. In this respect, the possession of similar levels of educational background by most technology entrepreneurs would not give much advantage to compete in the industry. This is because technology-based firms are commonly founded and managed by high human capital people (Koberg et al. 1996; Colombo & Grilli 2005). However, this finding must be interpreted with caution as having a low level of educational background would become an impediment for the Bumiputera entrepreneurs to operate and sustain a technology-based business (Burke et al. 2008).

Therefore, the participants have proposed that there are three main contributing roles of formal educational background towards a sustainable business. For instance, more than half the participants (17 participants) proposed that their formal educational background assisted them to develop knowledge and skills beneficial to sustaining their business. This finding corroborates the ideas of Backes-Gellner and Werner (2007) who suggest that individuals with a good academic background would be likely to possess a set of relevant skills needed for business ventures. Furthermore, this finding might also support previous studies that claimed having a lower level of educational background has been found to negatively influence the capability of an entrepreneur to be innovative (Sonobe et al. 2011) and eventually succeed in the business (Burke et al. 2008).

Another important finding was that having received a good education at universities or higher education may provide early exposure to industry, especially in terms of entrepreneurial values and relevant skills gained, and may lead individuals to choose entrepreneurship as their career. These findings further support earlier studies (Zhao et al. 2005; Volery et al. 2013) that proposed educational courses and industrial-related training might encourage the graduates to venture into a business due to relevant skills and abilities developed from such activities.
Indeed, the possession of skills and abilities generated from these activities helped the participants to better understand the nature of business operations and enhanced their sense of confidence to venture into business (Zhang, Duysters, et al. 2013), and more importantly to sustain their business.

b) Prior Work Experience

In Section 5.2.1(b), the findings uncovered that possessing relevant prior work experience was crucial to assist the entrepreneurs in sustaining their business, whereby five main roles of prior work experience have been proposed by the entrepreneurs-participants. The results generated in this section have generally commended that through prior experience, the entrepreneurs-participants might acquire diverse skills and knowledge in operating a business (Lamont 1972; Baron & Ensley 2006). For example, having managerial experience in previous jobs helped the participants to enhance their business management capabilities and exposures which are important elements to sustain a business (Duchesneau & Gartner 1990; Jones & Tullous 2002). The participants claimed that they knew how to manage their business operations, particularly in the area of human resources management and financial planning. In line with Politis (2005, 2008), those entrepreneurs who possessed more industry experience would be more likely able to manage their employees and other managerial aspects in the company.

In addition, the findings also suggest that several participants faced difficulty in finding financial resources due to their lack of prior experience. This can be translated in terms of the liability of newness experienced by the participants (Wiklund, Baker & Shepherd 2010) in which they faced difficulties to convince investors to provide capital needed for the business due to a limited financial track record and inability to offer collateral. Nevertheless, there were other participants such as Participant ICT10 who was able to obtain financial grants from two government agencies in developing its new product based on her prior managerial and entrepreneurial experiences. These findings were in tandem with those of Robson et al. (2012) who found that experienced entrepreneurs were more likely to obtain credit facilities as they could exploit the broader human capital and social capital that they had developed during prior jobs. Besides the ability to manage human resources and pitch business investment, managerial capabilities possessed by the participant may provide them with abilities to
overcome problems that arose in operating the business, and eventually boost their confidence level to succeed in the business as proposed by Manolova et al. (2007). Besides, the participants also highlighted that their prior work experiences have enhance their technical knowledge and skills, especially through practical experiences and self-directed learning during previous jobs (Mueller 2006; Stuetzer, Obschonka, Davidsson & Schmitt-Rodermund 2013). Indeed, through experiences the entrepreneurs would have a clear understanding of relevant skills and knowledge needed in the industry rather than depending on the outcomes of their study at university only. Thus, these findings indicate that the possession of relevant experience would enhance the ability of the Bumiputera entrepreneurs to sustain their business.

From a different perspective on the types of skills developed from prior experience commonly mentioned in the previous studies (managerial and technical skills or knowledge), one unpredicted finding to emerge was that the soft skills generated from prior experience were also crucial to sustain a business. In this respect, the ability of an entrepreneur to lead his employees and negotiate with customers was developed during their prior employment. Indeed, the participants’ experiences in dealing with customers to ensure their needs were met, was important for long-term business operation which, in turn, could help entrepreneurs to sustain their business.

Besides, another important finding was that prior work experience could also assist the entrepreneurs to leverage their business networks, a finding in agreement with Zhang’s (2011) previous findings. Indeed, the participants’ previous jobs have provided what Davidsson and Honig (2003) referred to as bridging social capital that comprised relationships between the entrepreneur, its customers, suppliers as well as funders. In this situation, the participants who possessed specific industry experience would be able to mobilise necessary resources and business advisory in sustaining their business from helpers whom they have known during previous jobs (Kotha & George 2012). Finally, as proposed by Shane’s (2000) prominent study in the entrepreneurship field, the findings also showed that prior work experience assisted the participants to identify and exploit any opportunity available in the market. Through exposures gained by the participants during previous jobs, they became familiar with
any viable business opportunity (Farmer et al. 2011) as the participants have a broader specific of both human capital and social capital that could help them to grab and exploit the business opportunity (Robson et al. 2012).

c) Knowledge

As expected, the finding supports the general ideas of Sun (2004) that possessing relevant knowledge is important for entrepreneurial success, which was affirmed by almost all entrepreneurs-participants in this thesis. The important result to emerge from the analyses indicates that the idiosyncratic level of knowledge possessed by entrepreneurs would influence the capability of the Bumiputera NTBSFs to operate and sustain its business operations. This finding is in tandem with West and Noel’s (2009) earlier findings that knowledge resources would assist technology-based firms to perform in the industry. Besides that, the finding also showed that the possession of knowledge would help the firms to embrace the latest technology available in the market and this eventually assisted them to develop new technologies and products. In this regard, this finding might be interpreted in terms of the capabilities of the technology-based firms to strengthen their positions in the industry by offering new products or technologies that are different with their competitors (Beijerse 2000; Wiklund & Shepherd 2003).

Knowledge possessed by entrepreneurs has been found to help them in managing the changing industrial expectations, specifically new technology advancements and introduction of new policies by the government. This situation might be further explained with findings from Omerzel and Antončič’ (2008) that suggested entrepreneurs who are more knowledgeable would be able to adapt to changing global business environments. Indeed, the participants have suggested that abilities of offering new innovative products could be enhanced through further development of their self-knowledge, including both technical and managerial knowledge.

The finding in this thesis has also further uncovered five main strategies that have been adopted by the entrepreneurs-participants in enhancing their level of knowledge. Interestingly, the noteworthy findings in this thesis showed that the entrepreneurial knowledge of the
technology-based entrepreneurs might be enhanced through two main ways: (a) implementing internal meetings and discussions and (b) exploitation of available social networks. On one hand, the concept of tacit dimension of knowledge as advocated by Polanyi (1966), emerged in this thesis through the entrepreneurs’ observations and discussions with others, rather than through formal learning processes. On the other hand, this finding does not support Nonaka’s (1994) argument that implicit knowledge could not easily be transferred to other person or organisation. In fact, this finding further extends this idea in terms of the ability of an individual entrepreneur to learn and gain new knowledge through socialisation activities and observations with their staff, business partners and other people in their social networks. Indeed, the absorptive capabilities of a Bumiputera entrepreneur via these processes could guide them to comprehend relevant knowledge which is needed in sustaining their business.

**d) Skills**

The sustainability of Bumiputera entrepreneurs is much influenced by their possession of balance skills in operating the business, as discussed in Section 5.2.2(b). This finding seems to be consistent with other studies (Colombo & Grilli 2010; Unger et al. 2011; Stuetzer, Obschonka & Schmitt-Rodermund 2013) who found the skills and capabilities of an entrepreneur were crucial aspects for the survival of a business venture. In this respect, this thesis has uncovered three contributing roles of relevant skills towards the sustainability of Bumiputera technology-based firms, whereby the finding showed that many participants perceived that having relevant skills were important towards the creation and development of a firm’s new product and technology. Prior studies (Almus & Nerlinger 1999; Bozeman et al. 2001) found that the growth of technology-based firms that were founded by entrepreneurs who possessed high technical skills, would be more likely to generate higher levels of growth. Therefore, having high technical skills would enhance the capabilities of the firms to engage with innovative activities which can lead to the creation and development of new products or technologies.

Nevertheless, many scholars (Kakati 2003; Oakey 2003) contended that managing a technology venture requires an entrepreneur to possess more than balance skills, including not only technical skills, but also managerial or business skills. From the findings, two other
reasons why possessing relevant skills are important were suggested by the participants: ability to deal with customers and enhancing their managerial capabilities. These findings indicated that the entrepreneurs-participants in this thesis were aware that they needed to have a balance set of skills in sustaining a business, especially in relation to managerial aspects such as human resources management and marketing. In contrast with Ganotakis (2012) who found that technology entrepreneurs usually put more emphasis on technical skills rather management skills in operating a business, this thesis has shown that Bumiputera technology entrepreneurs also took several initiatives to continuously develop their entrepreneurial skills such as through business networking (Section 6.1.1) and cultivation of an innovative organisational culture in the firm (Section 6.2.2). This is important to ensure that they possess necessary skills critical to sustain the business.

Further, one of the unexpected results that emerged was that, even though the participants believed that possessing relevant skills was important to create new products, the results showed that the possession of technical skills was cited second to soft skills by the participants. This finding further supports the idea of prior studies which proposed that the technology entrepreneur should be able to have diverse skills due to the complex nature of the technology-based industry (Gimmon & Levie 2010). This was especially true among newly-established firms (Stuetzer, Obschonka & Schmitt-Rodermund 2013). Indeed, the skills possessed by the entrepreneurs should be enhanced continuously based on the situation of the firms and the environment surrounding their business operations (Mitchelmore & Rowley 2010; Chell 2013). Based on this finding, this situation could be interpreted in terms of the liability of newness and smallness faced by the entrepreneurs that requires them to build up their interpersonal skills and problem-solving skills that would help them to acquire necessary resources from other firms (Hoehn-Weiss et al. 2004). As a result, the participants believe that possessing soft skills are important to sustain their new technology ventures rather than their technical skills due to their perceived needs in dealing with business stakeholders or situations that require more soft skills, such as negotiation and decision making competencies. This is because, as a newly-established firm, the Bumiputera entrepreneur must convince potential customers to engage with their products, which is crucial to generate necessary amount of sales to ensure the survival of their operations.
In addition, as a founder of a newly-established technology firm, the participants also believe that they need to continuously enhance their skills as they will become the centre of reference for their employees and customers in managing the business. This finding corroborates prior studies (Freel 2005; Baptista et al. 2013) that suggest possession of high skills by the entrepreneurs would have a positive impact on the ability of their employees in the firms. In this respect, the ability of the Bumiputera entrepreneurs to guide and motivate their employees will influence the directions of the firms in achieving organisational goals.

8.1.3 Founder’s Social Capital

This section discusses the implications of individual founder’s personal networks towards a firm’s business growth, specifically bonding social capital as proposed by Davidsson and Honig (2003). In this respect, the discussion of the bonding social capital will focus on strong ties amongst individuals such as family members and friends, as well as other individual societal aspects that emerged in the analyses, including the ability of individual founders to operate and sustain their businesses employing work life balance and role models in business operations.

a) Family business background and support

The current study found that more than half of the entrepreneurs-participants had family business background before forming their own business ventures (Section 5.3.1). The present findings seem to be consistent with previous research (Burke et al. 2008; Mungai & Velamuri 2011) that suggested individuals whose parents were self-employed or owned a business had a higher propensity to venture into a business. Delving into the possible explanation of this situation, several entrepreneurs-participants suggested that observations on how their family members were doing businesses, particularly interactions with them via sharing ideas and knowledge, sparked their intensity to venture into a business (Reijonen & Komppula 2007; Kirkwood 2012). This situation may also be interpreted from the social learning theory (Bandura 1977) that proposes individual’s learning process can occur via observation with their family members who act as role models. Further, the learning process experienced by the Bumiputera entrepreneurs could also be seen as a platform for them to nurture their skills,
knowledge and level of confidence required to start and sustain their business (Carr & Sequeira 2007).

To further support this, one of the important findings that emerged in Section 5.1.1(b) showed the most cited extrinsic motivating factor was the influence of the participants’ social networks, especially parental role model and friends. This view can be interpreted from the Granovetter’s (1973) seminal study that proposed an individual will select a role model from their ‘strong ties’ such as family members and friends. In this respect, the entrepreneurs would be much influenced by the existence of a role model in operating and sustaining the business (Bosma et al. 2012). Indeed, nine participants stated that having a role model will guide them in sustaining the business by following good business practices and seeking business advices from them.

The study also found the support given by the family members was important to assist the Bumiputera NTBSFs in operating and running a business either morally or financially [Section 5.3.1 (a) and Section 5.3.1 (b)]. The moral support, as stated by the entrepreneurs-participants, can be viewed in terms of inspiration and advice given by the family members in running their businesses (Anderson et al. 2005). This finding also corroborates Chang et al.’s (2009) work that characterised the moral and advisory support from sharing ideas, technological advice and sources of business networks. Through this support, the Bumiputera entrepreneurs will be more motivated to sustain their business through various forms of support given by their family members.

While the financial support given by the family members to the entrepreneurs is crucial during the start-up stage of a business (Aldrich & Cliff 2003; Kirkwood 2012), nine entrepreneurs-participants mentioned the provision of monetary assistance by their family members. The injection of financial resources to the Bumiputera NTBSFs by the family members is needed due to the limited funding within new firms. These firms are unable to demonstrate a financial track record or apply for loans from any financial institution (Cetindamar, Gupta, Karadeniz & Egrican 2012), especially if the founding entrepreneurs have limited experience in running their businesses (Smith & Beasley 2011). Interestingly, few participants perceived the
provision of some initial capital from their family members was an encouragement for them to take risks to venture into a business. In this respect, the entrepreneurs-participants normally invested their own savings and used monetary assistance from their family members as alternative sources of finance. This finding is in agreement with Chua et al.’s (2011) findings which showed that the entrepreneurs need to generate their sources of capital in the start-up stage from their personal savings and borrowings from their family members. Having enough financial resources to operate the business may affect the capability of the entrepreneur to engage with necessary business activities crucial to sustain the business.

In addition, this thesis uncovered two unanticipated findings under the family support theme. These are the views of non-family business background participants in running the business and work-life balance. Many prior studies (Dyer & Handler 1994; Zahra, Hayton & Salvato 2004) have conducted the comparison between those entrepreneurs with family business background and those who were not in terms of support and its impact on business performance, yet there is dearth of explanation of the situation faced by non-family business background entrepreneurs in venturing into a business. Section 5.3.1(c) unearthed this issue through the examination of the challenges faced by the participants to convince their family members of the intention to venture into a business as well as their ability to transform that discouragement into a business challenge.

Another unexpected, yet interesting finding that emerged from this thesis was the issue of work-life balance that highlighted the aspect of balancing an entrepreneur’s commitment between operating their businesses and managing family (Section 5.3.1d). The entrepreneurs-participants stated that venturing into a business required them to spend a lot of time, energy and money to operate the business. Therefore, having understanding family members, especially their spouses and children, was important to avoid any life stress due to conflicts that arise from the inability of the entrepreneurs to balance their work and business, which could lead to poor business performance (Eddleston & Powell 2012). In line with the work of Gudmunson et al. (2009), the findings uncovered that those entrepreneurs who were married emphasised having spousal support (especially emotional spousal support) giving them more confidence to venture into a business and enhancing their ability to sustain the business.
Even though the issue of work-life balance has been cited by both male and female entrepreneurs-participant in this thesis, the aspects of work-life balance faced by the participants and their level of concern on this issue differed according to their sex. This finding accords with Eddleston and Powell’s (2012) study that suggests the processes by which the family nurture and support the entrepreneurs’ work-life balance is different according to sex. Indeed, the findings showed that this issue of balancing commitment between business and family matters was more prevalent among female participants as more than half of them highlighted the issue of work life balance in operating their businesses. Therefore, this finding indicates that women Bumiputera entrepreneurs faced more difficulty to balance their business and home roles compared to men Bumiputera entrepreneurs. This was due to several factors including cultural aspects and the nature of business. In line with Forson’s (2013) recent study on black business women’s work-life balance experiences, this finding also showed that the cultural aspects of Bumiputera society were significant for Bumiputera women entrepreneurs, especially in their roles as a wife and a mother in a family. For instance, the female participants stated that according to Malay-Muslim culture they need to get permission from their husband in every single aspect to show their wifely obedience and to take more responsibilities to supervise their children’s welfare. Thus, having such an understanding husband would enhance the ability of the Malay women entrepreneurs to balance their family and business. This is important to avoid any conflict or stress due to family problems that could affect the sustainability of their business.

Besides that, the challenging nature of technology-based industry which is dominated by male entrepreneurs would also limit the activities of the Bumiputera women entrepreneurs, especially pertaining to the socialisation processes in operating the business such as meeting clients and overseas business trips. It is encouraging to compare this finding with that found by Anna et al. (2000) and Walker et al. (2008), whereby the participation of women entrepreneurs in the business, especially in non-traditional industries such as manufacturing is less encouraging. This might spark the interest of the women entrepreneur to venture into traditional industries such as home-based business as they have more flexibility to balance their work and home roles. This might be true, yet from the perspective of this thesis, the female participants decided to venture into a technology-based business such as Participant
BIO4 (in biotechnology-pharmaceutical) and Participant ICT 10 (in ICT–software development) as they have received various support from their husband and obtained financial assistances from the government which could help them in sustaining the business.

b) Friends support and its implications to business

Previous studies have highlighted the importance of friends’ support to the entrepreneurial firms as part of the development of individual’s informal social capital, besides the support given by family members (Birley 1985; Ramachandran & Ramnarayan 1993; Bhagavatula, Elfring, van Tilburg & van de Bunt 2010). The findings in Section 5.3.2 have also uncovered the roles of friends in influencing the firms’ business operations and sustainability. In this respect, the result showed that several participants have ventured into a business due to the influence and advice of their friends. This could be interpreted from what Coleman (1988) described as the social structure of an individual that groups of friends would influence the direction towards an action. This scenario is in agreement with Falck et al. (2012) who found that the individual’s entrepreneurial intentions will be influenced by their entrepreneurial friends due to socialisation activities. For example, Participant ICT9, who underwent his secondary education at a Chinese-based school, has developed his entrepreneurial interests due his socialisation with entrepreneurial Chinese friends. Moreover, the observations made by the participants towards their entrepreneurial friends who have ventured into business triggered their confidence and interest to venture into a business. This finding further supports the idea of Giannetti and Simonov (2009) who stated that the social interactions with entrepreneurial peers would enable the entrepreneurs to learn by observing their peers running a business. These interests and levels of confidence would influence the ability of the Bumiputera entrepreneurs to sustain their business, especially via the encouragement showed by their peers to support their business.

In a similar vein with the current finding by Kuhn and Galloway (2013), the finding also showed that the role of friends can be regarded as sources of information in sustaining the business, particularly when business uncertainties required the entrepreneurs to seek assistance and advice from their friends. The findings also further extend this concept of friend support, whereby the friend support could also be seen as the creation of business
collaborations between the firms and their friends’ firms as they have built a significance level of trust. Additionally, their friends could also support the entrepreneurs by buying the entrepreneurs’ products and services and recommending them to other people. Indeed, this kind of support not only assists the Bumiputera entrepreneurs to generate profit, but also increases their sense of confidence in sustaining the business.

c) Surrounding Life Environment

An encouraging business environment may affect the ability of the Bumiputera firms to sustain their business. In this respect, the findings uncovered two crucial business environmental factors that are unique to the Malaysian Bumiputera business culture: (a) the connection with politicians and Ali-Baba practices (Section 5.3.3). In line with prior studies (Faccio 2006; Zhou 2013), the findings revealed that Bumiputera firms that have a strong connection with politicians have better access to business resources and opportunities, particularly through the provision of business tenders and financial grants (Section 2.3.4). As a result, the politically-connected Bumiputera firms would have enough financial resources to sustain their business operations. Nevertheless, this may also bring a negative impact towards the sustainability of Bumiputera firms if there is a change in political landscape in Malaysia should they put too much dependency on political connections.

On the other hand, the affirmative actions practised by the Malaysian together with political connection have led to an ‘Ali Baba’ culture (Naguib & Smucker 2009), in which the Bumiputera with government projects will ‘outsource’ the work to their Chinese partners to do the projects due to lack of skills and expertise (Loo 2012). In one sense, these strategic collaborations may assist the Bumiputera firms to learn from their counterparts and gain sufficient financial resources to sustain the business. However, this kind of practice has been criticised by a few participants (ICT6, BIO4 and OTH2) as the Bumiputera entrepreneurs will only act as a silent partner and do not gain any strategic benefits from such collaboration. This silent partner will have limited skills and experiences in operating that business which may eventually impede long term sustainability.
8.2 DISCUSSION ON THE FIRM-SPECIFIC RESOURCES

The second part of this chapter discusses the aspect of firm-specific resources in which it reflects three main theories adopted in this study, as discussed in Chapter 2. Meanwhile, the development of each element is derived from the concepts developed in Chapter 3. Two parts of firm-specific resources namely firm’s social capital and firm’s intangible assets and capabilities will be discussed in the following section.

8.2.1 Firm’s Social Capital

Based on theory of social capital in the entrepreneurship literature, this section deliberates the role of social capital at the firm level whereby this contributes to further understanding how the Bumiputera NTBSFs create and maintain their business networks in sustaining their businesses (Liao & Welsch 2005). Next, this section uncovers the roles of business reputation in an enterprise and elaborates the way the Bumiputera NTBSFs develop and enhance their business reputation from the perspectives of both customers and suppliers. The implication of intra-firm relationships between the firms and their employees or business partners will be explained in the final part of this section.

a) The implications of business networking towards sustainable business

In this thesis, the importance of possessing a good business network has been emphasised by most of the respondents (Section 5.2.1). Indeed, previous studies have also shown that the possession of a business network would affect the performance of a firm (Hoang & Antoncic 2003; Lechner & Dowling 2003), specifically amongst small firms (Street & Ann-Frances 2007) in the start-up stage (Hormiga, Batista-Canino & Sánchez-Medina 2011). The inter-firm network developed may provide an alternative source of resources for the newly-established firms to operate their businesses instead of relying on their limited internal resources (Lechner & Dowling 2003). This thesis discovered that some participants opted to seek assistance from external parties, especially from the government agencies due to their limited ability to run their start-up technology firms. Therefore, possessing connections with other firms may assist the entrepreneurial firms and was regarded by most participants as an integral business process that should be leveraged by the Bumiputera firms in sustaining the business.
Nevertheless, Participant ICT9 argued that the exploitation of a firm’s business network is based on each firm’s situation. This view could be interpreted in terms of the willingness of the firm to invest its energy and time in developing its business networks (Semrau & Werner 2012) and the characteristics of network ties of a firm (Hite 2005). In order to understand this process, this thesis has further explored the reasons why Bumiputera NTBSFs have made efforts to leverage their business networks and the strategies they employed in order to sustain their business (Section 6.1).

The findings of the current study also uncovered three main reasons why the Bumiputera new technology-based small firms leverage their business network: (a) to overcome the limited resources and knowledge possessed by them, (b) to identify business opportunities, and (c) to accelerate the development of new technology or product through knowledge sharing and business collaborations with other firms. The limited resources and knowledge faced by the firms in operating their businesses can be interpreted in terms of the liability of newness as described by Stinchcombe (2000), whereas these newly-established firms are usually challenged with insufficient resources and uncertain roles in operating a business. In overcoming these obstacles, many participants suggested that the network resources could be employed to undertake business collaborations and strategic alliances with other firms in the industry. This finding corroborates the idea of Hanlon and Saunders (2007), who suggested the contributing roles of a firm in exploiting its social networks was to secure and marshal necessary resources. In this respect, the networking activities with other firms, such as via business collaborations, assisted the Bumiputera firms to obtain resources needed in operating the business (e.g. raw materials and expertise) which directly impact business sustainability.

In line with a previous study by Arenius and Clercq (2005), the participants also suggested that through business networking activities they could identify any available business opportunity either in terms of receiving sub-contract business projects from their business partners or business recommendations from their business partners to other potential customers. The selection of business networking approaches might be based on the business strategies employed by the entrepreneurs in operating their business operations and the firms’ resources. This is because the newly-established firms lack different resources. Some firms
might lack financial resources, while others need human resources. Therefore, each participant entrepreneur in this study chose a different approach to best suit their firms’ resources and capabilities. For instance, becoming a member of the Malay Chamber of Business has assisted Participant ICT2 to gain business coaching and advisory support from other members to operate his business more smoothly. Hence, through networking activities the Bumiputera entrepreneur gained necessary resources in sustaining the business.

b) Implications of Business Reputation and Business Sustainability

The development of a firm’s business reputation was emphasised by all entrepreneurs-participants in this study whereby the current competitive business environment in the technology-based industry and the existence of abundance products have required the Bumiputera NTBSFs to enhance their business reputation. This finding supports previous studies (Hall 1992; López 2006) that suggested that the creation of corporate reputation was considered as intangible resource that significantly affects the entrepreneur’s ability to generate sustainable competitive advantage. In this respect, the findings in Section 6.1.2 uncovered the four main reasons why the entrepreneurs-participants perceived that a good business reputation was important, namely: (a) the development of business trust, (b) firm image building, (c) generation of continuous business, and (d) business collaborations.

First, the findings uncovered that the development of business trust between firms and other parties was the most important aspect to explain why business reputation was important for a firm’s sustainability. Fichman and Levinthal’s (1991) seminal study found that possessing a good reputation may develop a firm’s legitimisation within the market. In accord with this, participants emphasised that obtaining a high level of trust from customers would help them to market their products and eventually increase their financial position in the market. Second, the finding corroborates with Goldberg et al. (2003) who proposed that the reputation possessed by firms could be viewed as an identity that may portray their position in the industry. Nevertheless, in line with Chollet et al. (2013) five entrepreneurs stated that due to their lack of business records and limited resources meant it was difficult for them to convince their potential funders or business partners. Moreover, the generation of business trust with business stakeholders may take years to be developed (Kwon & Rupp 2013). In this sense, the
participants highlighted that through their engagement with reputable firms and with university researchers to develop new product, for instance, they could overcome their weaknesses and increase their reputation to sustain the business.

Next, due to the reputation possessed by the Bumiputera NTBSFs, several participants suggested that this may increase their ability to generate more business transactions and enhance collaboration with other firms. This finding supports the view of DeCarolis and Deed (1999) that a firm’s good reputation would enable the participants to generate more profits and eventually create competitive advantage which is important for a sustainable business.

c) Implication of Intra-Firms Relationships and Business Sustainability

The intra-firm relationship has emerged as an additional finding that is crucial for the sustainability of a firm (Section 6.4). The intra-firm relationship may also be discussed from the perspective of both social capital theory and human capital theory. In this respect, the participants stated that the possession of good employees was important in assisting them to maintain and sustain their businesses. Because of this many firms have established their own human capital developmental program for employees, especially to improve employees’ skills and knowledge. In line with the idea of Campbell et al. (2012), the findings uncovered that participants believed that, in order to retain employees, firms should also build good relationships with their employees, especially by giving them appropriate rewards. In fact, twelve participants considered their employees as an important asset that should be retained for the sustainability of their business operations, as recommended by Chareonsuk and Chansa-ngavej (2010).

On the other hand, the relationship with business partners or stakeholders was also mentioned by almost half of the participants. The chemistry between the firm’s business stakeholders was seen as important to ensure no conflict emerged between them. Further, findings also suggest having a good business partner will complement their strengths and weaknesses. This finding corroborates prior studies (Cooper et al. 1988; Colombo & Grilli 2005; Brinckmann, Salomo & Gemuenden 2011) that found many technology-based firms are established by founders who possess broader skills and experiences and are able to provide one another with greater
psychological support compared to a single founder. In relation to this, Participant BIO5 has teamed up with his friend, a qualified accountant, to help him with financial matters in their biotechnology business venture (Brinckmann et al. 2011).

8.2.2 Firm’s Capabilities and Intangible Assets

In this thesis, the adoption of the resources-based view of a firm, as suggested by previous studies (Wernerfelt 1984; Barney 1991), has focused on the ability of the Bumiputera NTBSFs to develop their intangible assets and capabilities in creating their sustainable competitive advantage (Galbreath 2005). Accordingly, Fahy’s (2002) work has been employed as an initial guideline and has uncovered two main aspects of intangible assets that would affect a firm’s sustainability: business reputation and intellectual property. Meanwhile, for this thesis the R&D and technology capabilities were highlighted by participants as crucial capabilities that may assist the Bumiputera NTBSFs to sustain their businesses.

a) Contributing roles of R&D and Technology Capabilities towards Sustainable Business

The finding has uncovered that the emphasis on R&D and technological capabilities by firms is important towards the creation and development of new products and technologies (Section 6.2.1). This accords with Vertinsky’s (2003) study that suggested that the intensity with which small firms conduct their internal R&D activities would increase their abilities to develop new products. Indeed, the ability of the firms to continuously innovate their products via R&D activities would enable them to fulfil customer needs via their product innovation (Raymond & St-Pierre 2010; Yu et al. 2013), and eventually penetrate in the market (Del Monte & Papagni 2003). As a result of this, the last reason why R&D capabilities are important, as perceived by the Bumiputera entrepreneurs, is the creation of business opportunities via the development of new products or technologies by the firms. This may also be translated as the enhancement of a firm’s values via new product and process innovation generated through their R&D capabilities (Oakey 2003). Indeed, the implementation of continuous R&D activities by the Bumiputera firms will help them to offer innovative products that give them a competitive advantage and eventually lead to business sustainability.
Additionally, the finding has also shown that most participants were conducting their own in-house R&D activities, which is consistent with previous studies (Pisano 1990; Zahra & Kirchhoff 2001) that showed a firm’s internal R&D activities are the main source of innovation. Nevertheless, in line with Rammer et al.’s (2009) study, several participants chose a combination of in-house R&D activities and external R&D, especially via strategic alliances with other parties in order to ensure their firm’s innovation success. The strategic alliances established by the Bumiputera NTBSFs with other external parties such as research institutes and universities could be seen as a strategy to overcome their limited resources as well as to embrace the fast-pace of technological innovation due to globalisation (Narula 2004; Kang & Park 2012b).

b) Implications of Organisational Innovation Culture

Generally, the cultivation of organisational innovation culture amongst the entrepreneurs-participants in this thesis was generally driven and inspired by their vision in running their businesses. Indeed, previous studies have shown that the implementation of any organisational innovation decision is typically made by decision makers of a firm based on their willingness to change and innovate (Klein & Sorra 1996; Montalvo 2006). The findings uncovered five main reasons why possessing organisational innovation culture is important for the sustainability of Bumiputera NTBSFs (Section 6.2.2), in which the most cited reason was the creation and development of new products or technologies by the firms (Zhao 2005; García-Morales, Llorens-Montes & Verdú-Jover 2006). Indeed, this finding corroborates a seminal study by Schumpeter (1936), which suggested that the innovative nature of entrepreneurial firms would lead to the creation of new product development. The other finding, in line with Marvel and Lumpkin (2007), also suggested that the cultivation of organisational innovation would become an important tool to enhance the performance of their business operations. In this respect, the cultivation of organisational innovative culture by the Bumiputera participants would assist them in creating new products and enhancing relevant knowledge, which are crucial to sustain a business.

The finding has also discovered a number of organisational innovation culture approaches practised by the participants. This could reflect the business model innovation chosen by the
firms in cultivating the innovative organisational culture and strengthening their strategic flexibility as suggested by Bock et al. (2012). For example, the possession of effective communication between organisational members was the most cited approach by the participants to the cultivation of innovation culture. In line with the previous studies (Wan et al. 2005; Simonen & McCann 2008), the participants stated that the dispersion of ideas within the firms would enable knowledge sharing and enhance the learning experience between them. Besides, almost half of the participants have implemented continuous in-house training to enhance their innovative capabilities, whereby this finding extends the idea of cultivating innovation practices via training activities as reported in the previous research (Thornhill 2006; Sarri et al. 2010).

Furthermore, the finding suggests that the capability of a firm to initiate innovation in a company may be dependent on the organisational resources of a firm, specifically financial and human capital. This is because having sufficient resources increases their capacity to innovate and eventually enhance their level of competitiveness (González-Pernía et al. 2012). The findings showed that Bumiputera firms (newly-established firms) have scarce resources and this eventually impedes their capability to cultivate innovation in a firm. In this respect, they will find support from external sources such as government agencies and other competing firms in order to sustain their business.

c) Implications of IPRs towards Business Sustainability

Prior studies have shown that IPRs have been increasingly seen as important sources of sustainable competitive advantage of a firm (Kitching & Blackburn 1998; Piotrowska 2008). The results in Section 6.2.3 (a) showed a similar trend of this phenomenon in which a majority of participants stated that the possession of IPRs was important to sustain their business operations, especially if the products invented by the firms are innovative and novel. These findings support previous studies that the main reasons why technology-based firms place emphasis on possessing their IPRs are to protect their offerings from being imitated or duplicated by other firms (Ostergard Jr 2000; Zhao 2006; Rassenfosse 2012). This effort would affect the firm’s exploitation of their own inventive offerings (De Castro, Balkin & Shepherd 2008). For instance, the patented products of the Bumiputera firms would prevent
competitors from imitating their products, which would affect a firm’s reputation and financial standing. Therefore, the participants also suggested that the possession of the IPRs could increase their firms’ value and reputation. This is because the possession of IPRs such as patents would portray the firms’ level of innovation and stock of organisational knowledge (DeCarolis & Deeds 1999; Hanel 2006).

Having recognised the adoption of IPRs amongst SMEs (Hanel 2006), this finding has, however, shown that different levels of adoption of IPRs’ practices exist within the Bumiputera firms. In this regard, the number of participating firms that already received IPRs in operating their businesses is minimal, while almost half of them are considering adopting IPRs in the future. This situation could be interpreted in terms of the different level of resources possessed by the firms as well as their perceptions about the importance of various IP types according to their nature of business (Hanel 2006). The application of IPs was perceived as costly by the participants, and hence, they opted to focus on income generation first in order to pay the cost incurred to apply for IPs, which is important to protect their inventions and sustain the business. On the other hand, due to limited financial resources for IP management, few entrepreneurs have opted to keep their new products or technologies a trade secret due to their scepticism of information disclosure upon the application for the IPRs (Spithoven et al. 2013). This finding seems to be consistent with Thumm (2001) who investigated one of the strategies employed by European biotechnology firms managing their inventions in secret. Some inventions which can be easily copied they will keep as a trade secret rather than apply for IPRs. Indeed, some Bumiputera firms opted to keep their inventions as a trade secret as they were worried that the required information disclosure could leak important information about their inventions, which may have negative implications for their earnings and sustainability.

From another perspective, the development of adequate IPRs in developing countries is such a challenge (Zhao 2006), and the investigation of the adoption of IPRs amongst the Malaysian Bumiputera NTBSFs in this thesis has uncovered several issues regarding adoption of IPRs in a firm. An interesting finding to emerge was the discouraging culture of IPRs’ practice, cited by almost half the participants as the main issue faced by them rather than the complicated
procedures, costs and lead times of applying for the IPRs. For instance, Kitching and Blackburn (1998) and Hanel (2006) stated that firms should consider the anticipated costs such as the cost of obtaining an IPR and litigation costs to enforce their rights before adopting any formal IPR.

8.2.3 Firm’s Business Strategies

In sustaining the business, the findings showed that the Bumiputera technology entrepreneurs adopted several types of strategies (Section 6.3), whereby the product differentiation strategy has been adopted by most participants in this thesis. This finding corroborates the ideas of Zahra and Bogner (2000) who suggested that the development and introduction of a new technology firm’s products, which are ahead of and different from its competitors, could affect its performance. Indeed, the Bumiputera firms strived to produce unique and quality products which fulfil their customers’ needs and eventually maximise their profits.

Additionally, more than half of the entrepreneurs-participants proposed that providing a good customer service was one of the strategies that had been adopted in sustaining their business. In this respect, this strategy may also be built from the ability to develop a new product based on customers’ needs (Berry & Taggart 1998). In this respect, Participant ICT3 suggested the ability of the Bumiputera firms to attract potential customers and to retain existing customers was important to ensure long-term profits that help sustain the business.

8.3 DISCUSSION ON BUSINESS STAKEHOLDER SUPPORT AND ASSISTANCE

8.3.1 Roles of Government Agencies

Having realised the contributing roles of SMEs as the backbone of industrial development which impacts the country’s economic growth (Section 2.4.2), the Malaysian government has initiated many strategic policies that aim to enhance entrepreneurship development, specifically by providing relevant support and assistance to entrepreneurial business ventures (Section 2.4.3). Indeed, the roles of the government in providing such support and assistance to entrepreneurs have been strongly commended by many entrepreneurship scholars (Gilbert et al. 2004; Mason & Brown 2013) to enhance the capability of entrepreneurial performance and sustainability. From a societal sustainability perspective in Malaysia, the implementation
of entrepreneurship development or economic indigenism amongst Bumiputera is seen as a strategic initiative by the government to enhance the socioeconomic condition of the Bumiputera, and more importantly, to create a more balanced society in the multiracial country (Section 2.3.3).

The outcomes in Section 7.1 of this thesis uncovered seven main roles of government agencies in Malaysia in providing a good business ecosystem to the Bumiputera technology entrepreneurs in operating and sustaining their business. Based on the categories of infrastructure and incentives provided by the government in entrepreneurship as proposed by Dubini (1989), most government officers-participants highlighted the provision of soft infrastructure (e.g. training and business development programs and business networking programs) to the Bumiputera technology entrepreneurs rather than hard infrastructure (e.g. business facilities). This finding speaks in important ways to the initiatives made by the Malaysian government to assist the Bumiputera technology entrepreneurs, and the area of Bumiputera business operations which required more attention from the government. For example, the provision of entrepreneur-based training and business development has been cited as the most important role of government agencies to help the Bumiputera firms to enhance their entrepreneurial skills and knowledge (Section 7.1.1). In tandem with Benzing et al. (2009), this finding showed that the government agencies hope that through entrepreneur-based training they can nurture entrepreneurship culture and mindset among Bumiputera, especially to enhance their abilities and overcome any weakness in operating the business.

In addition, the results in Section 7.1.2 showed that the government agencies also play an important role in implementing the national policies and statutory framework for the entrepreneurship development in Malaysia. Even though the formulation of relevant entrepreneurship policies in general is difficult to effectively implement due to different support needed by the entrepreneurs (Fischer & Reuber 2003), yet the policy initiatives practised by the government agencies, as shown in the findings, have tailored with the main roles played by their organisation in a specific sector and jurisdiction. For instance, the MDeC officers (GOV1 and GOV6) stated that their unit was responsible only to develop a pool of Bumiputera technology entrepreneurs in the ICT industry. This is also accords with Minniti’s
(2008) observation, which recommended that the government’s policy initiative should be tailored to specific economic clusters and regions.

Another important finding that emerged in regard to the government roles was the provision of financial assistance to the Bumiputera technology entrepreneurs (Section 7.1.4). The difficulty faced by entrepreneurs in gaining access to financial resources has become the major problem faced by them in operating their new ventures (Chandler 2010). The liberalisation policy implemented by the Malaysia government in 2009, whereby certain privileges (e.g. financial grants) previously enjoyed by the Bumiputera entrepreneurs in certain industries has been abolished in order to give equal treatment to all races and attract more foreign investors to inject their money to the Malaysian economy, will challenge the ability of the Bumiputera in business as well as the sustainability of Bumiputera in the Malaysian socioeconomic landscape (Section 2.1.3). Nevertheless, the provision of soft loans provided by the government to the Bumiputera firms, instead of financial grants, was seen as an effective way for the government agencies to be responsible with the financial capital given to them. In addition, several government officers-participants stated that the financial assistance provided by their organisations has now shifted direction to give more allocation to strategic industries such as ICT and Biotechnology which will deliver more impact to the country’s economic growth (Brundin et al. 2008). This finding further extends the idea of Koski and Pajarinen (2012) who found that the allocation of financial assistance to entrepreneurial firms will positively impact job creation, whereby this finding found that the financial assistance provided to technology-based firm in strategic industries may also generate a spillover effect towards the country’s technological development. For instance, the allocation of financial sources to these Bumiputera technology entrepreneurs (e.g pre-seed fund and commercialisation fund) may help them to commercialise their new products.

8.3.2 Roles of University Academics

The important findings in Section 7.2 suggest that the dynamic business environment today requires academics at the universities to shift their traditional roles of producing graduates who are readily employed in the industry into nurturing more entrepreneurial graduates who are able to create new offerings in the market, and eventually venture into a business
(Audretsch 2012). The academics-participants suggested three main roles that should be taken by the universities in order to provide a more conducive business ecosystem to the Bumiputera entrepreneurship development in Malaysia. First, the universities have revamped their delivery of knowledge transmission by offering more entrepreneurship-related courses or training to their students, especially through the establishment of entrepreneurship centres or units. Interestingly, the universities have also collaborated with industries and other government agencies in revising academics syllabuses and functions.

In line with Rasmussen and Borch (2010), the academics-participants stated that the universities have emphasised commercialising the research outputs, especially through the establishment of a commercialisation centre or technology transfer office. In fact, the establishment of this unit not only aims to market their research outputs, but also to produce more spin-off companies through continuous R&D activities (Chrisman et al. 1995). Further, through their entrepreneurship training, Participant ACA1 stated that several universities identified their potential Bumiputera graduates to attend a symbiotic program that aims to commercialise their inventions by appointing these graduates as the manager or CEO, responsible to act as surrogate entrepreneurs as suggested by Wright et al. (2012). As a result, the benefits gained from this program were twofold: the universities were able to commercialise their products via spin-off companies and to increase participation of Bumiputera in technology-based industries.

The third remarkable finding that emerged in Section 7.2.3 is the development of university-industry linkages which aims to enhance business and research collaborations between the universities, industrial partners and entrepreneurial ventures. Having recognised the limited resources faced by the Bumiputera technology ventures due to technological complexity in the industry (Segarra-Blasco & Arauzo-Carod 2008) as well as the need of new insights from the industry in the academia, the universities have encouraged its members to make a strategic collaboration with the entrepreneurial ventures. The findings also further extend the idea of Calver et al. (2013) in the aspect of enhanced network development and self-learning outcomes. The finding showed that the universities not only put this effort into the Bumiputera entrepreneurs, but also initiated a networking strategy between the successful
Bumiputera technology entrepreneur and potential entrepreneurs among Bumiputera students, especially those who were studying in the entrepreneurship-related courses, using coaching and mentoring. This is to ensure a long-term collaboration between the universities and the industrial partners in enhancing Bumiputera entrepreneurship (Bjerregaard 2009). In addition, the universities have also acted as a mediator between the entrepreneurial students and respected government agencies and organisation by assisting their graduates to seek funding or necessary support to venture into a business.

8.3.3 Roles of Policy Makers

Delving into the roles played by the policy makers in assisting the Bumiputera entrepreneurs, the findings revealed that the political ideology of the policy makers employed dissimilar implementation approaches to enhancing Bumiputera entrepreneurship. For instance, Participant PLM2, upholding the aspiration of Malay nationalism, was really concerned to enhance the involvement of Bumiputera in business via government affirmative actions and support (Gomez 2012). Whilst Participant PLM1, whose party emphasises a non-ethnic approach or equality, was concerned about giving assistance to entrepreneurs, regardless of their race. These findings are consistent with Mintrom and Norman (2009) who contended that policy makers are normally motivated by their own interest and agenda in the hope of getting support to implement their policy preferences and to serve their constituency or electorates (Mason & Brown 2013).

Regardless of the different ideologies espoused by the policy maker-participants, the findings showed that their perceived roles towards helping the Bumiputera entrepreneurs were identical. The findings uncovered three strategic roles of policy makers towards the sustainability of Bumiputera firms, namely: the development of business networking and matching (Section 7.3.1), the implementation of business development programs (Section 7.3.2) and the formulation of policies (Section 7.3.3). These findings uncovered that the lack of business network among Bumiputera entrepreneurs, compared with ethnic-Chinese entrepreneurs, had become an obstacle for the Bumiputera to go far in the business. Having a program that aims to enhance the Bumiputera performance through business networking and matching will create an encouraging business ecosystem, as suggested by Román et al. (2013).
Besides, the other two roles of policy makers as found in this thesis portrayed active policy initiatives and strategic public interventions through the formulation of policies and business training which aim to enhance the economic landscape of Malaysia via increased participation by Bumiputera in technology-based industry. This finding further extends the idea of Lerner (2010), whereby the positive impact of the government intervention was seen in this thesis through the lens of specific focus of an Indigenous group rather than the whole population in a country such as Singapore or Jamaica.

8.4 SUMMARY

This chapter focuses on providing a better understanding of the factors influencing the sustainability of the Malaysian Bumiputera NTBSFs by blending the findings uncovered in the previous analysis chapters and the extension review of prior research discussed in earlier chapters. Importantly, findings from this chapter offer an insight into how this thesis corroborates, contradicts and extends the current literature, mainly in the entrepreneurship field (Appendix J).

From the aspect of founder-specific factors as shown in Table 8.1, this thesis unearthed that possessing self-spiritual strength plays an important aspect in influencing the sustainability of Bumiputera business operations. Having faith in operating the business in tandem with relevant Islamic concepts and principles has guided the Bumiputera entrepreneurs to be persistent in operating their business. As a result, their intention to venture into a business was not due solely to an economic perspective, but can also be connected with their intention to offer beneficial products to the public. Interestingly, this study also found that ‘ethnic nationalism’ or in this case ‘Malay Nationalism’ constitutes a strong identity that is an important factor that leads the Bumiputera entrepreneurs to the intention to venture into a business. This factor increases their motivation to be a successful entrepreneur, especially in technology-based ventures, in order to prove to others that they, as a Bumiputera, can also be as successful as other non-Bumiputera in entrepreneurship.

Another unexpected factor to emerge from the analysis is that the possession of soft skills in sustaining a business has been perceived as more important than both technical skills and
managerial skills by the participants. This could be explained in terms of the needs of the Bumiputera firms to communicate with respected business stakeholders and to make strategic business decision.

Table 8.1: Summary of Key Findings on Founder-Specific Factors

<table>
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<tr>
<th>Common Major Factors</th>
<th>Expected Contributing Factors Emerged from the Data Analysis</th>
<th>Unexpected Contributing Factors Emerged from the Data Analysis</th>
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<td>Founder Attributes</td>
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<td>- Entrepreneurial Motivations</td>
<td>- Entrepreneurial Personalities</td>
<td>- Self-spiritual strength personality</td>
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<td>- Malay nationalism in the involvement of economic activities</td>
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<td>Founder's Human Capital</td>
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<td>- Investment of Human Capital</td>
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<td>o Prior Experiences</td>
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<td>- The Outcomes of the Investment of Human Capital</td>
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<td>Founder's Social Capital</td>
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<td>- Family Business Background and Support</td>
<td>- Family Support</td>
<td>- Women entrepreneur’s roles as wife and mother according to the Bumiputera family culture (work-life balance)</td>
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<td>- Friend support</td>
<td>o Work-life balance</td>
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<td></td>
<td>- Surrounding life environment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Political connections</td>
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<tr>
<td></td>
<td>o Ali Baba business practices</td>
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</table>

From the perspective of firm-specific resources, the unexpected factor emerged as shown in Table 8.2 is the discouraging culture of IP management practices amongst the Bumiputera NTBSFs. This scenario sparks a point to ponder on the contradictory actions by the participants as most of them agreed that IP management is important to protect their products and enhance their firms’ image. Yet, the implementation of IP management was discouraging. This could be explained by issues related to the implementation of IP management (Section 6.2.3c) such as complicated procedures and cost. In addition, the thesis also extends understanding of networking approaches, strategies to enhance R&D capability, cultivation of
organisational innovation approaches as well as business strategies employed by the Bumiputera NTBSFs. The findings also suggest that having a good intra-firm relationship will help firms to enhance their social capital, especially amongst employees and business partners.

Table 8.2: Summary of Key Findings on Firm-Specific Resources

<table>
<thead>
<tr>
<th>Common Major Factors Underpinning the Major Concepts</th>
<th>Expected Contributing Factors Emerged from the Data Analysis</th>
<th>Unexpected Contributing Factors Emerged from the Data Analysis</th>
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</thead>
<tbody>
<tr>
<td><strong>Firm’s Social Capital</strong></td>
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<tr>
<td>- Business Networking</td>
<td>- Bumiputera business networking approaches</td>
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<tr>
<td>- Business Reputation</td>
<td>- Intra-firm Relationship</td>
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<td></td>
<td>o Relationships with employees and business partners</td>
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<tr>
<td><strong>Firm’s Capabilities and Intangible Assets</strong></td>
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<td></td>
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<tr>
<td>- R&amp;D and Technology Capabilities</td>
<td>- Strategies of enhancing R&amp;D capabilities</td>
<td>- Discouraging culture of IP Management</td>
</tr>
<tr>
<td>- Intellectual Property Rights</td>
<td>- Cultivation of organisational innovation culture approaches</td>
<td></td>
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<tr>
<td>- Organisational Innovation Culture</td>
<td></td>
<td></td>
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<tr>
<td><strong>Firm’s Business Strategies</strong></td>
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<tr>
<td>- Product Differentiation</td>
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<td>- Technology Focus</td>
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<td>- Good Customer Service</td>
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<tr>
<td>- Business Diversification</td>
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<td>- Cost Competitiveness</td>
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</table>

Lastly, the roles of business stakeholders in assisting the Bumiputera firms as shown in Table 8.3 uncovered one interesting finding pertaining to the roles of policy makers. Generally, the focus of policy makers’ initiatives towards entrepreneurship development was influenced by their political ideology, either more towards Malay-Bumiputera nationalism or justice to all races. Yet, both may eventually provide more support to the Bumiputera as the majority population in Malaysia. In addition, an expected finding that emerged in this theme was the need for universities to regularly update their academic syllabuses in order to produce work-ready graduates who can meet the current industrial specifications. The universities should be alert to all changes in technology as well as the nature of business in the industry.
Table 8.3: Summary of Key Findings on Business Stakeholder Support

<table>
<thead>
<tr>
<th>Common Major Factors Underpinning the Major Concepts</th>
<th>Expected Contributing Factors Emerged from the Data Analysis</th>
<th>Unexpected Contributing Factors Emerged from the Data Analysis</th>
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<tbody>
<tr>
<td>Roles of Government Agencies</td>
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<tr>
<td>- Entrepreneurship training</td>
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<td>- Entrepreneurship policies</td>
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<tr>
<td>- Business networking and matching</td>
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<td>- Financial assistance</td>
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<tr>
<td>- Business Advisory</td>
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<td>- Business Facilities</td>
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<td>- Nurture entrepreneurship culture</td>
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<tr>
<td>Roles of Universities</td>
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<tr>
<td>- Cultivation of entrepreneurial culture</td>
<td>- The need to revise academic syllabuses regularly to meet industrial expectations</td>
<td></td>
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<tr>
<td>- Commercialisation of university research outcomes</td>
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<td></td>
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<tr>
<td>- Strengthen University-Industry Linkage</td>
<td></td>
<td></td>
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<tr>
<td>Roles of Policy makers</td>
<td></td>
<td>- The political ideology of the policy makers</td>
</tr>
</tbody>
</table>

The next section will triangulate important findings to emerge in this section in order to achieve a more holistic view of the association between the main findings.
CHAPTER NINE

TRIANGULATION OF IMPORTANT FINDINGS AND REVISITED OF CONCEPTUAL FRAMEWORK

9.0 INTRODUCTION

This thesis adapted a realism research paradigm (Section 4.2.2), whereby the application of a multiple stories milieu exploration paradigm (Perren & Ram 2004) in constructing meanings from each theme emerged in the findings. In this respect, triangulation between key findings that emerged in Chapter 5, Chapter 6 and Chapter 7 will be conducted in the following section in order to signify multiple confirmatory sources (Eisenhardt 1989; Yin 2009). This will represent a more holistic view of the factors influencing the sustainability of Bumiputera NTBSFs. Each key finding that emerged in the previous three chapters will be discussed, starting with the association between the founder’s human capital and the firm’s social capital.

9.1 Founder’s Human Capital and Firm’s Social Capital

Undeniably, the possession of founder’s human capital is crucial to the sustainability of Bumiputera firms (Section 5.2) and could also significantly impact a firm’s social capital (Section 6.1). The triangulation model in Figure 9.1 shows the association between these two themes uncovered in this thesis.

First, the development of a firm’s business networking can be influenced by founder’s human capital (blue line arrow) and the founder’s prior work experience, whereby founders have normally built connections with their potential customers and suppliers during previous work experience (Mosey & Wright 2007). Besides, the entrepreneurs also stated that their social connections at universities assisted their firm’s business networking through collaboration with former classmates who were in a similar line of business and business consultancy with former lecturers at the university.
Interestingly, there is a symmetrical association between the outcomes of human capital investment and business networking. The possession of relevant entrepreneurial knowledge and skills by the founders may help them to leverage their firms’ business networking, especially through communication and interpersonal skills which is needed in business activities. Alternately, the development of a firm’s business network can also enhance the entrepreneur’s skills and knowledge through interactions with other parties such as business partners and investors.
Likewise, the possession of founder’s human capital may also enhance the capability of a firm to manage their intra-firm relationship (purple line arrows). The entrepreneurs knew how to manage their employees through their prior work experience which has exposed them to managerial aspects in operating a business. Besides, the founder’s managerial skills and business knowledge are also important to manage workers and attend to partner expectation, especially in guiding them to achieve organisational goals by working in a team. As a result, the entrepreneurs could retain their employees which are important for a sustainable business.

In contrast with Morrison and Wilhelm (2004), however, the findings showed that founder’s human capital had indirect (or minimal) impact on the development of a firm’s business reputation. As suggested by Kwon and Rupp (2013), a firm’s reputation that is built from a human capital perspective would take quite some time in the eyes of its potential customers. Moreover, the liability of newness and smallness by the Bumiputera firms indicate that reputation building would be difficult and would require much attention from entrepreneurs as well as business stakeholders (Chollet et al. 2013). The findings suggest that the Bumiputera firm’s reputation could also be developed from the founder’s human capital, such that customers or suppliers will be more likely to engage with firms whose founders have a good formal education background, prior experience and a high level of knowledge in the industry. This is important to ensure the sustainability of a Bumiputera firm.

9.2 Founder’s Human Capital and Firm’s Capabilities and Intangible Assets

The triangulation model in Figure 9.2 shows that the ability of a firm to conduct R&D and to cultivate its innovative organisational culture is driven by the possession of the founder’s human capital. In line with the idea of Marvel and Lumpkin (2007), entrepreneurs with high technical skill and significant industrial knowledge as well as experience would have a high competency to lead their firms’ R&D activities (blue and purple line arrows), especially in developing their new products. Moreover, the findings uncovered that 22 out of 24 entrepreneurs-participants in this thesis have a bachelor degree in a related field, which could be an indicator that the successful establishment of a Bumiputera technology firm is founded by educated entrepreneurs as suggested in prior studies (Oakey 2003; Colombo & Grilli 2010).
Figure 9.2: The Triangulation between Founder’s Human Capital and Firm’s Capabilities and Intangible Assets

Source: Author
Interestingly, there is a symmetrical relationship between a founder’s outcome of human capital investments (relevant skills and knowledge) and a firm’s R&D capabilities, whereby the R&D activities conducted by the technology firms require an entrepreneur’s knowledge and skills, and in return, the outcome of R&D activities could also enhance the founder’s skills and knowledge. In this respect, the possession of both human capital and R&D capabilities are important to ensure that the firm can produce inventive products which are important for a sustainable business. Additionally, having realised the importance of possessing relevant skills and knowledge to create a firms’ innovative culture, the Bumiputera entrepreneurs have attended training in specific business areas to ensure that their skills are relevant to current industrial needs which leads to their ability to innovate and sustain the business.

Nevertheless, the model generated in Figure 9.2 was unable to demonstrate a strong association between a firm’s human capital and its IP (green dotted arrows). An important finding regarding the discouraging IP management practices by the participants in this thesis [Section 6.2.3(c)] could be explained by the limited knowledge of IP management possessed by the participants. Many initiatives have been taken by government agencies, such as MyIPO, in order to create awareness of the importance of IP management and to disseminate information about the procedures or processes involved in applying for IPRs, which demonstrate how serious effort has been applied to help firms to protect their IP in order to have a sustainable business, especially amongst the Bumiputera firms.

9.3 The Roles of Business Stakeholders and the Founder’s Human Capital

The contributing roles of founder’s human capital as discussed in Section 5.2 have been perceived as a fundamental aspect in the sustainability of Bumiputera NTBSFs, specifically in the investment of human capital (Section 5.2.1), and the outcomes of human capital investment (Section 5.2.2). In this respect, the triangulation between the findings in Section 5.2 and Chapter 7 uncovered the associations between the roles of business stakeholders and founder’s human capital (Figure 9.3).
Figure 9.3: The Triangulation between the Roles of Business Stakeholders and Founder’s Human Capital

Source: Author
These associations show the strategic roles played by all business stakeholders in enhancing the Bumiputera entrepreneur’s human capital in order to help them sustain their business. The most striking finding is that all business stakeholders were focused on providing entrepreneurship-related training and business development programs to the Bumiputera entrepreneurs (green dotted arrows). In this respect, the findings showed that universities would normally take the initiative to organise business entrepreneurship training by collaborating with other government agencies or specific policy makers, especially in terms of financial grants, such as from the Ministry of Education or MARA. The policy makers, on the other hand, will organise entrepreneurship training or workshops in their constituency in order to increase the participation of Bumiputera in business. Indeed, these efforts can also be seen as a strategy to win the hearts of their electorates (Mason & Brown 2013). More importantly, through these training and business development programmes, the business stakeholders would be able to generate important human capital investment outcomes, which can enhance relevant entrepreneurial skills and knowledge needed by the Bumiputera entrepreneur (blue dotted arrows).

Nevertheless, the investments of human capital are more likely to be emphasised by the universities rather than other business stakeholders, especially to provide formal education at tertiary levels to potential entrepreneurs (blue arrow). Besides, all the undergraduate students in Malaysia have to undergo industrial training which may expose them to the relevant industrial experiences. Indeed, the provision of courses offered at university is continuously reviewed by the academics to ensure the relevancy of the syllabuses to current industrial needs.

9.4 The Roles of Business Stakeholders and the Firm’s Social Capital

Figure 9.4 shows a conceptual model that triangulate the associations between the business stakeholders and a firm’s social capital in order to further explore the contributing roles of business stakeholders (Chapter 7) on the development of a firm’s social capital (Section 6.1), especially in relation to business networking (Section 6.1.1), business reputation (Section 6.1.2) and intra-firm relationship (Section 6.1.3).
Figure 9.4: The Triangulation between the Roles of Business Stakeholders and Firm’s Social Capital

Source: Author
The blue arrow in the model shows that the enhancement of business networking activities amongst the Bumiputera NTBSFs appears to be the main area to receive more attention from all business stakeholders either in direct (blue line arrow) or indirect roles (blue dotted arrow). Both government agencies and policy makers organised business networking or matching programs for Bumiputera entrepreneurs by inviting them to attend a business conference or an open discussion dialogue. These programs aimed to give information about the incentives provided by the government and to encourage strategic business collaborations via business matching initiatives between Bumiputera NTBSFs and Government-Linked Companies (GLCs).

Besides, the business development programs conducted by the government agencies and policy makers could indirectly strengthen the Bumiputera firm’s business networks. During those programs, the Bumiputera entrepreneurs meet other potential entrepreneurs and discuss their products and potential business opportunities. The model also shows that the provision of business facilities by the government would have indirect impact in enhancing a firm’s business networking. This can be interpreted in terms of the establishment of technology parks and business incubator centres by the government agencies in accordance with the specific technology-based industries (Kropp & Zolin 2005). For instance, MARA has established a manufacturing technology incubator centre for Bumiputera NTBFs in which the firms can leverage their business networks with other tenants or incubatees.

The universities can also enhance the Bumiputera business networks through university-industry linkage initiatives, especially by making a strategic collaboration with the Bumiputera firms in the product or technology development. Through these collaborative linkages, the universities can strengthen the Bumiputera NTBSFs’ social capital by making collaboration with few organisations in conducting a research project which may require: (i) grants from the government agencies and (ii) current industrial knowledge from the industrial firms.

As a result, the Bumiputera firm could exploit this collaboration to leverage their business network. Additionally, the commercialisation of research outcomes by the universities could
also indirectly enhance the Bumiputera firm’s business networks through the spin-off strategy and the appointment of selected Bumiputera firms, whereby these firms are responsible for commercialisation activities and manage the business operations. Eventually, the initiatives taken by the universities would not only help the Bumiputera firm to establish a strong business network with the universities, but also with other stakeholders who are involved in those activities.

The model shows that the roles of business stakeholders in enhancing a Bumiputera firm’s business reputation are less encouraging, compared with business network development. This is because reputation is not easily developed by the Bumiputera firms, especially among newly-established firms. The development of trust from customers and suppliers in doing business consumes considerable time, and hence, business stakeholders such as universities and government agencies could take proactive initiatives. The connections (purple line arrows) showed that the universities can enhance the Bumiputera firms’ reputation through university-industry linkages and commercialisation, whereby the development of a firm’s product through collaboration with researchers at the university will increase the customers’ level of trust to buy their products. Indeed, some spin-off Bumiputera firms are commercialising products developed from a well-research activity by university researchers. On the other hand, the government agencies such as SIRIM can provide R&D facilities and experts for the Bumiputera firms to test the quality of their products at a cheaper service fee compared with other private industrial laboratories. Thus, having certified products from SIRIM will enhance the reputation of the firms. Interestingly, a firm’s business reputation can also been influenced by the business networks they possess, especially through collaboration and business generation with other firms in the industry.

This model has uncovered that business stakeholders can still wield influence on the internal matters of an organisation, which affects the capability of the Bumiputera entrepreneurs to manage their intra-firm relationship (yellow line arrow). This can be done by government agencies or policy makers through the implementation of business development programs that place emphasis on the importance of human resources management in operating a business.
9.5 The Roles of Business Stakeholders and Firm’s Capabilities and Intangible Assets

Figure 9.5 shows a conceptual model that triangulates the associations between the business stakeholders and the firm’s social capital in order to further explore the contributing roles of business stakeholders (Chapter 7) on the development of a firm’s resources and capabilities (Section 6.2), especially in related with R&D capabilities (Section 6.2.1), innovative culture (Section 6.2.2) and IPRs (Section 6.2.3).

As discussed earlier in Section 8.2.2 (b), R&D and technological capabilities are crucial for the sustainability of Bumiputera NTBSFs in order to enhance their abilities in the creation and enhancement of innovative products in the challenging technology industry. Nevertheless, the limited resources possessed by Bumiputera firms require relevant business stakeholders to give necessary support in order to enhance the Bumiputera R&D and technological capabilities. The model generated in Figure 9.5 shows that the respected business stakeholders can act to enhance the firm’s capabilities (blue line arrow). The provision of financial assistance and business facilities by several government agencies will boost the abilities of the Bumiputera firms to conduct their R&D activities such as the pre-seed funds and commercialisation grants given by MDeC. This financial assistance aims to help the Bumiputera ICT to develop an ICT-based product prototype and commercialise the product in the market. Additionally, respected government agencies and policy makers have also organised business networking and matching activities which could help the Bumiputera firms to form a strategic alliance with other firms in the new product developments (Kang & Park 2012b). Further, through business networking activities the entrepreneurs would also obtain information and knowledge from other firms. Delving into the role of the universities, the findings showed that the formation of university-industry linkages such as symbiosis programs are few good initiatives taken by the universities to help these Bumiputera firms to enhance their R&D and technological capabilities. Interestingly, few entrepreneurs were also still contacting their former lecturers or research supervisor, and even appointed these people as their external consultants, in order to seek technological support in developing their products.
Figure 9.5: The Triangulation between the Roles of Business Stakeholders and Firm’s Capabilities and Intangible Assets

Source: Author

The cultivation of organisational innovative culture amongst the Bumiputera NTBSFs has been regarded as crucial for the government to enhance the performance of these firms (Section 6.2.2). Indeed, the formulation of policies by the policy makers positively impacts the creation of an innovative culture among Bumiputera in the sense that these policies
encourage more Bumiputera to be involved in the technology-based industry. For instance, the New Economic Model introduced by the government aims to transform the country into a high income nation, whereby the participation of Bumiputera in strategic non-traditional industries such as ICT and Biotechnology is highly encouraged as this society group needs more attention from the government due its socioeconomic condition (Section 2.1.3). On the other hand, the university-industry linkage may also help the Bumiputera firms to inculcate their firm’s innovative culture by getting external sources of information and knowledge from university researchers (Bjerregaard 2009). Moreover, the entrepreneurship-related courses offered by the universities, as well as other business development training organised by the government agencies and policy makers, may also indirectly impact the development of a firm’s innovative culture. This can be explained in terms of individual entrepreneurial mindset and creativity that have been nurtured during those programs.

Due to stiff competition and the dynamic nature of the technology-based industry, the Bumiputera firms have highlighted the importance of IP to protect their new products and to increase their firm’s value through commercialisation activities (Rassenfosse 2012). Nevertheless, the application of IP amongst Bumiputera firms was minimal due to limited financial resources and knowledge of the IP application process. Hence, support and assistance from the business stakeholders, as shown in the model (purple line arrow), was important to tackle the issues mentioned in Section 6.2.3(c) and eventually assist them in sustaining the business. In this respect, the establishment of MyIPO as an organisation responsible for the development of IP in Malaysia is seen as an avenue for the SMEs to seek advice on IP management. Several outreach programs or exhibitions have also been organised by this body to give necessary information about IP management. Besides, several conditional grants for the IP management have also been offered to the technology firms by agencies such as MDeC and MTDC. On the other hand, the commercialisation and innovation office of the universities also provides consulting services and advice in IP (innovation) management to the private sectors. Indeed, some universities have organised IP awareness programs and appointed patent agents that could help the university community and industrial partners on IP management.
9.6 REVISITED CONCEPTUAL FRAMEWORK
This thesis aims to uncover factors influencing the sustainability of Bumiputera NTBSFs and to further understand to what extent the business stakeholders play their roles in assisting the Bumiputera NTBSFs to sustain their business through the provision of relevant support, and if appropriate, represent this through an appropriate model. The initial model (Section 3.2) in Figure 9.6 was developed based on the RBV theory that focuses on the idiosyncratic resources of a firm, which are valuable, rare, imperfectly imitable and non-substitutable (Barney 1991; Peteraf 1993), and which will lead to the sustainability of a firm through the creation of competitive advantage.

Figure 9.6: Initial Conceptual Model

By blending the ideas from Fahy (2002) and Galbreath (2005), the initial model highlighted the roles of firm-specific resources, specifically intangible assets and capabilities of a firm that led to a sustainable competitive advantage. In addition, having considered the significant roles played by the Malaysian government (Section 2.4.3), this model focuses on the formulation of national policies and the provision of business infrastructure which lead to the creation of support and assistance to the Bumiputera firms in sustaining their technology venture.
Based on the Human Capital Theory, this initial model extended the concept of founder-specific factors that focuses on the roles of founder’s human capital such as the founder’s formal educational background, prior experience, level of skill, knowledge and entrepreneurial motivation which may impact the ability of the Bumiputera to sustain their business (Becker 1962, 1964), especially increased productivity and earnings exploited from these factors (Bates 1985; Danvila del Valle & Sastre Castillo 2009) via the founder’s ability to recognise and exploit viable business opportunities (Shane 2000; Davidsson & Honig 2003).

The second model as shown in Figure 9.7 incorporates the initial findings generated from the pilot study undertaken during stage I of this thesis. In this model, the social capital aspect in operating a business has emerged as an important factor that assisted the Bumiputera NTBSFs to sustain the business. In line with the Social Capital Theory (Granovetter 1973; Coleman 1988), this model extends the social capital aspects of a founding entrepreneur by investigating the roles of strong ties of bonding social capital (Davidsson & Honig 2003) such as family background and support and friends’ support. In this respect, the founder-specific factors were categorised in terms of founder’s human capital and founder’s social capital.

From a firm-level perspective, the development of the firm’s social capital was refined in the second model, particularly to recognise the role of business networking amongst the Bumiputera firms in interacting or collaborating with other firms or organisation to sustain their business. Through this networking approach, the Bumiputera NTBSFs can identify potential parties who can give them necessary resources to sustain the business, such as financial assistance and R&D collaboration. In addition, the construct intangible assets and capabilities have been merged into firms’ capabilities and intangible assets, whereby this construct focuses on firms’ IPR and R&D and technology capabilities. This model also adds another element under this construct called as firms’ innovation culture that emphasises on the possession of an encouraging innovation culture by the Bumiputera firms in order to enhance their products and business processes which eventually lead to their ability to sustain the business. As a result, this model creates two sub-dimensions under firm-specific resources: (a) firm’s social capital and (b) firm’s capabilities and intangible assets.
Figure 9.7: Second Conceptual Model of this Thesis (Source: Author)
Having realised that entrepreneurship has become an important socioeconomic tool for the Bumiputera, the most significant contribution of the second model is the recognition of the roles of business stakeholders (other than government) such as university academics and policy makers (politicians) in providing necessary support to the Bumiputera NTBFs to sustain their business. In this respect, several initiatives taken by the business stakeholders such as implementing entrepreneurship-related training and providing advisory support will help the Bumiputera entrepreneurs to operate their business effectively. Thus, the government-specific resources in Model 1 has been refined into the business stakeholder’s support in Model 2, which shows a more holistic, yet practical perspective of the business support system for the Bumiputera NTBSFs to strategically sustain their business.

Based on the extant literature and the findings of this thesis, Figure 9.8 shows the revisited conceptual model with a more holistic view of relevant factors influencing the sustainability of Bumiputera. This model extends the concept of founder-specific factors into three main themes, in which the founder’s attributes is the additional theme that emerged during from the findings. This theme comprises the founder’s entrepreneurial personalities and the founder’s entrepreneurial motivation, whereby the personality of founders and their motivation to venture into a business have a significant impact on the sustainability of the Bumiputera firms. In addition, the analysis of founder’s social capital has contributed one new theme called the entrepreneur’s surrounding life environment as a factor that could influence the Bumiputera firm’s sustainability. In this respect, the entrepreneur’s connections with politicians and the Ali-Baba practices amongst the founder would influence the ability of the firms to operate their business. Under the umbrella of firm-specific resources, a firm’s business strategy has been found as one of the factors that could influence the sustainability of the Bumiputera firms. In this respect, the Bumiputera have employed certain business models or strategies to compete with other firms in the industry to ensure their business survival. Besides, a firm’s social capital element has been extended into three sub-themes, whereby the additional sub-theme that emerged from the findings is the firm’s intra-firm relationship. Having a good relationship with employees and business partners has been found crucial for the Bumiputera to sustain the business in the long-term.
Figure 9.8: Revisited Conceptual Framework
Last but not least, this revisited model shows each role played by each business stakeholder in detail, in order to assist the Bumiputera firms to sustain their business. Through the provision of relevant support and assistance offered by the business stakeholders, an encouraging business ecosystem for Bumiputera firms can be nurtured to ensure their survival in the business.

9.7 SUMMARY

This chapter illustrates the interplay of selected key findings in this thesis through triangulation. This provides a broader view of each key finding that influences the sustainability of Bumiputera NTBSFs, especially in regards to identify constructs underpinning the theme of this thesis: the founder-specific factors, firm-specific resources and business stakeholder support and assistance.

This chapter has developed five main triangulation models that elaborate the connections between: (a) founder’s human capital and firm’s social capital, (b) founder’s human capital and firm’s capabilities and intangible assets, (c) business stakeholder’s support and founder’s human capital, (d) business stakeholder’s support and firm’s social capital, and (e) business stakeholder’s support and firm’s capabilities and intangible assets. Through these triangulation models, this chapter will extend our understanding of the application of associated selected theories towards key findings as well as uncover our understanding of the shared roles between business stakeholders. More importantly, this chapter has revisited the conceptual model of this research, whereby the significant contribution of this model will be briefly discussed in the next chapter.
CHAPTER TEN

CONCLUSION

10.0 INTRODUCTION
In this chapter, which draws the thesis to its conclusion, research inquiry statements will first be discussed to shed some light on what factors matter for a sustainable Bumiputera NTBSFs. The sections that follow are discussed in terms of their contribution to the body of knowledge and methodological aspect. Based on key findings, Chapter 10 also offers a number of recommendations for Bumiputera entrepreneurs, government and policy makers, and university academics, especially pertaining to their roles and actions towards a sustainable Bumiputera technology venture. This chapter concludes by identifying possible limitations and suggesting avenues for future research.

10.1 RESEARCH INQUIRY STATEMENTS
In order to answer the research question, this thesis has adopted a realism approach through an adaptation of Perren and Ram’s (2004) multiple stories milieu explorations case-study method. Three key themes; namely founder-specific factors, firm-specific resources and business stakeholder support and assistance, have emerged as the foundation that led the researcher to explore the relevant factors influencing Bumiputera business sustainability.

From the perspective of founder-specific factors, the identification of Bumiputera technology entrepreneur’s motivations to venture into business, especially in the technology-based industries, could shed light on the factors that motivate them to operate and sustain a business. For example, the cultivation of a good business environment in terms of business support from the government could boost Bumiputera motivations to venture into a business and eventually to sustain the business. Indeed, the findings show that the government has been implementing entrepreneurship development programs to the Bumiputera entrepreneur, such as appointment of mentors to guide these Bumiputera NTBSFs and provision of business grants to eligible firms. Besides, findings uncovered that several universities have also
implemented a screening process to select their graduates, who are motivated to venture into business and possess good personalities, to be trainee entrepreneurs (surrogate entrepreneurs) whereby these graduates will be responsible to commercialise university inventions.

Further, in line with the HCT, the possession of human capital by the Bumiputera entrepreneur is important in order to build up the abilities and skills to sustain their technology venture. This thesis uncovered that almost all Bumiputera technology entrepreneurs have a fairly impressive formal educational background. Nevertheless, technology entrepreneurs would not easily transform the possession of a good educational background into a key resource in sustaining their business. This is due to commonness of this resource as most technology entrepreneurs are educated people. This can be interpreted in terms of possession of the characteristic of resources as proposed by Barney (1991) under RBT that requires resources to be valuable, rare, inimitable and non-substitutable in order to provide sustained competitive advantage. Further, another issue raised by the entrepreneurs-participants was the relevancy of syllabuses taught in higher education institutions that were more theoretical rather than relevant to the industrial needs. As a result, the combination of a good formal education background and significant prior industrial experience could increase the ability of the entrepreneurs to sustain their business.

The thesis also uncovered that the social aspects surrounding the founding entrepreneur played a significant influence towards the sustainability of Bumiputera NTBSFs. The influence of entrepreneurial parents and friends has led to the intention of the Bumiputera to venture into a business, whereby the support and assistance, either financial, moral or business advisory from these social networks, enhanced the entrepreneur’s ability to sustain the business. A remarkable finding is the ability of non-family business background entrepreneurs to convert their limited social support (such as sceptical views of their business venture) into a challenge for them to prove to others that they can be successful entrepreneurs.

Besides, the family cultural aspect of Bumiputera (mostly Malays) also emerged as an influencing factor of Bumiputera entrepreneurs. This is especially relevant to the work-life balance issue faced by the female participants. In this respect, having good spousal support
and ability to balance business and family matters will reduce stress, a factor that can impede the sustainability of their business. In addition, the surrounding environment of the Bumiputera entrepreneurs could also influence them in sustaining the business, such as having a role model who can guide them in the business and their connections with key policy makers who can facilitate their application for any government contract. The exploitation of such scenario will indirectly impact the ability of in the business, as they know the art of sustaining the business. Conversely, the Ali-Baba business practices, which may bring a positive impact to Bumiputera short-term, has been criticised as an ineffective strategy to sustain a business in the long-term. This is because the Bumiputera firm would not enhance necessary entrepreneurial skills or knowledge through outsourcing their government-granted projects to the ethnic Chinese-owned business.

From the perspective of firm-specific resources, findings showed that the development of a firm’s social capital is important for the sustainability of Bumiputera NTBSFs, especially through business networking activities due to the liability of newness and smallness faced by these firms. In this respect, many firms have formulated their networking strategies either through business collaborations and attending business conference in order to develop a synergistic relationship with other industrial players. Indeed, through this synergistic relationship the Bumiputera NTBSFs can enhance their capabilities and other intangible assets such as R&D capabilities and innovation culture of their business, which ultimately leads to a sustainable business. Moreover, the firm’s reputation can also be enhanced via strategic business networking whereby the firm will inform others of their business in the industry, especially their products and capabilities.

Another important aspect underpinning the firm-specific resources is the IP management practices that showed a discouraging pattern amongst the Bumiputera NTBSFs. Though this matter has been perceived important for a firm’s sustainability (e.g. protecting a firm’s invention), several IP management issues have been uncovered such as complicated procedure and costly IP registration and maintenance charges. This has led Bumiputera firms to keep their inventions as a trade secret and to seek assistance from relevant agencies in applying for IPRs. Further, several business strategies has been employed by the firms in achieving their
organisational goals and maximising their profits such as through product differentiation, business diversification and cost effective, which eventually lead to a sustainable business.

Finally, findings have shown that the business stakeholders such as government agencies, universities and policy makers have placed strong emphasis on the development of Bumiputera entrepreneurs. Nevertheless, it has been argued that a lack of monitoring action, especially by the government agencies, such as towards the provision of business grants to Bumiputera NTBSFs could lead to the misuse of the government grants. Besides that, findings also showed that business stakeholders have been implementing several programs to inculcate entrepreneurial culture or mindsets amongst Bumiputera to increase their participation in the business, especially in the technology-based business. Further, several agencies have taken a proactive initiative by focusing on building a strong linkage between industry, government and entrepreneurs. The university-based incubation centres funded by the government is one effort that demonstrates the importance of having such collaborations between parties involved in helping the Bumiputera technology entrepreneurs to sustain their business.

In addition, some government agencies such as SME Corp have initiated business matching programs between the entrepreneurs and venture capital firms as well as other MNCs to collaborate. Indeed, the government has introduced the Bumiputera Vendor Development Programs (VDPs) that aim to increase the participation of Bumiputera firms in big projects funded by the government through its agencies. This will create more business opportunities for the Bumiputera firms that will ensure income (financial resources) to sustain their business.

10.2 CONTRIBUTION OF RESEARCH TO THE BODY OF KNOWLEDGE

The outcome of this current thesis contributes to the body of knowledge in four main aspects. First, findings generated from this thesis are contributing to the extension of the entrepreneurship literature which predominantly focuses on western non-Indigenous population samples in developed countries. In this respect, the findings showed that the knowledge principles proposed by studies conducted in these developed western countries could also be applied in the Malaysian context. Nevertheless, the adoption of these principles
should be carefully implemented through a consideration of other specific aspects of Bumiputera society such as the societal culture, government intervention initiatives and political environment of the country. For instance, the definition of what constitutes a resource in sustaining a business by the Malaysian Bumiputera entrepreneurs could be extended from what has been outlined in others studies of the RBT and HCT in other settings, especially the role of spiritual strengths and Malay nationalism spirit possessed by the Bumiputera entrepreneurs in operating their business.

Second, the findings provide a significant theoretical contribution to the field of entrepreneurship research, especially to the body of Indigenous entrepreneurship knowledge by exploring factors influencing the sustainability of Indigenous enterprises in the technology-based industry, which to the researcher’s knowledge, has seldom been addressed in the Indigenous entrepreneurship literature. Interestingly, the findings of this thesis have eventually bridged two different fields of entrepreneurship research, namely Indigenous entrepreneurship and technology entrepreneurship. The integration of both major themes in this thesis is considered as a contributing aspect of this thesis as most Indigenous entrepreneurship studies were conducted in traditional industries rather than technology-based industries.

Third, this thesis brings an important contribution in explaining how the involvement of Indigenous in technology-based industries should not only enhance the sustainability of Indigenous business, but also could lead towards enhancing the sustainability of their society in Malaysia’s socioeconomic landscape, especially the distribution of national wealth and resources. Having examined the Bumiputera as a majority group of people in Malaysia (more than 60 percent), with less participation in business activities and in receipt of more privileges from the government, could lead to the amalgamation of both business sustainability and societal sustainability concepts to a country whose Indigenous are the majority, but have less economic status. This thesis challenges dominant theoretical frameworks which normally studied Indigenous entrepreneurship from a traditional-based industry in non-Indigenous dominated country (such as Australia and the USA). Indeed, this thesis sheds some light on studying Indigenous entrepreneurship in a technology-based perspective, whereby the
historical, cultural (include ethnic nationalism and religious code of conducts) and policy aspects have shaped the direction of the research context of the Malaysian Bumiputera entrepreneurship development.

Lastly, through the development of selected triangulation models in Chapter 9, the thesis illuminates how the associated theories in this thesis are connected to each other. For example, the triangulation between founders’ human capital and firms’ social capital showed that the association between human capital theory and social capital theory (Santarelli & Tran 2013), whereby the possession of optimal human capital (e.g. prior entrepreneurial experience) leads to the desirable social capital (e.g. business network) which will enhance the sustainability of a firm.

10.3 METHODOLOGICAL CONTRIBUTION

Methodologically, an important contribution of this thesis is through the employment of multiple case studies approach in this study that has provided a richer understanding of the factors influencing sustainability of Bumiputera NTBSFs. Indeed, the originality of this current thesis lays in the large amount of data gathered in the research field either through interviews, relevant documents and daily limited observations. Interestingly, the triangulation of findings from various cases enables the researcher to explain and further justify several phenomena or issues uncovered in this thesis. Indeed, various opinions from relevant parties in this thesis such as academics, policy makers and authority bodies on the research have provided a more holistic and true sense of the situation.

Moreover, this thesis employed a realism paradigm in exploring the subjective meaning within a Bumiputera entrepreneurs’ constructed realities on the phenomenon of business sustainability of Bumiputera firms in the technology-based industries (Stokes & Perry 2007). This was implemented through the adaptation of Perren and Ram’s (2004) multiples stories milieu explorations approach which was generated from various social actors such as Bumiputera entrepeneurs, government officers and university academics. Besides, this thesis draws on Weick’s (1989) conceptual building approach. This technique focuses on conceptualising and sense-making to interpret participants’ involvement in, and the main
constructs underpinning the sustainability of Bumiputera firms. This approach provides a more realistic and holistic view in addressing the research question.

The employment of both hand coding (manual) and NVivo software to analyse the data enhanced the ability of the researcher to be more creative and systematic to ensure the rigour of the thesis. Indeed, utilising both manual and computer-assisted software has assisted the researcher to recheck the consistency of the data analysed from both techniques.

**10.4 RESEARCH RECOMMENDATIONS AND IMPLICATIONS**

This thesis offers an important contribution for the development and implementation of current business practice amongst Bumiputera entrepreneurs, specifically in the technology-based industry to sustain their business. Additionally, the findings and the revisited conceptual framework of Bumiputera business sustainability have practical and policy implications for the Bumiputera entrepreneur and relevant business stakeholders, which will be discussed here.

**10.4.1 Recommendations for Bumiputera technology entrepreneurs**

This thesis discovers and further enhances understanding of the personality profile of Bumiputera entrepreneurs in sustaining technology-based businesses. Remarkably, the findings have shown that spiritual strength possessed by the Bumiputera entrepreneurs is believed to increase the ability to sustain a business. Due to this fact, the Bumiputera entrepreneurs should be equipped with a right inner spiritual strength through spending their time and energy on spiritual exercise or meditation. The effect of this is to boost their self-confidence levels in running a business. This thesis also suggests that the Bumiputera should not put too much dependency on the assistance provided by the government, especially through their connections with key policy makers as well as the affirmative actions of the government in helping Bumiputera since the introduction of NEP in 1970. This is because these strategies are temporal in nature rather focusing on strategic direction of the Bumiputera business.

In addition, the entrepreneurs should also be able to assess their strengths and weaknesses in regard to relevant entrepreneurial skills and knowledge identified in this thesis as crucial for a
recognised their current position in the industry, the Bumiputera entrepreneurs should be proactive in enhancing their human capital stocks by attending business development programs and training organised by relevant qualified organisations. Consequently, the Bumiputera entrepreneurs should be able to access the latest information regarding incentives provided by the relevant organisations and be more aggressive in applying any type of assistances available (e.g. soft loan and R&D collaboration) for the benefits of their business.

It is also recommended that Bumiputera technology entrepreneurs should leverage their business networks in order to overcome the liability of being small. Hence, by strengthening their business networking activities, they could acquire necessary business resources from potential business partners and form strategic collaborations in crucial business areas such as R&D and marketing activities. The Bumiputera firms should extend their networks to other non-Bumiputera firms (especially Chinese firms) and foreign-owned firms to create more business opportunities and to gain support from these networks.

The discouraging culture of IP management amongst the Bumiputera NTBSFs uncovered in this thesis should seriously be addressed by taking a proactive initiative to consult with relevant authority (such as MyIPO, SME Corp and universities) in order to seek information about IP management, and perhaps, to apply any available grants for cover the cost of maintaining their IPRs. This is because the possession of IPRs could assist them in protecting their inventions and increasing their reputations in the business.

10.4.2 Recommendations for policy makers

Through the discovery of factors influencing the sustainability of Bumiputera NTBSF in this thesis, the policy makers could use this information in revising current policies and formulating new policies towards the development of sustainable Bumiputera entrepreneurship, especially in the technology-based industries. Four main implications towards policy emerged in this thesis.
First, the provision of government incentives to the Bumiputera firms, namely financial grants and tax exemptions, should be revised and applied only to those Bumiputera firms with the true potential to expand their business. This should be done by examining a firm’s profile such as the background of the founding entrepreneurs as well as the firm’s business growth and performance. Indeed, studies (Shane 2009; Mason & Brown 2013) have proposed that the formulation of entrepreneurship policies should emphasise high-growth firms which may bring more impact to a country’s economic growth. In this respect, the entrepreneurship policies should promote more Bumiputera participation in the strategic national industries such as ICT, biotechnology and manufacturing through the provision of relevant support and incentives. More importantly, the information about innovation-based policies (e.g. the 2005 National Biotechnology Policy) and its key contents should be effectively disseminated to Bumiputera entrepreneurs (e.g. in the agriculture sector) who have strong potential to develop their business to a higher level through R&D activities and business collaboration strategy.

Second, a good monitoring system should be developed in order to ensure the effectiveness of policies undertaken by the government agencies. This monitoring system would help the policy makers to evaluate the impact of the intended policies towards promoting a sustainable Bumiputera technology entrepreneurship, especially in terms of financial grants and government projects awarded to them. The performance of grant recipients amongst the Bumiputera firms should be monitored on a timely basis, especially to ensure that the fund allocated is spent accordingly and projects awarded to them are conducted according to the specification given. This monitoring system could indirectly reduce the impact of Ali-Baba practices in which the Bumiputera firms just bid for the government projects, and once successful they outsource all project work to their Chinese business partners. In fact, having so many layers in outsourcing all the works will lead to unsatisfactory project quality. Besides, the allocation of financial grants to the Bumiputera firms should be closely monitored by the government to ensure the efficiency of the capital given in implementing the business grants project.

Third, the implementation of entrepreneurship policies should stimulate a better coordination amongst government in order to maximize integration of entrepreneurship support schemes
and minimize conflicting agendas. The findings uncovered that many government bodies are involved in the development of sustainable Bumiputera entrepreneurship (e.g. MARA and SME Corp.) and technology-based industries (e.g. MIDA and MTDC). Besides, several ministries also conducted their own entrepreneurship based on their ministerial portfolios such as Ministry of Women, Family and Community Development (women entrepreneurship), Ministry of Plantation Industries and Commodities (agro-based entrepreneurship). Therefore, a better coordination effort to develop a sustainable Bumiputera technology entrepreneurship amongst these agencies should be strengthened through strategic collaborations between these ministries and agencies in grooming the Bumiputera firms. Through such collaborative efforts, the provision of resources to implement entrepreneurship policies could be allocated efficiently based on the roles played by each agency. Indeed, the redundancy of implementing similar type of programs in promoting Bumiputera entrepreneurship can be moderated due to better coordination.

Fourth, through the discovery of factors influencing the sustainability of Bumiputera NTBSF in this thesis, the government and policy makers could use this information as a yardstick in implementing any entrepreneurial training and development program. The training conducted for the Bumiputera firms should focus on specific areas considered crucial for a sustainable business such as financial management and technology. More importantly, these training programs should also aim to cultivate entrepreneurial mindsets and beliefs amongst Bumiputera, in order to motivate them to be more persistent in operating the business. The appointment of mentors amongst successful Bumiputera technology entrepreneurs is an effective way to guide nascent Bumiputera entrepreneurs in sustaining their business, through the provision of advisory support and hands-on technical training from the experienced entrepreneurs.

10.4.3 Recommendations for higher education institutions
The current findings showed that the cultivation of entrepreneurial culture should be nurtured amongst the Bumiputera graduates, especially in science and engineering fields of study to create more Bumiputera entrepreneurs in the technology-based industry. Thus, the higher education institutions should play an active role in providing relevant entrepreneurship-based
training or business development programs to potential entrepreneurial graduates to assist them to venture into business. The spin-off program by the universities could create more surrogate entrepreneurs among Bumiputera in order to promote the participation of Bumiputera in the technology-based industries.

Academics should ensure the syllabuses taught in the higher education institutions are relevant to current industrial needs. This is to ensure that the entrepreneur’s possession of a good formal education could be reflected in terms of their ability to produce a viable product that fulfils the market needs. More importantly, the universities can appoint industrial experts as their adjunct professors in order to give students a better picture of current practices by the industrial firms rather than focusing on theoretical aspects only. In this respect, universities should monitor the progress of students who undergo industrial training to gain valuable experience by helping them to choose relevant industrial partners who can act as their mentors. Having this practical knowledge would help Bumiputera nascent entrepreneurs to have clear expectations on the challenging nature of operating a business, especially in the technology-based industries.

Additionally, the higher education institutions should strengthen their role as a mediator between the industrial players, entrepreneurial ventures and universities via the university-industry linkages. Collaboration between the universities and industries should be undertaken in strategic sectors such technology-based industries to produce more research outputs that could be commercialised. In this respect, universities could actively identify those Bumiputera technology ventures which have a potential to be their strategic partners in commercialising their research outputs in the market. This symbiotic relationship would eventually bring benefits to the Bumiputera firms in terms of transfer of knowledge and technology gained from the university researchers. In return, the universities could commercialise their products rather than keep them on the shelf. Through this partnership, the universities could also assist the Bumiputera firms in finding relevant investors to fund their operations. Indeed, the collaboration with the universities might help the Bumiputera firms to reduce their financial burden in conducting R&D as most R&D funds in Malaysia are given to the universities.


10.5 LIMITATIONS

Marshall and Rossman (2011) claim that any study has limitations. Even though this thesis has made several contributions to body of knowledge, practice and policy, this thesis inevitably has several limitations. First, the unit of analysis in this thesis is restricted to Bumiputera entrepreneurs in the technology-based industries within several sectors only (i.e. ICT and biotechnology) and mostly scattered around the urban area in Malaysia such as Kuala Lumpur, Selangor and Johor Bahru. In this respect, the factors influencing the sustainability of business amongst Bumiputera may be different in other regions due to different nature of business and the incentives packages provided by each state-government in Malaysia. Nevertheless, the development of such emerging biotechnology and ICT industries would be influenced by efforts taken by the federal government across Malaysia.

Second, the application of qualitative case-studies in this thesis would not be able to measure the strength of factors affecting the sustainability of Bumiputera technology entrepreneurship and its relationships. Nevertheless, the aim of this thesis is to uncover factors so as to explain the specific phenomenon in regard to abilities of Bumiputera NTBSFs to sustain in the business. Further, the employment of NVivo in analysing qualitative data helped the researcher to identify which factors have been cited most by the participants, particularly through the generation of matrix-coding queries of each theme emerged in the thesis.

Third, relevant factors uncovered in this thesis were based on the participants’ beliefs and views and this may eventually lead to the biased perspective of the participants. Moreover, the entrepreneurial experiences of the participants (e.g. grants received from the government) would shape their perspectives on which factors are crucial for the Bumiputera sustainable entrepreneurship. Nonetheless, the application of triangulation between findings from various groups of participants (e.g. Bumiputera entrepreneurs, government officers, university academics and policy makers) and research methods (e.g. interviews, document analysis and field notes) in this thesis would lessen the impact of biases. This is because the differences of sources and the richness of information helped the researcher to verify the participants’ experience and thoughts, and to have an improved picture of a particular issue. Additionally, biased interpretations may also be caused by the researcher’s ability to interpret the findings.
based on own knowledge and perspectives. In this regard, this issue have been attended with research credibility and validity issues that has been discussed in Chapter 4.

Finally, the thesis employed a cross-sectional type of research, whereby the current economic situation of the Bumiputera entrepreneurs would influence their views on which factors influence their ability to sustain the business. A longitudinal study will show several factors which will evolve over time such as founder’s human capital and firm’s business networks that could strengthen the ability of Bumiputera in sustaining business. Coincidentally, the data collection was conducted in the early 2010, a period during which Malaysia was in the process of recovering from the 2009 financial crisis that significantly impacted Bumiputera business sustainability. Hence, the researcher obtained views on how the entrepreneurs survive from such a situation and the roles played by the business stakeholders in seeking to minimise the impact of this critical situation among business firms, especially Bumiputera NTBSFs.

10.6 DIRECTIONS FOR FUTURE RESEARCH

This study reveals that the Bumiputera theoretical perspectives of technology entrepreneurship showed little gap from the conventional Western theories of entrepreneurship. In this respect, the employment of Western models of entrepreneurship might not be totally appropriate for the development of Bumiputera entrepreneurship in Malaysia. Even though some theories of Indigenous entrepreneurship have been conducted by several prior researchers (Peredo et al. 2004; Foley 2007), these theories were developed based on Indigenous people in many western countries where these people were a minority people in those countries and not really engaged in a technology-based business. Therefore, further research on this aspect could be further developed in order to confirm or refute this assumption.

Second, the cultural identity of the Bumiputera entrepreneurs has emerged as one of the key elements that influence the entrepreneurial intentions and personalities of Bumiputera entrepreneurs, particularly in regard to the Islamic values and the spirit of Malay nationalism upheld by the participants. A future study on the effect of Bumiputera cultural identity towards a sustainable technology-based venture would be worth investigation in order to
extend our understanding on the connection between Indigenous entrepreneurship and technology entrepreneurship in a developing country.

The relevant factors influencing Bumiputera sustainable business uncovered in this thesis may also guide future research to investigate technology entrepreneurship development from the non-Bumiputera communities in Malaysia, especially Chinese and Indian background technology entrepreneurs. This investigation will be fruitful to explain different types of support and assistance received by these non-Bumiputera entrepreneurs in technology ventures as well as business networks strategies employed by these entrepreneurial groups. Interestingly, a comparison could be conducted between ethnics in Malaysia to give a better understanding of the development of technology entrepreneurship in Malaysia.

Lastly, the employment of a quantitative approach in the future research will complement the current study that had identified the factors affecting the sustainability of Bumiputera technology entrepreneurship. The application of the quantitative approach could measure relative weight of importance of each factor, particularly through several multiple-criteria techniques such as Saaty’s (1980) Analytic Hierarchy Process (AHP).

10.7 CONCLUSION

In conclusion, research on Bumiputera sustainability in technology-based business is still in its infancy. There are certainly significant opportunities for further research. This thesis is a milestone for other researchers in exploring into this topic further, whether in Malaysia or in other contexts. The revisited conceptual model of the thesis may provide theoretical and practical implications for Bumiputera NTBSFs by providing a foundation for future Malaysian Bumiputera NTBSFs research and the formulation of National Policy as well as being considered by other Indigenous entrepreneurs in their developing countries. An essential point is that this thesis is not to be intended as an endeavour to determine which perspective is right. It is, rather, the attempt to find constructs of sustainability for Bumiputera technology-based firms where perspectives diverge and suggestions about how to reconcile them.
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## APPENDICIES

### APPENDIX A: PUBLICATIONS OF MALAYSIAN-RELATED TOPICS IN THE BIG 5 ENTREPRENEURSHIP JOURNALS

<table>
<thead>
<tr>
<th>No.</th>
<th>Big 5 Journal of Entrepreneurship Research</th>
<th>2012 Impact Factor**</th>
<th>Malaysian Perspective</th>
<th>Themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Journal of Business Venturing (JBV) 1996 – current (30 Generated)</td>
<td>2.77</td>
<td>2 associated articles</td>
<td>Technology Policy and Entrepreneurial Intentions</td>
</tr>
<tr>
<td>3.</td>
<td>Small Business Economics (SBE) 1989-current (33 generated)</td>
<td>1.32</td>
<td>2 related article and 2 associated articles</td>
<td>Government and business coordination and SME performance, University-Industry collaborations in R&amp;D Commercialisation, Small Firms Dynamism</td>
</tr>
<tr>
<td>4.</td>
<td>The Journal of Small Business Management (JSBM) 1971 – current (4 generated)</td>
<td>0.99</td>
<td>4 related articles</td>
<td>Initial Public Offering, Information System and SMEs, Bank Loan Facilities to SMEs and Industrial Development Efforts of a Country</td>
</tr>
<tr>
<td>5.</td>
<td>Entrepreneurship and Regional Development (ERD) 1989-Current (14 generated)</td>
<td>0.84</td>
<td>2 Related articles and 2 associated articles</td>
<td>Islamic Financial Services Regulation and Small firms as temporary coalitions. Technology-oriented entrepreneurs</td>
</tr>
</tbody>
</table>

**Source: [http://www.scimagojr.com](http://www.scimagojr.com)

*Current: 16 November 2013*
APPENDIX B: SAMPLE OF FIELD NOTE

Date: 13 December 2010
Location: Banxar - Starbuck
Participant: (Redacted)
Company Name: (Redacted)

Entrepreneur Profile
- Studied Law at the UK, Leicester Uni
- Wanted to be a lawyer when he was kid
- Completed study and back to Nigeria
- Join a consultancy firm involved in government
- Experienced strategic planning, speech writing, government
- Proposed policy to the government
- Left previous job - why? - became entrepreneur
- Wanted to try something different

Rewarded accordingly!!
- Wanted to take the risk - not get／exposed
- Take challenge now is better - young
- Why tech-based? Different from Law!!
- Law then ventured into IT??
- IT is a good industry
- City move into "in one-based" state
- New inspiration
APPENDIX C: THE INTERVIEW GUIDE (FOR ENTREPRENEUR)

(Definition of Business Sustainability: The ability of a firm to be able to continue the same type of business over a long period of time)

<table>
<thead>
<tr>
<th>Section 1: Entrepreneur Profile</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Would you please tell me a bit about yourself (education, job experience)?</td>
</tr>
<tr>
<td>2. Before the formation of your current business, what did you do?</td>
</tr>
<tr>
<td>3. Why did you leave your previous job?</td>
</tr>
<tr>
<td>4. Why did you decide to form this company?</td>
</tr>
<tr>
<td>5. What made you want to enter the technology-based industry?</td>
</tr>
<tr>
<td>6. When you first started, was it difficult to enter and sustain the business?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Section 2: Business Background</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. Would you please provide me with a brief history of your business operations?</td>
</tr>
<tr>
<td>a) How many founder(s) were in the initial stage of your company formation?</td>
</tr>
<tr>
<td>b) How do you come up with ideas about products/services?</td>
</tr>
<tr>
<td>8. How long have you been involved in this current business?</td>
</tr>
<tr>
<td>9. How many employees do you have?</td>
</tr>
<tr>
<td>10. How many of them have a technical or science background?</td>
</tr>
<tr>
<td>11. How have you managed/sustained the performance of this firm in the past three years?</td>
</tr>
<tr>
<td>12. Do you have branches/offices nationwide? Worldwide?</td>
</tr>
<tr>
<td>13. In a year, how much money does your company invest in R&amp;D activities?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Section 3: Founder-specific Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>14. In sustaining your business operations, do you think that relevant business and technical skills are important?</td>
</tr>
<tr>
<td>If yes, what types of skills do you believe are important for you to have or develop in sustaining your business?</td>
</tr>
<tr>
<td>15. In sustaining your business operations, do you think that having solid working experience in the industry is important?</td>
</tr>
<tr>
<td>If yes, what types of experiences do you believe are important for you to have or develop in order to sustain your business?</td>
</tr>
<tr>
<td>How have your relevant experiences affected the way you sustain your business?</td>
</tr>
<tr>
<td>16. In sustaining your business operations, do you think that your formal education background is important?</td>
</tr>
<tr>
<td>If yes, how do you think your formal education background affects the way you sustain your business?</td>
</tr>
<tr>
<td>17. In sustaining your business operations, do you think that your industry-specific knowledge is important?</td>
</tr>
<tr>
<td>If yes, what types of knowledge do you believe are important for you to have or develop in sustaining your business?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Section 4: Firm-Specific Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>18. Does your company focus on developing new technology, specifically by conducting R&amp;D activities, in competing with other firms?</td>
</tr>
<tr>
<td>19. Do you consider patenting your products or services in order to help you to sustain your business?</td>
</tr>
<tr>
<td>20. Do you feel that having an encouraging entrepreneurial culture is crucial for sustaining your business?</td>
</tr>
<tr>
<td>If yes, how does your entrepreneurial culture help you to sustain business operations?</td>
</tr>
<tr>
<td>21. In comparison with your competitors in the industry, how do you position your company in terms of new product development?</td>
</tr>
<tr>
<td>22. Do you think that building a good company reputation is crucial for sustaining your</td>
</tr>
</tbody>
</table>
23. In sustaining your business operations, do you think that having strong support from your family is important?
   If yes, what type of support have you received from your family?
   In terms of financial support, did your family provide you with any financial assistance in starting your business?

24. From your experience, are business networks really important in sustaining your business?
   If yes, in what way do business networks assist your company to sustain business?

**Section 5: Government Infrastructure and Policies**

25. Are you aware of the services or assistance provided by the government to start up your business?
   If yes,
   - Has your company utilised the facilities and/or assistance offered by the government?
     - If yes,
       - To what extent has the support action from the government helped you in sustaining your business?
       - Do you believe that the amount you get from government financial assistance is sufficient for you to operate your business?
     - If no,
       - Would you consider seeking any forms of government assistance in sustaining your business operations in the future?
APPENDIX D: PLAIN LANGUAGE STATEMENT FOR FACE-TO-FACE INTERVIEWS

RMIT University

Umar Haiyat Abdul Kohar
School of Management
RMIT University
Level 13, 239 Bourke Street
Melbourne VIC 3000
Australia

Supervisors:
Adela J McMurray PhD
Research Supervisor, Associate Professor
School of Management,
RMIT University,
adelamcmurray@rmit.edu.au
Tel: +613 9925 5946

Konrad Peszynski PhD
Research Supervisor, Senior Lecturer
School of Business IT
RMIT University,
konrad.peszynski@rmit.edu.au
Tel: +613 9925 1564

INVITATION TO PARTICIPATE IN A RESEARCH PROJECT
PROJECT INFORMATION STATEMENT

Plain Language Statement of Interview

Project Title: Factors Influencing the Sustainability of Business amongst Malaysia New Technology-Based Small Firms.

Dear Participant,

You are invited to participate in a PhD research project being conducted through RMIT University, which will take approximately 45-60 minutes to complete. This information sheet describes the project in straightforward language, or ‘plain language’. Please read this sheet carefully and be confident that you understand its contents before deciding to participate. If you have any questions about the project, please ask one of the investigators identified above.

This research is being conducted by Umar Haiyat Abdul Kohar, a PhD student enrolled in the School of Management at RMIT University, Melbourne. The research is supervised by Associate Professor Adela McMurray, Assistant Dean of Research and Innovation, RMIT Business Research Office; and Dr. Konrad Peszynski, Senior Lecturer of the School of Business Information Technology, RMIT University. This research project has been approved by the RMIT Human Research Ethics Sub-Committee.

This study is designed to explore factors influencing the sustainability of business amongst technology-based entrepreneurs in Malaysia. This research will conduct at least twenty semi-structured interviews amongst government officers, academics and technology entrepreneurs. In the interviews, participants will be required to answer questions relating to perceptions of main factors influencing business sustainability amongst Malaysian New Technology-Based Small Firms.

You have been approached to participate in this research because you have been identified as having a commendable background and experience in Malaysian technology entrepreneurship. Approximately, five government officers, five academic and at least ten technology entrepreneurs will be also invited to participate in this research. The main data collection method for this research is semi-structured
interviews. The questions to be asked will focus on critical factors, which may help technology entrepreneurs in sustaining their business from the perspective of human capital factors and firm-specific resources. Responses will contribute to understanding the main factors influencing the capability of new technology-based small firms in sustaining business in Malaysia. The findings of this study will be disseminated in conferences and published in journals.

There are no perceived risks associated with participation in this research. If you are concerned about your responses or if you find participation in the project distressing, you should contact my supervisor as soon as possible. My supervisor will discuss your concerns with you confidentially and suggest appropriate follow-up, if necessary. You can examine the interview questions before deciding whether you want to participate. You will be provided with a Prescribed Consent Form, which I require you to sign before undertaking the interview. Participation in this research is entirely voluntary and anonymous; you may withdraw your participation and any unprocessed data concerning you at any time, without prejudice. There is no direct benefit to the participants as a result of their participation. However, I will be delighted to provide you with a copy of the research report upon request as soon as it is published.

Your privacy and confidentiality will be strictly maintained in such a manner that you will not be identified in the thesis report or any publication. Any information that you provide can be disclosed only if (1) it is to protect you or others from harm, (2) a court order is produced, or (3) you provide the researchers with written permission. Interview data will be only seen by my supervisor and examiners who will also protect you from any risks.

To ensure that the collected data is protected, the data will be retained for five years upon completion of the project after which time paper records will be shredded and placed in a security recycle bin and electronic data will be deleted/destroyed in a secure manner. All hard data will be kept in a locked filing cabinet and soft data in a password protected computer in the office of the investigator in the research lab at RMIT University. Data will be saved on the University network system where practicable (as the system provides a high level of manageable security and data integrity, can provide secure remote access, and is backed up on a regular basis). Only the researcher will have access to the data.

You have the right to withdraw their participation at any time, without prejudice. You have the right to have any unprocessed data withdrawn and destroyed, provided it can be reliably identified, and it does not increase the risk for the participant. Participants have also the right to have any questions, in relation to the project and their participation, answered at any time. The interview participants have the right to request that audio recordings be terminated at any stage during the interview.

If you have any queries regarding this project please contact me at +61 3 9925 1681 or +61 43220 9235 or email me at umarhaiyat.abdulkohar@rmit.edu.au; or the supervisors listed above.

Thank you very much for your contribution to this research.

Yours Sincerely,

Umar Haiyat Abdul Kohar
PhD Candidate
School of Management
RMIT University, Melbourne, Australia
APPENDIX E: PARTICIPANT PROFILE (AS AT JULY 2011)

<table>
<thead>
<tr>
<th>Participant</th>
<th>Age (Years)</th>
<th>Gender</th>
<th>Education Background</th>
<th>Previous Work Experience (Years)</th>
<th>History (Years in operations)</th>
<th>Number of Permanent Workers Employed (Technical Staff)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICT1</td>
<td>33</td>
<td>M</td>
<td>Bachelor of Electrical Engineering majoring in Power System (Hons)</td>
<td>7</td>
<td>3</td>
<td>7 (2)</td>
</tr>
<tr>
<td>ICT2</td>
<td>30</td>
<td>M</td>
<td>Bachelor of Computer Science + Master of IT Entrepreneurship</td>
<td>1</td>
<td>7</td>
<td>17 (13)</td>
</tr>
<tr>
<td>ICT3</td>
<td>28</td>
<td>M</td>
<td>Bachelor of International Business (Hons)</td>
<td>2.5</td>
<td>2</td>
<td>5 (3)</td>
</tr>
<tr>
<td>ICT4</td>
<td>29</td>
<td>M</td>
<td>Bachelor of Physic + Master of IT Entrepreneurship</td>
<td>1</td>
<td>3</td>
<td>3 (2 + Outsource)</td>
</tr>
<tr>
<td>ICT5</td>
<td>27</td>
<td>M</td>
<td>Bachelor of IT + Master IT</td>
<td>1</td>
<td>3</td>
<td>11 (9)</td>
</tr>
<tr>
<td>ICT6</td>
<td>28</td>
<td>M</td>
<td>Bachelor of IT (Database)</td>
<td>2</td>
<td>3</td>
<td>6 (3 + Outsource)</td>
</tr>
<tr>
<td>ICT7</td>
<td>37</td>
<td>M</td>
<td>Bachelor of IT + Master of IT Entrepreneurship</td>
<td>10</td>
<td>3</td>
<td>2 (2 + Outsource)</td>
</tr>
<tr>
<td>ICT8</td>
<td>29</td>
<td>M</td>
<td>Bachelor of Islamic Studies</td>
<td>3</td>
<td>4</td>
<td>12 (4)</td>
</tr>
<tr>
<td>ICT9</td>
<td>28</td>
<td>M</td>
<td>Bachelor of Civil Engineering (Hons)</td>
<td>9</td>
<td>2</td>
<td>3 (3)</td>
</tr>
<tr>
<td>ICT10</td>
<td>48</td>
<td>F</td>
<td>Bachelor of Computer Science (Hons)</td>
<td>18</td>
<td>4</td>
<td>9 (4)</td>
</tr>
<tr>
<td>ICT11</td>
<td>26</td>
<td>M</td>
<td>Bachelor of Engineering (Geomatic)</td>
<td>2</td>
<td>1</td>
<td>8 (7)</td>
</tr>
<tr>
<td>ICT12</td>
<td>35</td>
<td>F</td>
<td>Bachelor of Town Planning + Master IT Entrepreneurship</td>
<td>6</td>
<td>3</td>
<td>5 (4 + Outsource)</td>
</tr>
<tr>
<td>ICT13</td>
<td>31</td>
<td>M</td>
<td>Bachelor of Multimedia (Hons) Film and Animation</td>
<td>4</td>
<td>2</td>
<td>3 (3)</td>
</tr>
<tr>
<td>ICT14</td>
<td>26</td>
<td>M</td>
<td>Bachelor of Law (LLB)</td>
<td>2</td>
<td>1.5</td>
<td>1 (1)</td>
</tr>
<tr>
<td>ICT15</td>
<td>31</td>
<td>M</td>
<td>Bachelor of Technology Management (Hons.)</td>
<td>9</td>
<td>2</td>
<td>2 (2)</td>
</tr>
<tr>
<td>BIO1</td>
<td>30</td>
<td>M</td>
<td>Bachelor of IT</td>
<td>2</td>
<td>3</td>
<td>2 (2)</td>
</tr>
<tr>
<td>BIO2</td>
<td>26</td>
<td>M</td>
<td>Bachelor of Biotechnology</td>
<td>1.5</td>
<td>2</td>
<td>2 (Outsource)</td>
</tr>
<tr>
<td>BIO3</td>
<td>28</td>
<td>F</td>
<td>Bachelor of Science (BSc) Genetics and Molecular Biology</td>
<td>2</td>
<td>2.5</td>
<td>3 (1 + Outsource)</td>
</tr>
<tr>
<td>BIO4</td>
<td>54</td>
<td>F</td>
<td>Bachelor of Counselling + Certificate of Homeopathy</td>
<td>24</td>
<td>7</td>
<td>12 (5)</td>
</tr>
<tr>
<td>BIO5</td>
<td>43</td>
<td>M</td>
<td>Bachelor of Science (Agribusiness)</td>
<td>18</td>
<td>5</td>
<td>9 (4)</td>
</tr>
<tr>
<td>BIO6</td>
<td>34</td>
<td>M</td>
<td>Bachelor of Business Administration (BBA)</td>
<td>6</td>
<td>5</td>
<td>1 (Outsource)</td>
</tr>
<tr>
<td>OTH1</td>
<td>29</td>
<td>M</td>
<td>Bachelor of Mechanical Engineering</td>
<td>1</td>
<td>3</td>
<td>4 (3)</td>
</tr>
<tr>
<td>OTH2</td>
<td>42</td>
<td>M</td>
<td>Certificate of Civil Engineering</td>
<td>17</td>
<td>3</td>
<td>10 (3)</td>
</tr>
<tr>
<td>OTH3</td>
<td>43</td>
<td>F</td>
<td>Malaysian Certificate of Education (O-Level) (*A housewife before venturing into the business)</td>
<td>4</td>
<td>6</td>
<td>13 (3)</td>
</tr>
</tbody>
</table>
APPENDIX F: SNAPSHOT OF INTERVIEW TRANSCRIPT AND CODING FROM NVIVO

Note: For a full copy of an interview transcript, please contact the researcher
Ref: Ethics Appl. 1000069

Wednesday, October 21 2009

Umar Haiyat Abdul Kohar
Unit 3, 19-21 Argyle Place South
Carlton
Vic 3053

Dear Umar

I am pleased to advise that your application for ethics approval for a Research Project has been approved by the Chair of the Business College Human Ethics Advisory Network. Approval has been granted for the period from 19 October 2009 to 21 July 2012.

The RMIT Human Research Ethics Committee (HREC) requires the submission of Annual and Final reports. These reports should be forwarded to the Business College Human Ethics Advisory Network Secretary. Annual Reports are due in December for applications submitted prior to September the year concerned. I have enclosed a copy of the Annual/ Final report form for your convenience. Please note that this form also incorporates a request for extension of approval, if required.

Best wishes for your research.

Yours sincerely

[Signature]

Prue Lamont
Secretary
Business College Human Ethics Advisory Network

Encl.
APPENDIX H: ETHIC APPROVAL FROM THE ECONOMIC PLANNING UNIT (EPU), MALAYSIA

UNIT PERANCANG EKONOMI
Economic Planning Unit
JABATAN PERDANA MENTERI
Prime Minister’s Department
BLOK B5 & B6
PUSAT PENTADBIRAN KERAJAAN PERSEKUTUAN
62502 PUTRAJAYA
MALAYSIA

Raj. Tuan:
Your Ref.:

Raj. Komi: UPE: 40/200/19/2652
Our Ref.:

Tarikh: 13 Oktober 2010
Date:

Umar Haji Yat Bin Abdul Kohar
No. 2, Jalan Padi Huma 12,
Bandar Baru Uda,
81200 Johor Bahru
Email: umarhaji@yahoo.com

APPLICATION TO CONDUCT RESEARCH IN MALAYSIA

With reference to your application, I am pleased to inform you that your application to conduct research in Malaysia has been approved by the Research Promotion and Co-Ordination Committee, Economic Planning Unit, Prime Minister’s Department. The details of the approval are as follows:

Researcher’s name: UMAR HAIYAT BIN ABDUL KOHAR

Passport No. / I. C No: 830719-01-6445
Nationality: MALAYSIA

Title of Research: “Factors Influencing the Sustainability of Business amongst Malaysian Bumiputera New Technology-Based Small Firms”

Period of Research Approved: 4 YEARS

2. Please collect your Research Pass in person from the Economic Planning Unit, Prime Minister’s Department, Parcel B, Level 4 Block B5, Federal Government Administrative Centre, 62502 Putrajaya, Malaysia and bring along two (2) passport size photographs.

3. Please take note that the study should avoid sensitive issues pertaining to local values and norms as well as political elements while undertaking your research project in Malaysia. You have to adhere to the conditions stated by the code of conduct for foreign researchers. You are also required to comply with the rules and regulations
stipulated from time to time by the agencies with which you have dealings in the conduct of your research.

4. I would like to draw your attention to the undertaking signed by you that you will submit without cost to the Economic Planning Unit the following documents:

a) A brief summary of your research findings on completion of your research and before you leave Malaysia; and

b) Three (3) copies of your final dissertation/publication.

5. Lastly, please submit a copy of your preliminary and final report directly to the State Government where you carried out your research. Thank you.

Yours sincerely,

(MUNIRAH BT. ABD MANAN)
For Director General,
Economic Planning Unit.
E-mail: munirah@epu.gov.my
Tel: 88725281/88725272
Fax: 88883961

ATTENTION

This letter is only to inform you the status of your application and cannot be used as a research pass.

Cc:

Pengarah
Unit Perancang Ekonomi Negeri Sabah
Tingkat 8 & 6, Blok B, Wisma MUIS
Beg Berkunci No. 2041
88999 Kota Kinabalu
Sabah
# APPENDIX J: SUMMARY OF MAIN FINDINGS

<table>
<thead>
<tr>
<th>Main Themes</th>
<th>Subthemes</th>
<th>Important Findings</th>
<th>Literature referred in earlier chapters / Further Literature Consulted</th>
</tr>
</thead>
</table>
| Founder Attributes   | *Entrepreneurial Personalities   | • The desire to seek and exploit business opportunities emerged as the most cited entrepreneurial personalities by the entrepreneurs-participants.  
• The self-spiritual strength personality emerged as the second most cited personality in which participants, concerned about a spiritual faith in regard to the connection with the God, would influence their actions in sustaining a business.  
(Khan 1986; Schwartz & Malach-Pines 2007; Brandstätter 2011; Mills & Pawson 2012) / (Tracey 2012; Audretsch et al. 2013) |                                                                                  |
|                      |                                 |                                                                                   |                                                                          |
| Entrepreneurial      | Motivations                      | • Economic issues did not emerge as the main reason the Bumiputera technology entrepreneurs ventured into a business  
• Bumiputera technology entrepreneurs who ventured into a business not only wanted to challenge themselves, but also they intended to prove that Bumiputera could be as successful as other non-Bumiputera entrepreneurs.  
• Few Bumiputera technology entrepreneurs have shown that becoming opportunistic entrepreneurs could also help their society through the invention of new products which meet the societal needs and wants.  
• The desire to start a business at a young age emerged as one entrepreneurial motivating factor amongst Bumiputera.  
(Schumpeter 1936; Naffziger et al. 1994; Mallon & Cohen 2001; Shinnar & Young 2008; Townsend et al. 2010; Carsrud & Brännback 2011; Farmer et al. 2011) / (Hessels et al. 2008; Robichaud et al. 2010; Jayawarna et al. 2013) |                                                                                  |
| Founder’s Human      | Formal Educational Background    | • A good formal education may provide early exposure to industry, especially in terms of entrepreneurial values and relevant skills gained, and may lead individuals to choose entrepreneurship as their career.  
• The possession of a good formal educational background is not an ultimate factor that could determine the sustainability of Bumiputera technology-based business.  
(Backes-Gellner & Werner 2007; Dickson et al. 2008; Sonobe et al. 2011; Volery et al. 2013) / (Burke et al. 2008) |                                                                                  |
| Capital              | Prior Work Experience            | • Prior work experience could assist the Bumiputera entrepreneurs to leverage their business networks  
• Experienced Bumiputera entrepreneurs were more likely to obtain credit facilities as they could exploit a broader human capital and social capital that they had developed during prior work experience.  
(Davidsson & Honig 2003; Mueller 2006; Manolova et al. 2007) / (Kotha & George 2012; Robson et al. 2012) |                                                                                  |
|                      | Relevant Skills                  | • Bumiputera technology entrepreneurs perceived that having relevant skills were important towards the creation and development of a firm’s new product and technology.  
(Bozeman et al. 2001; Kakati 2003; Unger et al. 2011) / (Ganotakis 2012) |                                                                                  |
<table>
<thead>
<tr>
<th>Main Themes</th>
<th>Subthemes</th>
<th>Important Findings</th>
<th>Literature referred in earlier chapters / Further Literature Consulted</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Newly subthemes emerged</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Knowledge</strong></td>
<td></td>
<td>• The participants believe that possessing soft skills are important to sustain their new technology ventures rather than their technical skills. This is due to their perceived needs in dealing with business stakeholders who require more soft skills such as negotiation and decision making competencies.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The idiosyncratic level of knowledge possessed by entrepreneurs would influence the capability of the Bumiputera NTBSFs to sustain its business operations.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The entrepreneurial knowledge of the Bumiputera technology entrepreneurs might be enhanced through two main ways: implementing internal meetings and discussions and exploiting of available social networks.</td>
<td></td>
</tr>
<tr>
<td><strong>Founder’s Social Capital</strong></td>
<td>Family Business Background and Support</td>
<td>• Bumiputera entrepreneurs’ social networks was the most cited extrinsic motivating factor in which they the entrepreneurs would be influenced by the existence of a role model and the advisory support of the role model</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Support given by the family members is important to assist the Bumiputera NTBSFs to operate and run a business either morally or financially</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The finding further unearthed the situation faced by non-family business background entrepreneurs in venturing into a business (e.g. the challenges faced to convince their family members on the entrepreneurial intention and their ability to transform that discouragement into a business challenge).</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The issue of work-life balance that highlighted the aspect of balancing an entrepreneur’s commitment between operating their businesses and managing family</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The cultural aspects of Bumiputera society played a significant role towards the Bumiputera women entrepreneurs, especially in terms of their roles as a wife and a mother in a family.</td>
<td></td>
</tr>
<tr>
<td><strong>Friend Support</strong></td>
<td></td>
<td>• The individual’s entrepreneurial intentions will be influenced by their entrepreneurial friends due to socialisation activities.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Friend support could also be viewed in terms of the creation of business collaborations between the firms and their friends’ firms as they have built a significance level of trust.</td>
<td></td>
</tr>
<tr>
<td>*** Surrounding Life Environment**</td>
<td></td>
<td>• Bumiputera firms which have a strong connection with politicians have better access to business resources and opportunities, particularly through the</td>
<td></td>
</tr>
</tbody>
</table>

- Baptista et al. 2013; Stuetzer, Obschonka & Schmitt-Rodermund 2013
- Polanyi 1966; Nonaka 1994; Omerzel & Antončič 2008; West & Noel 2009
- Granovetter 1973; Anna et al. 2000; Burke et al. 2008; Gudmunson et al. 2009
- Walker et al. 2008; Eddleston & Powell 2012; Forson 2013
- Coleman 1988; Giannetti & Simonov 2009
- Bhagavatula et al. 2010; Kuhn & Galloway 2010
- Facio 2006; Naguib & Smucker 2009; Loo 2012
<table>
<thead>
<tr>
<th>Main Themes</th>
<th>Subthemes (*)Newly subthemes emerged</th>
<th>Important Findings (Corroborate Current Literature / Extension of the Current Literature / Contradict Current Literature)</th>
<th>Literature referred in earlier chapters / Further Literature Consulted</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Firm’s Social Capital</strong></td>
<td>Business Networking</td>
<td>• The limited resources and knowledge faced by the Bumiputera firms in operating the business led them to collaborate with other firms and to seek assistance from the government</td>
<td>(Lechner &amp; Dowling 2003; Street &amp; Ann-Frances 2007; Hormiga et al. 2011)</td>
</tr>
<tr>
<td></td>
<td>Business Reputation</td>
<td>• Bumiputera firms’ lack of business records and limited resources led to a difficulty for them to convince their potential funders or business partners.</td>
<td>(Hall 1992) / (Chollet et al. 2013; Kwon &amp; Rupp 2013)</td>
</tr>
<tr>
<td></td>
<td>*Intra-Firm Relationship</td>
<td>• Participants believed that, in order to retain employees, the firms should also build good relationships with their employees, especially by giving them appropriate rewards.</td>
<td>(Brinckmann et al. 2011; Campbell et al. 2012)</td>
</tr>
<tr>
<td><strong>Firm’s Capabilities and Intangible Assets</strong></td>
<td>R&amp;D and Technology Capabilities</td>
<td>• A Bumiputera firm’s internal R&amp;D activities are the main source of innovation, nevertheless, several participants have chosen a combination of in-house R&amp;D activities and external R&amp;D, especially via strategic alliances with other parties.</td>
<td>(Pisano 1990; Rammer et al. 2009; Kang &amp; Park 2012b)</td>
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<td>Organisational Innovation Culture</td>
<td>• The innovative nature of Bumiputera firms would lead to the creation of new product development and can be an important aspect that enhances the firm’s performance.</td>
<td>(Schumpeter 1936; Marvel &amp; Lumpkin 2007; Bock et al. 2012)</td>
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<td>Intellectual Property Rights (IPRs)</td>
<td>• The level of IP Management amongst Bumiputera technology is less encouraging, though it has been perceived important by most participants.</td>
<td>(Ostergard Jr 2000; Hanel 2006; Piotrowska 2008; Rassenfosse 2012)</td>
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<td>*Business Models Adopted</td>
<td>• The ability of the Bumiputera firm to attract potential customers and to retain its existing customers via a good customer service is important to ensure long-term profits in sustaining the business.</td>
<td>(Berry &amp; Taggart 1998; Zahra &amp; Bogner 2000)</td>
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<td><strong>Business Stakeholder Support and Assitances</strong></td>
<td>The Role of Government Agencies</td>
<td>• The implementation of entrepreneurship development amongst Bumiputera is seen as a strategic initiative by the government to enhance the socioeconomic condition of the Bumiputera and to create a more balanced society in multiracial Malaysia.</td>
<td>(Gilbert et al. 2004; Minniti 2008; Koski &amp; Pajarinen 2012)</td>
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<tr>
<td>Main Themes</td>
<td>Subthemes (*Newly subthemes emerged)</td>
<td>Important Findings (Corroborate Current Literature / Extension of the Current Literature / Contradict Current Literature)</td>
<td>Literature referred in earlier chapters / Further Literature Consulted</td>
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<td>• Following the Liberalisation Policy in 2009, the provision of soft loans by the government to the Bumiputera firms, instead of financial grants, was seen as an effective way for government agencies to be responsible with the financial capital provided.</td>
<td>(Bjerregaard 2009; Rasmussen &amp; Borch 2010; Wright et al. 2012)</td>
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<td>The Roles of Academics</td>
<td>• The universities have revamped their delivery of knowledge transmission by offering more entrepreneurship-related courses or training to their students, especially through the establishment of entrepreneurship centres or units.</td>
<td>(Lerner 2010; Gomez 2012) / (Mason &amp; Brown 2013; Román et al. 2013)</td>
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<td>The Roles of Policy makers</td>
<td>• The political ideology of the policy makers showed a dissimilar approach to implement efforts and strategies in the development of Bumiputera entrepreneurship.</td>
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