

**Factors influencing the sustained growth of high-tech SMEs in South Korea:
Perspectives of owner-managers, policymakers, and employees**

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DECLARATION

This thesis is submitted as the result of the author's own research. It has been carried out by the author and has not been previously submitted to any other universities and institutes to award qualifications.

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Date:

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ABSTRACT

Studies of young and high-growth firms have discussed their critical roles in job creation and national economic growth over several decades. The reasons for high growth have been widely analysed but there was a lack of consideration for the persistence of high-growth firms. When high-growth firms do achieve continuous growth from inception through to maturity, it is likely to lead to job stability and more stable economic growth. This study examines the key factors influencing the continuous growth of high-tech small- and medium- sized enterprises (SMEs) in South Korea, from perspectives of the key stakeholders of owner-managers, policymakers and employees.

Previous studies about high-growth firms were relatively focused on high-tech industries and thus, the South Korean information and communications technology (ICT) industry was selected for analysis to determine the factors influencing sustained growth of high-tech SMEs. Specific high-tech industries can be affected by factors, such as national enterprise policy, industrial contexts and infrastructure. Also, these factors can be affected by owner-managers, policymakers and employees. Therefore, this study combines interview techniques with quantitative surveys and statistical analysis to identify various factors through the investigation of these three groups of stakeholders. Factors were categorised into internal factors relevant to the interrelationships within the organisation, external factors relevant to business environments, policy factors and corporate governance structure.

Although participants presented various perspectives, they have some common opinions on significant factors enabling the sustained growth of high-tech SMEs. Owner-manager's competence, employees' contributions, and a collaborative organisational culture have been discussed as essential internal factors. Research and development (R&D) actions with financing capability and market analysis have been highlighted as critical external factors. Flexibility and continuity of public policies also affected the growth of high-tech SMEs positively. Stewardship forms of governance and behaviour acted as a critical stimulator of organisational performance. As a result, high-tech SMEs can achieve sustained growth when each stakeholder contributes as an actor to enhance these factors.

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Abbreviations

CAGR	Compound Annual Growth Rate
CEOs	Chief Executive Officers
EM	Employee
GUEP	General University Ethics Panel
HW	Hardware
HGFs	High Growth Firms
ICT	Information and Communications Technology
KODIT	Korea credit guaranteed fund
KOTEC	Korea Technology Finance Corporation
KRW	Korea Won
LTD	Long-Term debt
MSS	Ministry of Startups and SMEs
OM	Owner-Manager
PEST	Policy, Economy, Social, and Technology
PM	Policymaker
PP	Policy-practitioner
R&D	Research And Development
RQ	Research Question
RA	Research Answer
SE	Sustained Employment growth
SG	Sustained Growth
SW	Software
SMEs	Small- and Medium- sized Enterprises
STD	Short-Term debt
TIPA	Technology and Information Promotion Agency
TMT	Top Management Team
VC	Venture Capitals
VOIP	Voice Over Internet Protocol

CHAPTER 1 INTRODUCTION

1.1 Research context

High growth small- and medium-sized enterprises (SMEs) are regarded as the key players in job creation around the world (Schreyer 2000; Mason and Brown 2013; Coad et al. 2014; Birch and Medoff 2018; Rannikko et al. 2019). In particular, young high growth firms contribute more to job creation than older firms (Henrekson and Johansson 2010; Haltiwanger et al. 2013; Decker et al. 2014; Anyadike-Danes et al. 2015). Despite many studies, there is no clear consensus on the reasons for high growth (Coad et al. 2014). Also, many studies have discussed the lack of persistence in high growth firms (Coad and Hözl 2010; Bishop et al. 2009; Hözl 2014). That is, if high-growth firms do not achieve continuous growth from inception through to maturity, this is unlikely to lead to job stability and stable economic growth.

Given the different characteristics of industries in different countries, it is necessary to identify the ones with a high potential ability to sustain continuous growth before seeking to foster core sectors. Indeed, some policymakers focus on high-tech industries with a high level of research and development (R&D) as a means of fostering innovation and growth (Schneider and Veugelers 2010; Coad et al. 2014) even though high growth firms (HGFs) exist in most industries (Henrekson and Johansson 2010). Also, the contribution of high-tech firms to job creation and economic growth in several countries has been discussed (Riche et al. 1983; Hall et al. 1987; Butchart 1987; Storey and Tether 1998; Kim and Oh 2002; Ganotakis 2012; South Korean government 2018a; OECD/Eurostat 2019). That is, each country has different industrial advantages, and, thus, they can have different views on HGFs and high-tech firms.

In consequence, this thesis focuses on South Korean Information and Communications Technology (ICT) industry as the representative high-tech industrial sector in South Korea. In particular, high-tech SMEs in this thesis are defined as the specific certification-based SMEs in South Korea, and thus, this thesis adopted the requirement criteria, such as INNOBIZ and VENTURE SMEs, which are certified by the South Korean government (See section 2.2.2 and 3.2). In these high-tech SMEs of South Korea, this thesis narrowed

down the sample group into software- and electronics-related SMEs to reflect the recent industrial trends across the world.

The growth of specific industries can be affected by various factors such as national enterprise policy, industrial contexts and infrastructure. In particular, given the impact of various stakeholders to these factors, it is necessary to consider the various factors enabling the continuous growth of high-tech SMEs from various stakeholders' perspectives.

To sum up, many studies have discussed the contribution of high-growth firms to job creation over several decades, and policymakers also have similar interests to researchers with regard to the role of high-growth firms for political and economic development reasons. In particular, fostering high-tech SMEs is one of the main interests of policymakers for job creation, and the persistence of growth can be a key enabler of increasing job opportunities. Given the different characteristics and contributions of each type of stakeholder to the growth of high-tech SMEs, this thesis considers their various perspectives on the factors influencing the sustained growth of high-tech SMEs, focusing on South Korea. This chapter introduces the research objective, the research questions, the methodology and the outline of the thesis.

1.2 Research objective and research questions

Although many studies have discussed firm growth and its contributions to job creation, and economy growth, there has been a lack of discussion and investigation on the critical factors influencing the sustained or the persistent growth of high-tech SMEs. In particular, few previous studies have compared the various perspectives of relevant stakeholders. Therefore, this thesis has a *main research objective* of exploring the key factors influencing the continuous growth of high-tech SMEs, as described below. As a consequence, this study contributes to the growth of SMEs, the improvement of relevant policies, and an understanding of employees' contributions from the investigation of relevant stakeholders' views.

Given the contribution of the high-tech industry to job creation across the world, this study focused on high-tech SMEs and, thus, continuous growth high-tech SMEs were

contacted in South Korea. Therefore, this study focused on SMEs in the ICT sector and relevant electronics manufacturers in South Korea, which is one of the most dynamic ICT leading countries (OECD 2017a). When it comes to the specific period for defining continuous growth patterns, this study begins by focusing on SMEs which have demonstrated sustained growth over a considerable period (taken to be at least seven years of employment growth with a higher CAGR¹ than the industrial average CAGR, as discussed in section 2.2.3) to find a way of enabling the prolonged growth of high-tech SMEs as a way to supply stable job opportunities.

Concerning the research components, despite the access limitation to owner-managers (Dimitratos et al. 2010), previous studies have confirmed the critical roles of owner-managers' experiences (Hulbert et al. 2013) and their decision-making (Hsu et al. 2013; Lobonțiu and Lobonțiu 2014) to the growth of companies. Also, some governments have considered the contributions of entrepreneurs to job creation and national economies (Michael and Pearce 2009) and, thus, they have supported SMEs with various policies, such as taxation (Venter and De Clercq 2007), procurement (Flynn and Davis 2016) and incubators (Mas-Verdú et al. 2015). As a result, policymakers can be stakeholders in high-tech SMEs and their growth. Employees are another core part of a company, and many studies have discussed the job retention of employees (Chaminade 2007; Samuel and Chipunza 2009), motivation (Ramlall 2004), and commitment (Swales 2002).

Furthermore, organisational performance should be able to rely on the interdependent relationship between members, and thus, corporate governance structure needs to be considered as one of the factors influencing organisational growth, as previous studies have outlined (Ching et al. 2006; Pham et al. 2020). In Chapter 2, relevant definitions and studies are reviewed in detail to formulate research questions. Factors influencing sustained growth are distinguished by internal (interrelationships within the organisation), external (business environments) and policy factors, referencing previous studies (Lumpkin and Dess 1996; Barringer et al. 2005; Nicholls-Nixon 2005). Also, the

¹ Compound Annual Growth Rate (CAGR) (The consecutive annual growth rate between two different years.) = $\left(\sqrt[n]{\frac{\text{Value at the present}}{\text{Value at the past}}} - 1 \right) \times 100$. n: number of years. CAGR has been used in many economics and business management articles to measure the consecutive annual growth rate between two different years (e.g. Ghosh 2002; Barringer et al. 2005; Molla 2016).

corporate governance structure has been discussed as having an impact on organisational performance.

As a result, to achieve the main research objective of the thesis, the *main research question* is:

What factors underpin the sustained growth of high-tech SMEs in South Korea?

This study also poses four *subsidiary research questions* to critically explore and compare the various perspectives of stakeholders:

RQ1. What do owner-managers, policymakers, and employees consider to be the major internal factors influencing the sustained growth of high-tech SMEs?

RQ2. What do owner-managers, policymakers and employees consider to be the major external factors influencing the sustained growth of high-tech SMEs?

RQ3. What do owner-managers and policymakers consider the impact of policy implementation and intervention to be on the sustained growth of high-tech SMEs?

RQ4. How do perceptions of the influence of corporate governance and culture on organisational performance vary between owner-managers, policymakers and employees?

To sum up, this study investigates three perspectives and a range of internal and external policy and governance issues concerning the factors influencing the growth of companies overall.

1.3 Research methodology

This study explores the perspectives of stakeholders, specifically owner-managers, policymakers and employees, on various influential factors enabling the achievement of sustained growth of high-tech SMEs. This aspect of study can be described by the type of study topic in Table 1.1.

Table 1.1. Study topics of the three participant groups

Study	Study participants	Study topic
1	Owner-managers	explore participants' perspectives of the factors influencing the sustained growth of their companies
2	Policymakers	
3	Employees	investigate participants' attitudes toward their contributions to the growth of organisations.

Source: Author

The current study had the benefit of using prior working contacts (based on the author's prior job in the South Korean government) to access owner-managers (who were also the founders) to gain their perspectives on their experiences of sustained growth. As a result, face-to-face semi-structured interviews were carried out with seventeen owner-managers. Also, eighteen policymakers working in government organisations with responsibilities for supporting SMEs were interviewed with electronic-based methods, such as e-mail, text messages, and Voice over Internet Protocol (VOIP) phone. Both the data of owner-managers and policymakers were analysed through a thematic analysis approach.

Given the critical importance of employees to the growth of companies, this study surveyed employees of the same 17 companies as the interviewed owner-managers in order to identify their attitudes towards growth and the various business factors influencing the sustained growth of their companies. The population of the survey was 1,491 employees of seventeen companies, and ultimately, 366 employees participated in the survey for over a month. The data were analysed using an ordered logit regression analysis.

Regarding the theoretical basis, this study discusses the impact of corporate governance theories on the growth of companies, using the perspectives of three groups of stakeholders. The study tested two corporate governance theories to analyse the influence of governance structures affecting members' performances: principal-agency theory and stewardship theory.

Overall, this study identifies factors that influence the sustained growth of high-tech SMEs. It adopts a mixed-methods approach, taking on the views of critical realists to

analyse the various perspectives of stakeholders influencing the business growth of high-tech SMEs. At the same time, the study tests how governance structure influences the performance of the organisation.

1.4 Outline of the thesis

This study is about the factors influencing the sustained growth of high-tech SMEs. Therefore, Chapter 2 reviews various relevant definitions and previous studies, categorising them according to internal, external and policy-relevant factors. In terms of theoretical considerations, Chapter 2 reviews corporate governance theories and examines the extent to which corporate governance structure affects stakeholders and their performance.

Chapter 3 introduces the industrial context of South Korea, which is the research area of this thesis. Along with many other countries, South Korea strongly supports high-tech SMEs through various policy schemes. Chapter 3 reflects on this policy support in South Korea and the status of the ICT industry.

Chapter 4 introduces the mixed-methods methodological approach used to analyse both qualitative and quantitative data. Also, the chapter illustrates the chosen methods of data collection and introduces four research-sub questions to explore three objectives.

Chapter 5 discusses the findings of semi-structured face-to-face interviews with owner-managers. It compares interview groups, dividing owner-managers into groups **SG** (sustained growth high-tech SMEs) and owner-managers **SE** (continuous employment growth high-tech SMEs of sustained growth high-tech SMEs), as defined in section 2.2.3.

Chapter 6 discusses the results of the semi-structured online-based interviews with South Korean policymakers working in the area of high-tech SME support. Policymakers are divided into two groups depending on their present positions and obligations: policymakers at the headquarters office and policy practitioners in regional offices. Both groups have a commonality, but there are a few different opinions.

Chapter 7 analyses an online survey of employee attitudes toward various business factors according to their individual characteristics. Respondents were selected for this survey through information provided by the owner-managers. Four hypotheses were tested to discuss employees' behaviours and attitudes to the growth of their companies.

Chapter 8 discusses and contrasts the findings of the three studies and compares them with each other and with previous research. This chapter identifies the factors which support the sustained growth of high-tech SMEs. This contributes to the development of new knowledge and supports some previous studies.

Chapter 9 presents the conclusions to the thesis and the individual research questions and discusses the research limitations, contributions and implications, and future research.

Finally, the references and appendices give an overview of the sample companies, the interview guide, the survey questionnaires and the online survey codebook.

CHAPTER 2 LITERATURE REVIEW

2.1 Introduction

The growth of SMEs has become one of the major areas of research for business studies in recent decades. Many commentators have been studying the facilitating of entrepreneurship to stimulate firm creation and grow SMEs. Indeed, studies have examined the diverse factors influencing the growth of SMEs. Concerning the influential factors relating to the business of SMEs, Lumpkin and Dess (1996) identified business impact factors as being internally relevant to organisational structure while external factors were related to industrial environments. Barringer et al. (2005) categorised the following as founder characteristics: firm attributes, business practices and human resource management (HRM). Likewise, Nicholls-Nixon (2005) mentioned business factors as including a firm's personnel, business model, organisational structure, financial management and CEO changes. Concerning the firms' personnel, young innovative companies have achieved faster growth than established high-growth firms (Czarnitzki and Delanote 2013). From previous studies, Demir et al. (2017) found five drivers of high growth: human capital, strategy, human resource management, innovation, and capabilities. Also, the gender diversity of board members and a high proportion of independent directors is negatively associated with growth intentions in high-growth firms in Norway (Rasmussen et al. 2018).

This thesis reviews the various business factors and organisational structures cited in previous studies, classifying them as internal factors, external factors, policy influencers and governance structures. Also, it is necessary to define various relevant terms to review these factors. As a consequence, this chapter begins with the definitions which are relevant to the thesis and explores what factors influence the sustained growth of high-tech SMEs (distinguished by internal (interrelationships within the organisation), external (business environments) and policy factors), and how governance structures affect the sustained growth of high-tech SMEs.

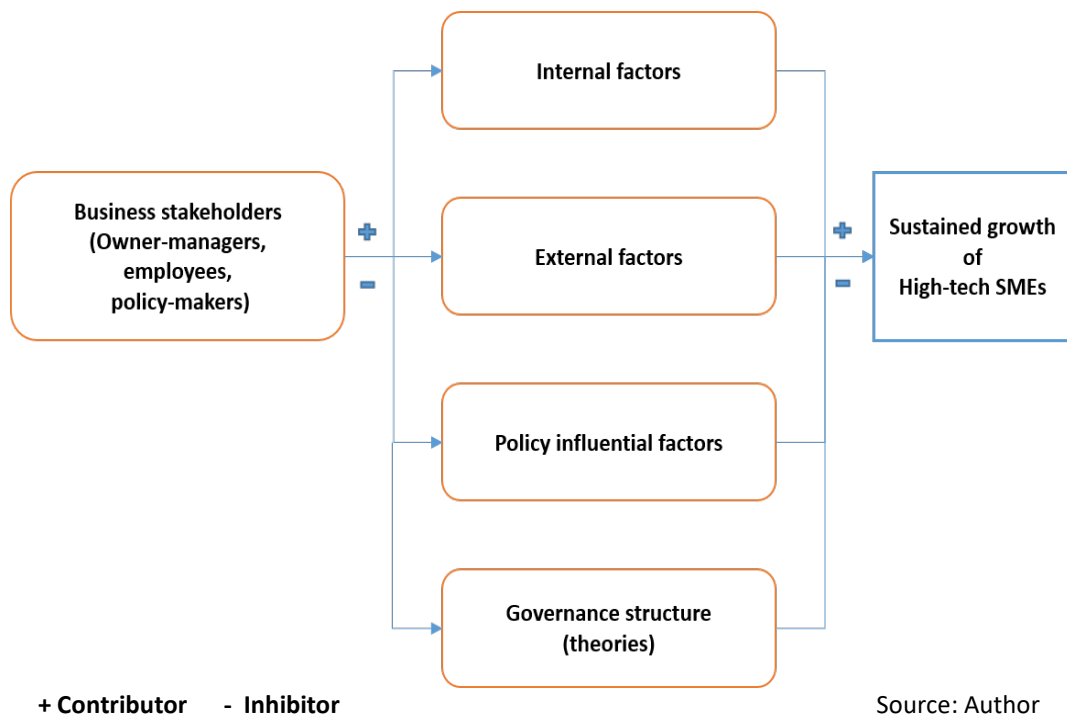


Figure 2.1. The research framework

2.2 Definitions

2.2.1 Small- and medium-sized enterprises (SMEs)

Studies on small and medium-sized enterprises (SMEs) have discussed various subjects to elicit the factors that facilitate business activities. Studies have looked at many definitions of the SME to identify their research focus. Indeed, SMEs have many definitions across the world, depending on their different construction, policy purposes and economic conditions (Berisha and Pula 2015). The Bolton Report (1971) was one of the first attempts to define SMEs in the UK. This report approached the issue in two different ways: determination according to quantitative and to qualitative measures. Quantitative measurements are based on employee numbers, annual turnover and balance sheets. Quantitative measures are mainly used to evaluate the firm size, which does not consider the internal organisational structures such as ownership and legal business purposes. Qualitative measurements are described as the legal role of owners, independence and the power wielded by principal decision-makers from the outside

(Bolton 1971 as cited in Stokes and Wilson 2006). The structure of a firm can be quite complicated, and the business types also vary depending on the profit or non-profit motives of the organisation. When identification of SMEs is required for the purpose of policy support, the legal position on the identification of commercial business is an important criterion because government policies tend to be aimed at supporting private commercial firms, not non-profit firms. Therefore, it is necessary to consider quantitative definitions together with qualitative criteria to define SMEs accurately. But most stakeholders who are relevant to SMEs use quantitative descriptions to define them (Berisha and Pula 2015) because researchers tend to classify study samples according to strict, clear measures, such as the number of employees and the amount of sales.

The most common criterion for distinguishing SMEs is the number of employees (Hatten 2015). However, Curran and Blackburn (2001) argue that the SME definition based on the number of employees could be incoherent due to the presence of part-time workers and temporary workers. Although the OECD (2005) suggests a standard definition to identify SMEs, many countries do not follow this definition due to their various different economic conditions. For example, developing countries have weak currency values and low levels of industrial diversity compared to developed countries (Gibson and Van der Vaart 2008). When developing countries adopt the OECD definition of SMEs, their identification in those countries does not reflect their economic conditions precisely. Sharing this point of view, Gibson and Van der Vaart (2008) shed light on the economic differences which can affect the definition of SMEs between countries. They proposed a formula to define SMEs according to their proportion of relative annual turnover reflecting 'the mean per capita gross national income at purchasing power parity' of each country.

In the case of Taiwan (Lee and Jioe 2017), the definition of SMEs for the manufacturing, construction and mining sectors set the threshold of annual turnover at US\$2.42 million and the remainder of industry at the threshold US\$3.03 million. Additionally, the Taiwan government applies different definitions of SMEs to support them under the guidance of government agencies: fewer than 200 employees for manufacturing, construction, mining and quarrying companies; fewer than 100 employees for the remainder of

industry. In the European Union, the SME definition takes into account three criteria: the number of staff of fewer than 250 people, an annual turnover of under €50 million, and an annual balance total of less than €43 million (Verheugen 2005), whereas the US defines SMEs as between 100 and 1,500 employees depending on the particular industry (US SBA 2019). Canada (OECD 2017b) uses the term SME to refer to businesses with fewer than 500 employees. The following table 2.1 illustrates some definitions of SMEs around the world.

Table 2.1. Definitions of SMEs around the world

	Micro	Small	Medium	SME
EU ²	1-9	10-49	50-249	1-249
Canada	0-9	10-49	50-499	0-499
United States	1-9	10-99	100-499	1-499
Australia	0-9	10-49	50-199	0-199
Japan	4-9	10-49	50-249	1-249
South Korea ³	Total assets (up to KRW 500 billion) and sales revenue (under KRW 150 billion) within the last three years			

(Source: Author, adapted from OECD 2010, OECD 2017b, South Korean government 2018a)

The definition of SMEs in South Korea focuses on the two measures of the number of employees and average annual revenue within the last three years. However, this has been shown to have a negative impact on the growth of SMEs because they intentionally stayed within the threshold set in order to continue receiving diverse policy support aimed only at SMEs (Kim 2017). The South Korean government changed the definition of SMEs to reduce this distortion in 2015⁴ (South Korean government 2018a).

² Small and medium-sized enterprises (SMEs) were defined by the EU Commission in 2005. The EU definition matches the criterion of the number of employees and one of either the annual turnover at less than or equal to €50 million or total assets at less than or equal to €43 million.

³ Post-2016 definition of SMEs in South Korea

⁴ South Korean government used criteria of total assets (up to Korea Won (KRW) 500 billion [US\$463 million]) and sales ranging from KRW 40 billion (US\$37 million) to KRW 150 billion (US\$139 million) within the last three years.

The definition of SMEs reflects different industrial characteristics as well as political considerations in order to allocate capital fairly and improve the efficiency of national economies. The definitions of SMEs consider the diverse contexts of business environments in different countries and industries, as mentioned in previous studies. This study looks at the high-tech industry in South Korea to consider its industrial context and environment (see Section 3.3). In line with this, the definition of high-tech SMEs is reviewed in the next section.

2.2.2 High-tech SMEs

In general, high-tech SMEs are perceived as firms which have concentrated on the activities of research and development (R&D). R&D can be classified according to three types, basic R&D, applied R&D, and commercial R&D, in terms of its product level (Kim and Oh 2002). On the other hand, R&D activities show mainly two types of outcomes: the development of new products and the production process; and the improvement of the technological awareness of employees (Ortega-Argilés et al. 2009). R&D activities are directly associated with the identification of high-tech firms.

Riche et al. (1983) considered the level of products firms develop to define high-tech firms (HTFs). Given the importance of R&D expenditure and engineers, Maidique and Hayes (1984) defined HTFs as firms which spend above a threshold of income on research and development. Likewise, Butchart (1987) defined high-technology industries as having the characteristic of having a big budget for R&D and employing a greater number of scientists and engineers than other sectors. In particular, Hall et al. (1987) defined HTFs as firms which employ relatively large numbers of engineers and scientists, and having a relatively high R&D expenditure. In this definition, the authors focused on specific seven electronics-related industries, including software firms and hardware firms, via examining trends in the high-tech sector of the UK. Although these definitions have different criteria, they pointed to the importance of research and development as a critical factor.

Similarly to high-tech SMEs, previous studies have examined the contribution of new technology-based firms (NTBFs) which operate in a high-tech industry to the national economy (Storey and Tether 1998; Ganotakis 2012). Little (1977 cited in Storey and

Tether 1998) defined new technology-based firms (NTBFs) as having the characteristics of being a firm that is less than 25 years old; a business based on potential invention or having substantial technological risks; established by a group of individuals; and established for the purpose of exploiting an innovation or technological innovation. On the other hand, Shearman and Burrell (1988) defined NTBFs as newly independent companies developing new industries. Little's definition could include a wide range of firms as NTBFs while the definition by Shearman and Burrell restricts NTBFs to a narrow condition focused on developing new industries. To reflect both characteristics in a definition of NTBFs, Ganotakis (2012) defined them as firms which are independently owned, less than 25 years old, and operating in a high-tech or knowledge-intensive industry. Löfsten (2016) used the firm's patents, copyrights, licenses, and education level to define new technology-based firms in his study. Although the terms of both NTBFs and HTFs differ, the focus is the same in terms of technology innovation. In the definitions of HTFs and NTBFs, the way of distinguishing technology companies has been considered differently but the commonality has been the importance of R&D actions.

Some criteria have been used to identify these technology firms. The OECD (2005) used the R&D investment rate per sales volume of each company *per se* to clarify high-tech firms. This definition has also been used as one of the basic concepts distinguishing the differences between high-tech SMEs and non-high-tech SMEs. Hirsch-Kreinsen (2008) classified industries with R&D expenditure of more than 5% of turnover as 'high-technology' sectors. Czarnitzki and Thorwarth (2012) distinguished between the high-tech sector and the low-tech sector with an OECD classification based on NACE⁵ code information. Hence, sectors such as electronics, machines and equipment, computers and pharmaceuticals are identified as being high-tech ones. However, the concepts of high-tech SMEs can differ from country to country because of diverse industrial contexts. For example, Wang and Rafiq (2014) applied rather complicated criteria to identify high-tech firms in the UK and China: firms in operation for at least three years; firms employing at least 50 people; firms having introduced at least one new product in the

⁵ The NACE (Nomenclature des Activités Économiques dans la Communauté Européenne) codes are the European industry standard classification system similar in function to Standard Industry classification (SIC)

past three years; firms in the high tech industry producing technologically sophisticated products and services such as electronics, software, pharmaceutical and ICT. Previous studies have applied the criteria of R&D activities and the ratio of R&D to distinguish high-tech firms. Although the aspect of each definition differs, the perspectives on the contribution of technology to improving business performance show congruence.

On the other hand, high-tech firms tend to be related to technology innovation closely. The OECD developed the Oslo Manual to evaluate the level of innovation in 1992 via a survey of innovation in OECD countries (OECD/Eurostat 2019). The South Korean government used the Oslo Manual in order to identify technology-oriented SMEs. The high-tech industries of South Korea are mainly involved in manufacturing and information technology. These industries have shown sustained growth and the South Korean government supports the fostering of relevant industries in order to increase job opportunities (see Section 3.5 Policy support for high-tech SMEs in South Korea in Chapter 3).

The first version of the Oslo Manual was published in 1992 to provide a standardised framework for measuring and collecting firm-level data on technological products and process innovation in manufacturing industries (OECD/Eurostat 2019). The Korean government used the Oslo Manual to define technology-oriented high-tech firms and called for 'INNOBIZ (Innovation+Business)' (South Korean government 2018b). At the same time, since 1998, the Korean government has been supporting venture SMEs (including less than three-year-old SMEs) which require a certain level of R&D investment or external funding from accelerators or having been able to get a technology-guaranteed loan. These SMEs are mainly technology-based companies that are over three years.

Both schemes assess and support SMEs based on technology and innovation from start-ups to maturity. Indeed, some high-level technology SMEs do not need these certifications for their business and some company owners think it is not necessary to expand their business. That is, neither type of SME reflects all cases of high-tech SMEs in South Korea. Nevertheless, this study took both *INNOBIZ* and *VENTURE* as a way of explaining high-tech SMEs in this thesis in order to describe specific SME growth based

on technology innovation in response to long-term business changes from start-ups to mature firms.

Many examined classifications of high-tech industries include diverse sectors, and they commonly mention both the software industry (i.e. the ICT industry) and the hardware industry (i.e. electronics manufacturing). In the case of Korea, Korean high-tech SMEs are also mainly involved in both sectors. That is, both the ICT industry and the electronics-based industry are perceived as high-tech sectors in many countries. Although previous studies regarding the definition of high-tech SMEs have diverse research purposes, they attempted to identify what the high-tech SMEs are in order to induce economic growth through innovation in these companies. In other words, many researchers and policymakers consider the importance of high-tech firms for economic growth as well as job creation. Therefore, considering the contributions of high-tech SMEs to the national economy is required to find proper ways of fostering important industries. At the same time, what the growth of firms means and how to achieve SME growth need to be considered. In the next section, the growth of firms, which is significantly associated with high-tech sectors, is discussed.

2.2.3 Growth of firms

High growth firms

Studies about high growth firms (HGFs) have been focused on by scholars and policymakers recently because HGFs have made a remarkable contribution to generating employment. Research on HGFs, including ‘gazelles’, which are HGFs of less than five years old, has been conducted by many authors (Birch 1987; Schreyer 2000; Delmar et al. 2003; Davidsson and Delmar 2006; Mason and Brown 2013; Coad et al. 2014; Mason et al. 2015; Mogos et al. 2015; Brown and Mawson 2016; Demir et al. 2017; Birch and Medoff 2018; Pereira and Temouri 2018).

Previous studies have used different criteria to identify high growth firms. Indeed, high-growth firms are defined as companies as having sales growth of at least 20% to 25% for three to five consecutive years (Fischer and Reuber 2003; Nicholls-Nixon 2005). Moreno and Casillas (2007) defined high-growth SMEs as extraordinary growth compared to the average growth of other firms in the same industry. Autio et al. (2000)

and Halabisky et al. (2006) used a different definition for HGFs, describing them as having obtained at least 50% employment growth during each of three consecutive financial years. Each definition has a different point of view about what aspects are more important for identifying the characteristics of high-growth firms. The OECD definition of HGFs, which many studies have adopted, defines them as enterprises with an average annualised growth greater than 20% per annum over a three-year period, and with ten or more employees at the beginning of the observation period (Eurostat-OECD 2007, p. 61). Therefore, growth is measured by the number of employees and turnover. When the number of employees is used to identify high-growth firms, it cannot be considered as the contribution to revenue growth, whereas, when revenue growth is applied to define high-growth firms, firms having high employment growth compared to revenue growth at the beginning of their business dealings are overlooked. In addition, Mogos et al. (2015) identified and measured high growth firms according to revenue, employees, profit and productivity.

On the other hand, Coad et al. (2014) have contended that different definitions of HGFs can be used for the purpose of delineating them. Where the goal of high growth is to reduce unemployment, absolute employment growth is used as a measure to define HGFs. If the economic policy has a target of pursuing long-run economic growth, the relative growth of productivity is applied to identify HGFs. However, the public sector tends to use a definition of HGFs that is readily understandable in order to implement policy schemes underpinning objective standards. Hence, although there are different views of what constitute high-growth firms, the OECD definition has been becoming popular to identify them (Hölzl 2014; Bravo-Biosca 2010). The OECD definition focuses on the criterion of three years of a consecutive high annual growth rate of 20% compared to other companies with the condition that the company employs at least ten people. Although many small firms employ less than ten people, they have the characteristic of a high-growth pattern.

However, the OECD definition overlooks the contribution of those small firms (Daunfeldt et al. 2014; Halvarsson 2013). In particular, Daunfeldt et al. (2015) discuss how the definition of Eurostat-OECD for HGFs does not fit with all cases in different countries because they have different growth patterns and economic backgrounds. In

particular, they found that 95% of firms and 40% of employment in Sweden were excluded from the OECD definition of HGFs. Furthermore, small firms tend to be overlapped with the characteristics of young firms (See Section 3.3 Growth patterns of High-tech SMEs in Korea in Chapter 3). In the study by Haltiwanger et al. (2013), young firms also contribute to job creation. In this point of view, the stringent OECD definition of high-growth firms needs to be considered to find complementary ways to reflect the contribution of small and young firms to job creation as well as economic growth. Indeed, young HGFs are significantly associated with job creation in the UK (Anyadike-Danes et al. 2015). In particular, Halabisky et al. (2006) have shown evidence that HGFs and employment growth are significantly interrelated.

In addition, there is a lot of evidence supporting the contribution of HGFs to job creation (Acs and Mueller 2008; Henrekson and Johansson 2010; Mason et al. 2015). But HGFs have difficulties in maintaining a persistently high rate of employment growth after experiencing fast growth at some points (Hölzl 2014). Furthermore, young HGFs contribute to job creation more than older HGFs relatively (Henrekson and Johansson, 2010). That is to say, high growth firms have an unusual growth pattern, but the persistence of high growth is rare (Coad et al. 2014). Bishop et al. (2009) reported that half of the UK's high-growth firms are ten years old or less. That is, high-growth firms of less than ten years old account for over 50% of such firms in the UK. Conversely, if high-growth firms have a persistent growth pattern, the economic growth and job creation would be more effective than fostering only young new HGFs.

In other words, new high-growth firms could create new jobs rapidly, while sustainable older high-growth firms contribute to job stability. Given these characteristics of each type of high-growth firm, fostering both types would be the way of contributing to job creation while reducing job losses. Therefore, these high-growth firms have different aspects of growth, and thus, various studies on SME growth to understand the mechanism of business growth need to be considered. Consequently, the next section reviews various aspects of the growth of SMEs.

Phases of growth

The pattern of firm growth has different structures according to the business model used, the industrial environment, and the owners' intentions to grow it. Therefore, many studies have discussed the aspect of firm growth in different views. Previous studies have classified the business stages in different ways to explore and identify the growth patterns of firms. Lewis and Churchill (1983), for example, identified a business according to five stages (existence, survival, success, take-off, and resource maturity). Examining the perspective of the life cycle of the growth stages, Miller and Friesen (1984) classified the life cycle of SMEs according to four stages: birth, growth, maturity, revival, and a declining or stagnating stage. In line with this, Masurel and Van Montfort (2006) discussed the life cycle of small professional service firms and they identified the stages as the growth stage, the maturity stage, and the declining stage according to the impacts of clients and business activities.

In a study of the growth stages for technology-based new ventures, Kazanjian (1988) explained the dominant issues firms have faced during their growth stages as conception and development, commercialisation, growth, and stability. In focusing on business development, Hanks et al. (1994) identified a business according to four stages: start-up, expansion, maturity, and diversification. The business life cycle comprises components from the business set up to the stage of maturity or decline.

Staged and lifecycle approaches define a business according to a time dimension. Previous studies have discussed the stages of firm growth from its coming into existence to its maturity and decline. However, a business can have the two aspects of growth and stagnation in any period of its life. Given that condition, Bessant et al. (2005) identified six key capabilities linked with achieving a tipping point for growth: strategy, managing people, formal systems, operational improvements, market entry, and obtaining finance. Unlike this approach, Brown and Mawson (2013) identified three main types of growth trigger points, which are 'endogenous', 'exogenous', and 'co-determined', including a basic dichotomy of internal efforts and external business factors. This categorisation describes the trigger points of high-growth firms via adopting internal efforts, reactions, adapting to external changes, and expansion of the business by

investment and network. Mueller et al. (2012) distinguished growth stages as business functions, which are human resources, employee relations, marketing, sales, administration, and exchange of information and opinions. These categorisations are closer to functional identification than the features of growth by business lifetime. That is, this classification focuses on specific growth features at critical points, while business growth has a significant time within the decision-making process. In other words, functional identification considers interrelated actions between business factors internally and externally. Although the analysis of functional classification may help in understanding the influences of business factors, it is difficult to see what factors contribute more to overcoming the risks in each growth stage.

Each identification representing the growth phases of firms has different viewpoints and diverse weighted values for the same business factors. Therefore, these characteristics of functional growth stage and lifetime growth stage need to be considered at the same time in order to reflect when the company has difficulty managing their business, what factors contribute to making business turning points, and who plays an important role in the growth of firms. These factors interplay so that one factor cannot be considered in isolation. It is difficult for the characteristics of one specific stage to reflect all the characteristics of the other stages.

The analysis and study for the growth stages are based on the existence of a sustainable business model and show how companies have different growth patterns according to their business routes. This means that business growth patterns can be formed by the sustainability of the business model. The sustainable business makes a point of declining business delays and supporting job creation as well as the national economy. Many studies have discussed sustainable business and how SMEs can achieve sustained growth. In the next section, these issues are reviewed.

Sustainable and sustained growth

Many studies have discussed various types of growth as mentioned above. Some scholars have mentioned continuous growth companies as sustainable or sustained companies. Indeed, Ahmed and McQuaid (2005) argued that different forms of entrepreneurship, such as new firms, SMEs and owner-managers are a significant

source of innovation enabling sustainable development. Also, Mogos et al. (2015, p. 5) state: 'sustainable growth... is the goal of achieving long-term high growth with low downside'. Fonseka et al. (2012) identified how sustainable growth is positively associated with the financial security of being able to expand business persistently. Schaltegger et al. (2016, p. 268) defined sustainable entrepreneurship as 'a sustainability mission-driven process of solving environmental and social problems of unsustainability by means of the exploration and exploitation of market opportunities created with innovative business models'. While the aspect of sustainable growth has various attributes, its object is to achieve a sustainable business.

When previous studies examined the growth of companies, they identified the period of growth as well as the attributes of growth. Therefore, it is necessary to define the attributes of the persistent or sustainable growth of a company. Garnsey et al. (2006) studied the growth path of new firms regarding patterns of survival, continuity of growth, turning points and cumulative growth, and they identified samples of new firms in three different ways: firms of over ten years in the UK, firms of over eight years firms in Germany and firms that were at least five years old in the Netherlands. Van Praag and Versloot (2007) defined mature companies as firms which are older than seven years. Davila et al. (2010) defined start-up business growth as growth within the first ten years of a company's life. These studies have discussed various time periods for describing long-term growth and they tend to distinguish between the start-up companies and mature companies by various contexts. From this point of view, the time span for describing sustainable and sustained growth firms has to be considered according to the industrial and regional contexts.

In terms of how one should measure sustainable growth, Shepherd and Wiklund (2009) found that the most frequently used indicator for the sustainable growth of SMEs was sales growth and the favoured period was from one year to five years. In addition, they used six consecutive year periods to investigate firm growth in their study, dividing companies into two groups of under seven-year-old firms and twenty-five-year-old firms. Pickernell et al. (2013) mentioned that sustained growth is a sales growth rate of more than 5% in the previous year and then intention to continue to grow in the next two years, based on the Annual Small Business Survey 2007/2008 (Williams and Cowling

2009). In a business, sales growth can result in not only profitable growth but also declining revenue growth. Therefore, it can be difficult to determine the aspect of the growth except for the profits. Indeed, growing firms with high profits tend to be shown at a lower growth rate than companies with low profits (Davidsson et al. 2009). Also, some companies tend to try to achieve profitable growth as a way of sharing profits with shareholders, and then these firms can be structured to support improving existed capabilities, as well as exploring opportunities (Raisch 2008). In other words, profits and revenue are the complementary relationships for achieving the sustainable growth of the firm.

However, it is difficult to discern the exact growth of high-tech companies because they tend to concentrate on developing products without expanding sales and revenues for a long time (Davidsson et al. 2005). Likewise, Gilbert et al. (2006) argued that biotechnology firms could not be compared according to sales growth because this type of company spends a considerable amount of income on developing their products over several years. As a result, they suggested that the more relevant measure for high-tech industries was employment growth. Indeed, Littunen and Virtanen (2006) used employment growth to identify the growth of such ventures. In the study by Capelleras and Rabetino (2008) on the determinants of new firm growth, they used employment growth as a measurement to validate the growth of companies. Also, Stam et al. (2008) pointed out that employment growth is a measure used to describe the growth of companies in many empirical studies as human resources is the most comparable indicator.

The sustained growth firms and companies who want to achieve sustainable business could have different standards for their business success. However, many studies not only defined various aspects to clarify those firms but also discussed the process of achieving sustainable business from existing sustained growth firms. Indeed, Ghosh et al. (2005) used a period of five consecutive years to compare the business performance and the persistent revenue growth of firms. Schaltegger et al. (2016) suggested three processes, which are variation, selection and retention, and four routes, which are growth, replication, merger, and acquisition, and mimicry to achieve a sustainable business model.

Although the period and the measurement to define sustained and sustainable growth in firms are essential to identify the threshold of business success, there are advantages as well as disadvantages to the study. When it comes to the short-term in the growth studies, different results are shown by the time span researchers choose to use according to the different growth paths of firms. In particular, if the period of growth is restricted to a couple of years at the start-up stage, the results could overlook the aspect of growth at the stage of maturity. On the other hand, studies of long-term growth patterns represent the overall features of firm growth across the life cycles of firms. Previous studies have frequently focused on identifying the stage of start-up (or entrepreneurial stage) and the stage of maturity. That is why a study on changes in long-term business growth is necessary.

In many studies, the terms 'sustained' and 'sustainable' have been used to explain the different aspects of persistent business growth without discriminating between them. Likewise, measures of growth patterns are also various. Many studies have focused on measuring revenue growth (Ghosh et al. 2005; Shepherd and Wiklund 2009; Pickernell et al. 2013). Employment growth is a suitable measurement to identify the growth of high-tech SMEs because they tend to focus on R&D activities rather than revenue growth (Davidsson et al. 2005; Gilbert et al. 2006). Despite the different perspectives on both measurements, a long-period time scale has been commonly used to define the sustained or sustainable growth of SMEs (Davidsson et al. 2005; Shepherd and Wiklund 2009; Pickernell et al. 2013; Mogos et al. 2015). Therefore, long-term persistent business is one of the critical standards for defining the characteristics of the sustained growth of SMEs.

Based on the aforementioned studies in this section, there are three considered characteristics for defining the sustained growth of high-tech SMEs: a more extended time period than the HGF definition, the attributes of the growth stages from the entrepreneurial stage to the mature firm stage reflecting the growth patterns of sustained SMEs, and the classification reflecting the Korean entrepreneurial stage, which is less than seven years (South Korean government 2018a). Given these contexts, the seven-year scale has been adopted to define sustained growth since the foundation year of the firm. In terms of the measurement of sustained growth, an analysis of

employment growth illustrates the growth pattern of high-tech SMEs investing in R&D activities without having revenue growth for several years (Gilbert et al. 2006).

The specified period for defining the sustained growth of SMEs is determined by six consecutive years because it is necessary to consider the case of seven-year-old companies. This study used CAGR (Compound Annual Growth Rate) for the measurement of employment growth to describe the growth pattern reflecting various business changes during a specified period of time (Kefale and Chinnan 2012). Cunningham and Higgs (2009) used CAGR to compare the employment growth of creative industries such as ICT and the overall employment growth in the UK over a twenty-five year period. Likewise, Corry et al. (2011) drew on OECD data using CAGR to examine the UK's relative economic performance since 1997, focusing on growth, productivity and jobs.

Hall et al. (1987) found that high-tech industries (e.g. pharmaceuticals, chemicals and electronic components) contributed to job growth in the US. However, there was no sign of jobs growing in the UK even though these high-tech industries had shown the growth in output and productivity between 1971 and 1978. Also, Breheny and McQuaid (1987) discussed the geographical characteristics influencing the job creation and output growth of high-tech industries. That is, high-tech industries have different aspects according to the industrial rationale and specific regional characteristics, and therefore it is necessary to consider the industrial contexts of each country to show the differences. In this point of view, the study of high-tech SMEs in this thesis is focused on two sectors, reflecting previous studies work on high-tech firms (Chapter 2.2.2) and the Korean industrial context (Chapter 3): one is manufacturing industries related to electronics, communication, medical, precision, optical, and watches (hereafter high-tech manufacturers); the other is software industries as they relate to software development and provision (hereafter high-tech software firms). In the South Korean national labour statistics of 2018, compound annual growth rate (CAGR) for employment in high-tech SMEs increased by 0.64% for high-tech manufacturers and 1.46% for high-tech software firms between 2010 and 2016 (South Korean government 2018e).

Therefore, the *definition of sustained growth high-tech SMEs*, including high-tech manufacturers and high-tech software firms, used in this dissertation is: SMEs having a relatively higher CAGR of employment growth than the industrial average CAGR for the past six years (this thesis uses the study period between 2010 and 2016). Firms showing employment growth of a relatively higher CAGR during the study period are coded **SG** (sustained growth firm, but without six years of continuous employment growth). If the sample companies exhibit sustained employment growth for six consecutive years in the study period, this type of company is identified by the code **SE** (sustained employment growth firms). These two groups are identified by their continuity of employment growth. From this identification, this study is able to confirm whether owner-managers experiencing the continuity of employment growth have exceptional factors influencing the sustained growth of high-tech SMEs or not.

To investigate the attributes of sustained growth of the company, it is necessary to consider not only the criteria defining sustained growth but also the factors influencing such sustained growth. Indeed, the sustained growth of SMEs has been achieved by interacting between various industrial environments and the managerial choices of managers (O’Gorman 2001). Kor (2003) asserted that a founder’s participation in decision making and its experiences positively affect the sustained growth of companies. Likewise, Davila et al. (2010) pointed out that sustainable growth of high-growth start-ups is significantly associated with the professional management style of the owner-manager. In line with this, the relationship between the owner-manager and business stakeholders, including employees, is a determinant of sustainable business (Eccles et al. 2012). In other words, various business factors come from external business environments as well as internal relationships. Therefore, the literature review regarding the factors influencing the sustained growth of companies can be analysed according to four main categories: internal factors, external factors, policy support, and corporate governance structure.

2.3 Internal factors for the sustained growth of high-tech SMEs

Entrepreneurs in start-ups have to consider markets, employees, business items and a strategic approach in their business. Therefore, the main business factors relevant to

business planning, employees, external funding and partnerships with stakeholders are perceived as significant elements for business success (Hyder and Lussier 2016). Furthermore, essential entrepreneurial actions for the growth of firms are leadership, business decision making, HRM practices, strategy, finance, marketing and sustainable competitiveness (Alvarez and Barney 2007). These factors mainly have relative influences with each other in business and can be identified as internal factors. This section identifies the main factors in terms of their contributions to the organisational level of technology-based firms. Hence, manager groups, organisational structure based on employees' contribution and technology innovation are the main factors discussed in this section.

2.3.1 Owner-managers and CEOs

Entrepreneurs can be identified as owner-managers, founders or CEOs depending on their status relating to ownership. Owner-managers are perceived as entrepreneurs with the ability to create a new business venture, and their entrepreneurial activity can be motivated by gaps between the possibility and reality (Armstrong and Hird 2009). Also, owner-managers in small companies tend to have the power to make decisions in sales and marketing, and production (Lobonțiu and Lobonțiu 2014). That is, entrepreneurs in small firms can be referred to as being the spider at the centre of the web (Burns 2016).

When it comes to the roles of CEOs, CEO leadership affects collaboration, open communication and the promotion of cooperation activities among members (Carmeli et al. 2011a) and CEOs lead the organisational environment, which can learn from failures and engage in strategic decision-making (Carmeli et al. 2012). In other words, CEOs' roles in the organisation account for a wide range of decision-making processes, including managing conflicts among members (Edmondson and Smith 2006). From a business viewpoint, the CEO's main responsibility is making profits and growing the business. Therefore, the choosing of a CEO by board members is also a crucial process for business success because a CEO plays a significant role in the decision-making process within the board (Hsu et al. 2013). Furthermore, CEOs with relevant industrial knowledge have useful information on business opportunities and risks, the competitive

environment and regulation (Kor 2003). However, CEOs may not have equity in their company, and hence they may need to get a final decision from shareholders when the company needs to decide critical business issues. This limitation can cause the performance of a firm to decline. In the study by Donaldson and Davis (1991), when a CEO is a shareholder as well as a board member, firm performance and profits increased. In particular, Ang et al. (2000) found evidence that agency cost decreased when a CEO worked as a shareholder rather than a non-shareholder. Their study also shows that the managerial structure of SMEs was more efficient with sole ownership than multiple shareholders. That is, a CEO who does not have ownership tends to make an effort to create business profits within their responsibilities rather than a CEO as a shareholder. This feature is described as the difference between a professional CEO working as an agent and an owner-CEO (or owner-manager) working as a steward.

Owner-managers who are founders and CEOs in organisations will not be changed except if companies are merged with others. When firms are changed by acquisition, organisational ownership and shareholders are changed and, hence, this can result in an unstable business environment (Carree and Thurik 2008). That is why the business styles of companies are decided by owner-managers. Poutziouris (2003) classified owner-managers into four different types: growth firms, survival-oriented firms, export-oriented firms, and control-oriented firms. He analysed the characteristics of each group, and found younger and smaller firms were likely to be growth firms and older established firms were likely to be survival-oriented firms. Owner-managers' intentions on growth lead to finding opportunities for their business success rather than others, depending on their experiences (Hulbert et al. 2013). Particularly, at the beginning stage of a business, owner-managers are faced with a critical decision-making process and various business risks while they are developing products and entering the market (Armstrong and Hird 2009). Indeed, owner-managers must make decisions on how to grow and where to grow their business (Gilbert et al. 2006). Owner-managers' characters can be formed by experiences, education and their networks. Their diverse choices can influence the firm's performance positively or negatively. Entrepreneurs' relevant experiences and practical knowledge can stimulate the growth of their business (Baum et al. 2011). However, Sam et al. (2012) found that relevant knowledge and

experiences of the CEO did not affect the decision-making around adopting an account software platform. Furthermore, CEOs with a science-related degree and on a longer tenure tended to spend more money on R&D actions than others (Barker and Mueller 2002).

On the other hand, De Cremer (2006) argued that autocratic leadership results in unintended effects on the between members because the leader tends to make decisions without having the time to decide on the business strategies for employees. Kor (2003) found that the effect of founders' participation in top management teams and managers' experiences helped to achieve a sustained entrepreneurial growth even though there were some influences weakening the growth rate according to their industry-specific managerial experiences or team-specific experiences. That is, sharing the experiences between founders and top management team managers could be significantly associated with opportunities to achieve the sustained growth of firms. Furthermore, founders' experiences can support diverse industry-specific information, which is needed to stimulate strategic decisions to the external factors. Therefore, founders' experiences and knowledge can be one of the elements which contribute to the growth of SMEs as many firms do not have founders any more in their organisations.

To sum up, owner-managers, founders and CEOs significantly affect organisational growth, both negatively and positively. However, their decisions are usually carried out by employees. That is, organisational growth can be achieved through a collaboration between managers and employees. Therefore, the next section will discuss the contribution of employees and how organisational culture influences their attitudes.

2.3.2 Organisational members and the organisational culture

The operation of the organisation is directed largely by the owner-managers' (or management team's) decisions and implemented by members. Owner-managers adapt various management skills to improve employees' performance. In particular, owner-managers' management efforts to train employees contribute to the growth of SMEs (Krasnigi and Mustafa 2016). That is to say, human experiences and motivation are associated with the growth of venture (Littunen and Virtanen 2006). As a result, owner-managers tend to rely on some key members in the growth stages of their business. In

particular, there are the two main groups of the entrepreneurial team and the management team at the beginning of a business venture (Vyakarnam and Handelberg 2005). The roles of these team members are to establish the company and to manage the organisation. Entrepreneurial teams are 'two or more individuals who have a significant financial interest and participate actively in the development of the enterprise' (Cooney 2005, p. 229). Knockaert et al. (2011) reported that entrepreneurial team members affect the development of the team and the organisation. Therefore, a well-functioning entrepreneurial team is a key factor for positive development and high performance in ventures (Breugst et al. 2015). Furthermore, the contribution of the entrepreneurial team plays an important role in firm creation, and their initial decisions are directly related to the firm's subsequent development (Beckman and Burton 2008). That is, the formation, composition and functioning of entrepreneurial teams act as critical factors for enabling the set-up of the successful business (Schjoedt et al. 2013). Indeed, at the beginning stage of a business, the performance of the entrepreneurial team is one of the most critical factors. After the entrepreneurial team sets up the business, the business organisation can expand to the sub-groups and the main members can be members of the top management team (TMT). That is why the top management team is important for a successful business.

The founding team and top management team have different contributions. The diversity of the founding team is effective for reducing the probability of becoming a public company while a TMT drawn from various backgrounds positively influence the transition to being a public company (Beckman et al. 2007). TMT members' performances are affected by their industry experience, work experience, knowledge of marketing and technology, TMT size, the team's joint experience, and the team's networks (Vyakarnam and Handelberg 2005). TMT members have developed specific actions with diverse perceptions and judgments (Hambrick 2007). That is, TMT members' commitments operate as a driver for stimulating firm performance. Carmeli et al. (2011b) found that empowering leadership among TMT members caused business performance to improve. Also, the learning from failures in business work acted as a mediator to improve team trust and strategic decision-making (Carmeli et al. 2012).

Therefore, the trust between owner-managers and TMT members is an important factor for firm performance.

When companies set up, owner-managers tend to make a decision with TMT members. However, when the business is mature, company growth is affected by many employees' contributions. In particular, owner-managers are like to retain skilful manager groups and employees in order to manage the organisation efficiently. However, owner-managers of small firms have a difficulty retaining skilful people due to low-capital skills and the low level of wages compared to larger firms (Troske 1999). In the view of employees, their long-term career prospects are the most important condition rather than participation in decision-making, responsibility and marketability (Moy and Lee 2002). One can say that the gap between owner-managers and employees in terms of the issue of job retention has been derived from their different interests and sense of value. Admittedly, SME owners cannot guarantee a high wage or a stable business environment to their employees more than larger firms. Job retention has the opposite meaning of employee turnover. That is why studying the reasons for employee turnover can be useful for improving job retention.

Hom et al. (2012) divided employee turnover into four subtypes: enthusiastic leavers and stayers, and reluctant leavers and stayers. Therefore, employers need to consider employees' characteristics in order to manage and retain them. Some employees make an effort with an organisation through self-motivation while some people work only within their responsibility. Indeed, Dobre (2013) found that empowerment of subordinates motivated employees' contributions, and thus organisational performance improved. In consequence, the research on job retention pays attention to considering influential factors of job retention around a diverse range of views. Hausknecht et al. (2008) discussed influential factors for job retention, citing the following: extrinsic rewards, job satisfaction, lack of alternatives, location, organisational commitment and organisational prestige. That is, employers have to consider diverse alternatives to retain people besides financial rewards (Mitchell et al. 2001). In line with this, some owner-managers have endeavoured to motivate employees' contributions and attempted to form an organisational identity to improve employees' pride in their companies. Indeed, organisational identification (OID) is

related to employee job satisfaction and, hence, it has positive effects on employees' willingness to stay on in an organisation (Edwards and Peccei 2010).

Despite owner-managers' various efforts, the issue of job retention is still a significant one affecting business performance. In the study by Samuel and Chipunza (2009), motivational variables for retaining skilful people were validated and stated as follows: training and development, challenging and interesting work, freedom for innovative thinking and job security. In other words, job retention aims to acquire business competitiveness by maintaining and fostering high-skilled workers. On the other hand, the cost of retaining employees can affect the business as a burden, as well as providing opportunities for growth. Nevertheless, Schjoedt et al. (2013) asserted that organisational membership is necessary for business success. Indeed, Wolf (2013) found that employee integration affects the organisational changes necessary to achieve a sustainable business performance.

These organisational changes can be related to organisational culture. Indeed, previous studies have discussed how corporate culture can affect the aspect of achieving organisational goals and directing employees' behaviour to the organisation (Choe 1993; Deshpandé and Farley 1999). Also, Brown (1998) highlighted how a strong organisational culture can be linked with the performance of the company. That is, organisational culture can be an element for driving the achievement of job satisfaction and organisational goals (Roodt et al. 2002). Also, Rashid et al. (2003) discussed organisational culture as a factor influencing the commitment of employees to business performance. Although organisational culture tends to affect business performance, it is also affected by other factors. Indeed, Lee and Yu (2004) found that the organisational culture was correlated with the return on assets in manufacturing companies. Employee job performance and the productivity of companies are affected by corporate culture (Ojo 2009). In other words, organisational culture is significantly associated with the behavioural patterns of employees, and, thus, the impact of organisational culture can result in positives and negatives. As a result, the owner-manager has to consider ways of fostering positive factors in organisational culture. Sokro (2012) has discussed how motivation is the key component of organisational culture and also found a significant relationship between employee motivation and business performance. Also, a

collaborative organisational culture positively affects employees' knowledge sharing in the organisation (Ahmed et al. 2016) and is positively associated with business performance (Wallace and Mello 2015). That is, the organisational culture is significantly associated with the performance of the company. Organisation-enhancing business performance is referred to as the inclusive organisation or the collaborative organisation. Shore et al. (2018) explored the inclusive workplace, and they discussed how diversity in the workplace could create challenges and opportunities in business. They explained the characteristics of an inclusive organisation according to six themes based on the literature: 'feeling safe'; 'involvement in the workgroup'; 'feeling respected and valued'; 'influence on decision-making', 'authenticity'; and 'recognising, honouring, and advancing of diversity'.

Therefore, making positive organisational culture is essential to encouraging employees' contribution to the growth and sustainability of firms. In the end, changing organisational culture in a positive direction can influence organisational productivity, and the improvement of productivity is related to various innovations in the organisation. Indeed, organisational innovation also affects the enhancing of productivity, margins, market leadership and the working environment (Laforet 2013). Of these different innovations, the innovation of SMEs tends to focus on expanding sales turnover, which is linked to product innovation and service innovation (Oke 2007). In terms of innovation which is closely relevant to the growth of SMEs, studies on technology innovation are discussed in the next section.

2.3.3 Technology innovation

The results of technology innovation are significantly associated with the growth or the failure companies depending on the age of SMEs (Coad et al. 2016). Successful innovation causes firm performance to improve while unsuccessful innovation leads to businesses failing. That is, technology innovation accounts for the critical part of the overall business. Oke (2007) underlined the importance of service innovation and product innovation according to different industrial contexts. Also, Rhee et al. (2010) asserted that sustainable competitive advantages can result from innovation efforts. Ismail et al. (2011) discussed how innovation is one of the key factors for achieving long-

term growth in manufacturing companies. In particular, in terms of the outcomes of R&D activity for innovation, Czarnitzki and Hussinger (2004) discussed the result of getting patents through R&D activities.

Thompson (1965, p. 36) defined innovation as ‘the generation, acceptance, and implementation of new ideas, processes, products, or services’. According to Rogers (1995), innovation is an idea, practice or material artefact perceived as new by the relevant unit of adoption. Amabile et al. (1996) have defined innovation as the successful implementation of creative ideas within an organisation. Previous perspectives on innovation relate to product innovation. However, innovation has implications across a wide range of meanings depending on resources, capabilities and requirements (Baregheh et al. 2009). Ettlie and Reza (1992) have pointed out that a common definition of innovation is related to new products, new processes, new services and new firms. Wong et al. (2008, p. 2) have suggested that ‘Innovation can be defined as the effective application of processes and products new to the organisation and designed to benefit it and its stakeholders’. The definitions of innovation have different features depending on its objectives, but the common feature is creativeness in a purpose. This creativeness plays a significant factor in the growth and sustainability of firms.

Indeed, innovative firms continuing innovation of their products tend to show adaptive attributes for the market changes and create profits with growth compared to non-innovators (Geroski and Machin 1992). Furthermore, an innovation which is relevant to new activities is positively associated with exports, productivity and growth (Love and Roper 2015). Likewise, technological innovation is mentioned in various reports, such as the relationship between R&D investment and productivity growth (Coccia 2009), creative destruction (Aghion and Howitt 1990; Hart 2005), open innovation (Enkel et al. 2009) and imitative innovation (Huang et al. 2010). Although the aspects of technology innovation have been shown differently, their significance can be evaluated by the level of creativeness. Hölzl (2009) found evidence to substantiate the importance of technology innovation from the innovative characteristics of high-growth firms compared to non-high-growth firms. In particular, Colombelli et al. (2016) found that start-ups concentrating on the innovation of product and process show a higher survival

rate than non-innovative firms. Although the effect of innovation is limited in sales growth rates in normal firms (Coad and Hözl 2010), it is very important for faster growing firms (Coad and Rao 2008; Goedhuys and Sleuwaegen 2010; Stam and Wennberg 2009). That is, many studies show the attempts by companies to achieve the growth of businesses through technology innovation. Although there are various types of innovation, such as service innovation, product innovation, manufacturing innovation, and R&D innovation, this study focuses on technology innovation underpinning R&D actions for the development of products in high-tech SMEs.

Regarding the impact of strengthening technology innovation, research and development (R&D) is a basic element of technology innovation and also the primary generator for development of products and getting new knowledge (Catozzella and Vivarelli 2007). The strategy of acquiring technology can be divided into internal R&D and the acquisition of external technology. Although both cases require sizable expenditure, internal R&D is more effective for product innovation whilst the acquisition of technology affects the fostering of innovation (Conte and Vivarelli 2005).

There are no decisive ways to acquire technology, with entrepreneurs' decisions varying according to the business circumstances. Coad et al. (2016) report that R&D investment by young firms has more significant risks than the R&D of mature companies. Also, patterns of technology innovation can be related to long-term CEO tenure and strategic orientation (López Fernández et al. 2016). That is, the product innovation of SMEs has also been associated with the characteristics of entrepreneurs (Martínez-Román and Romero 2013). In the end, entrepreneurs consider various external business environments to decide on business strategies, including technology innovation. Therefore, entrepreneurs' efforts at technology cannot be completed with internal organisational activities. Consequently, in the next section, various external factors will be discussed to see how those factors influence the growth of companies.

2.3.4 Summary

Owner-managers' competence can be changed by their knowledge, experiences, intentions around growth, and the ownership structure of the company. As mentioned in the literature review, owner-managers' experiences influence the growth of

businesses (Baum et al. 2011), and their practical knowledge is useful for making business opportunities and stimulating the growth of businesses (Kor 2003). In particular, the similar experiences of entrepreneurs to their present business improve business performance (Laguir and Den Besten 2016). Although their experiences can impede the introduction of new technology (Sam et al. 2012) and cause biased investment in R&D actions (Barker and Mueller 2002), the active participation of owner-managers in business is related to the sustained growth of the company (Kor 2003) and reduces conflicts between members (Edmondson and Smith 2006).

Furthermore, empowerment is an important factor for motivating employees' contributions (Dobre 2013). Samuel and Chipunza (2009) discussed the motivational variables for retaining skilled people in a company. As a consequence, internal organisational competitiveness can be strengthened and is related to organisational culture. In encouraging coherence (Hemmert 2008) and collaboration (Carmeli et al. 2011a), organisational culture has been affected by owner-managers' leadership and actions. In the case of internal innovation, previous studies have confirmed that owner-managers' characteristics are significantly associated with internal technology innovation (Martínez-Román and Romero 2013; López Fernández et al. 2016).

In other words, internal factors can be identified as those which are controllable and related to the enterprise's personnel, sociocultural, political, and technological capabilities (Gupta et al. 2013). In particular, technology innovation as the internal technological capabilities are perceived as an important internal factor for high-tech SMEs. Furthermore, owner-managers and employees are the critical business elements and the resources for enhancing internal factors, such as business strategies, marketing, R&D actions, and financial responses to the external changes affecting the business.

Technology is also perceived as one of the many external factors. In particular, this thesis focuses on the external technological factors influencing the R&D strategies of high-tech SMEs. Therefore, the next section reviews the external factors, including external technological factors.

2.4 External factors for sustained growth of high-tech SMEs

Business environments influence the productivity and performance of firms. In particular, SMEs are affected by external business environments more than larger firms. Previous studies have examined the effects of networks while considering supply chain (Thun et al. 2011; Dutta and Hora 2017), customers (Zeng et al. 2010) and financial impact (Moreira 2016). Indeed, at the beginning of a business, entrepreneurs face diverse issues, such as business networks, customer relationships, technology, unexpected economy conditions and external funding. To review external business environments, a PEST (Policy, Economy, Social, and Technology) analysis has been commonly used in many studies (Gupta, 2013). Although some studies have discussed specific subjects as external factors, the basic classification is close to a PEST analysis. This section review three factors from a PEST analysis: technology, the economy and social conditions. The section on policy is reviewed separately from the external factors because policy can affect SME growth internally and externally. Also, the technological environment is considered an external factor, in contrast to the technological capability which is an internal factor.

2.4.1 Technological factors

Technology contributes to changes in the business direction of SMEs, as well as contributing to SME competitiveness and productivity. Indeed, digital technologies improve the market intelligence of SMEs and allow them to access global markets at a relatively low cost (Cusmano et al. 2018). In particular, high-tech firms are affected by technology change and, hence, they can manage their business as technology-oriented companies (Ganotakis 2012). That is, external technology change is one of the factors motivating business changes as well as the R&D actions in high-tech firms.

SMEs attempt to gain technological ability and technology acquisition can be identified by the process involved. Firms have two options to gain technological performance. One is internal development, and the other is external technology absorption. They are referred to as 'technology exploitation' and 'technology acquisition', respectively (Lichtenthaler 2008). It is necessary for the company to get financial funding from outside or to use their own funds to engage in R&D. That is, R&D is very costly for SMEs

because of the constraints of financing resources (Riding et al. 2007; Ortega-Argilés and Voigt 2009). Therefore, SMEs make an effort not only to get external funding but also to access internal R&D funds. With regard to accessing external resources, the importance of external sourcing knowledge has become increasingly important for established companies in order to react in a flexible way external technological changes and the changing market environment (Van de Vrande et al. 2009).

Furthermore, given the difficulty of accessing finance and technology, SMEs need to consider collaboration with external bodies, such as research institutes, and universities (Kristensen et al. 2015). Collaboration with external resources such as universities and research is positively associated with the improvement of innovation in SMEs, and hence, it leads to getting new technologies and awareness of employees' knowledge, which stimulate internal R&D activities (Belderbos et al. 2015). These efforts to get technology and to react to external technological changes are a way of overcoming technological uncertainty. That is to say, SMEs need to predict technological changes and hold their technological competitiveness in response to external technology changes in order to overcome technological uncertainty (Kang et al. 2013).

Technology absorption of SMEs is a critical factor in developing products as well as accumulating innovation abilities. On the other side, technology acquisition is an alternative to internal R&D actions when companies face the limitation of technological capabilities. Technology acquisition from outside is also referred to as technology exploration. In their activities of exploring technologies outside, firms need to meet customers and to reflect on the modification of products (Van de Vrande et al. 2009). That is, technological capabilities are also associated with external networks. In the study by Lee et al. (2010), effective networking was shown to be one of the facilitators for improving technology innovation via collaboration with external partners.

There are diverse options for SMEs to access external technologies and react to market changes. But, not all options are available for adaption by SMEs, which may lack the capability to access external help and applications.

2.4.2 Economic environment

External economy conditions

Entrepreneurs are faced with diverse business issues while they are surviving and expanding their operations. With regard to SMEs, Bhamra and Dani (2011, p. 5373) state: 'they are far more sensitive to financial fluctuations; legislation and employment law; supply network relationships, technology changes, changing customer requirements, and demands and even a collapsing national financial system'. In particular, national economic conditions and international business significantly influence the growth of SMEs due to the highly interconnected relationship between countries in the world. SMEs are vulnerable to unexpected external economic crises due to a lack of financial capability, information and human resources.

National inflation is positively associated with turnover growth and lower interest rates contribute to turnover growth due to the stimulation of consumption and investment (Ipinnaie et al. 2017). The positive effect of inflation for turnover growth has been supported by Beck et al. (2005) and Mateev and Anastasov (2011). When SMEs concentrate on the domestic market, they are influenced by national economic crises. Meanwhile, it is easy to be affected by the currency exchange rate and international competitors when SMEs are export-oriented firms. For example, a reduction in the exchange valuation is positive for the exports of SMEs but an unstable exchange rate is negative for SMEs compared to larger firms (Rashid and Waqar 2017). Regarding the impact of international economic crises for SMEs, Soininen et al. (2012) found the world economic crisis negatively affected entrepreneurial orientation whilst innovativeness and pro-activeness positively influenced firm performance during the economic recession. Therefore, SMEs have to prepare for external risks. Nevertheless, there is a limitation to reacting to external business environments for SMEs. Bourletidis and Triantafyllopoulos (2014) suggested alternatives such as product innovation, new pricing and a different approach to suppliers and information management as a way of overcoming an external business crisis. Gabrielsson et al. (2014) found that development and improvement of an existing production process was more helpful for achieving sustainable high-growth firms than expanding international business. Also,

Korean SMEs attempted to strengthen themselves in marketing and technology innovation during the Asian financial crisis of 1997 (Gregory 2002).

As shown in previous studies, SMEs do not have many for overcoming external business risks such as a national economic recession or an international economic crisis. They have insufficient financial capability, lack human resources and have relatively weak networks compared to larger firms. That is why SMEs chose technology innovation as an effective solution for external business risks. Furthermore, all relevant business factors exist within the business network, and they are linked to each other. Therefore, the contribution of a business network to stability is perceived as an important factor for business owner-managers. In the next section, studies on business networks are reviewed.

Business networks

Business networks influence business creation, value creation and the improvement of the business performance of SMEs. Representatively, the relationship between suppliers and distributors is also based on business networks. It is an interdependent relationship, and businesses can start from this point. Therefore, the business network connection contributes to value creation in the market through an interdependent relationship (Holm et al. 1999). A business network is defined as a business relationship between business partners regarding a business deal (Prenkert and Hallen 2006). These business networks can also be classified as inter-firm relationships (Hagedoorn 1990), supplier and customer networks (Bradley et al. 2006) and the information networks of SMEs (Witt 1999). Networks also spread risks, save time and save costs for innovation (Marinova and Phillimore 2003) and positively affect the long-term performance of firms (Zhou et al. 2007). Based on a networking relationship, advice from suppliers and customers is also beneficial for the sustained growth orientation of firms across the different business stages (Pickernell et al. 2013).

Roper and Hart (2013) shed light on the importance of external advice and support. Both networks and collaboration with universities and research institutes play an important role in enhancing the innovation of SMEs (Kang and Park 2012). Likewise, Doh and Kim

(2014) found that a network with universities positively affects the acquisition of patents and the registration of trademarks as outcomes of R&D activities.

Furthermore, the application of networks is shown differently depending on the firm's age range. In the case of customer networks, the performance of open innovation is positively associated with customers as the knowledge resources of the business (Radicic and Pugh 2017). It is necessary to suggest a reasonable way to elicit demand from customers as the network with customers is so important. Most of the demands are derived from customers, and these demands can positively affect firm growth. On the other hand, the gap between SME managers and customers can negatively affect a firm's performance. As a consequence, Simon (1996) pointed out that a development team has to understand marketing and technical expertise to integrate both trends in new-to-market type developments.

Also, SME managers need to consider empowering cross-functional teams to reflect diverse opinions in an organisation and change the product to meet with customer demand. (Boer et al. 2005). The opportunity of meeting customers can lead to business opportunities and, thus, the company can achieve business growth. Levie and Lichtenstein (2010) have argued that a dynamic state enables opportunities to be converted into customers through the network, relationships and systems, and also generates new resources to sustain a dynamic state. Knowledge absorption is carried out by contacting customers, and absorption capacity enables enterprise growth. Phelps et al. (2007) discussed the tipping points, which are the result of growth or environmental changes. Firms have to have the capability to identify requisite knowledge and apply this to resolve new challenges. Therefore, absorptive capacity regarding the ability to absorb and use new knowledge is required to move to the next tipping points. Daghfous (2004) has also suggested some actions such as communication and culture rewards. These internal factors enhance an organisation's absorptive capacity.

Furthermore, the contribution of networking is not linked to short-term benefits such as growth in employment or in total sales, but the interaction between networking and growth in the geographic extension of the markets is related. This can be construed as

an effort to reduce long-term risk and, therefore, the costs of the firm (Havnes and Senneseth 2001). In the end, firms have to evolve and develop iteratively via business strategies, networks and preparation for external environments. One of the contributions in business networking is the relationship between owner-managers and external financial support. At the beginning of a business, owner-managers use internal finance, but they will attempt to get diverse financial resources in the market for future business. Regarding financial capability, studies on the importance of financing SMEs is discussed in the next section.

Financial environments

The financial capability of SMEs is a significant important factor which encourages the entry, exit and growth of companies (Beck and Demirgüç-Kunt 2006). Therefore, the growth and development of SMEs are negatively related to difficulties of access to finance (Beck and Demirgüç-Kunt 2006; Ayyagari et al. 2008; Klonowski 2012; Banerjee 2014). SMEs need to acquire sufficient financial capability in order to continue investment and employment growth.

Owner-managers generally use internal financial resources and external financial resources. An internal financial resource which is relevant to family money has been mainly used as foundation capital. Entrepreneurs use bank loans as a representative external financial resource. This bank loan can be identified as short-term debt (STD) or long-term debt (LTD). Generally, SMEs prefer to use STD rather than LTD (Kachlami and Yazdanfar 2016). Although external bank loans are useful for investing in diverse business actions to SMEs, external financial resources can be a burden in some cases because it is a debt which must be repaid to the bank. Indeed, when SMEs face a financial crisis, the default probability of SMEs using a bank loan is greater than for others using a guaranteed bank loan (Duarte et al. 2018). Nevertheless, firms having the intention to grow their business need the financial capability to do so. Moreira (2016) asserted that the growth of SMEs is strongly associated with financial access. Furthermore, HGFs tend to draw finance from banks rather than raise equity finance. In particular, they borrow funds to grow their business unlike slower-growth firms (Brown and Lee 2014).

Financial support of SMEs has a positive effect on capital investment, firm performance and employment (Kersten et al. 2017). Access to finance and legal supports plays an important role in reducing the growth constraints of SMEs (Beck and Demirgüç-Kunt 2006). a guaranteed loan is suggested as an alternative for a normal bank loan to SMEs for supplying low-risk financing. Many governments have implemented a loan guarantee system to support SMEs' financial capability (Riding and Haines 2001). But this financial resource is also a different type of burden to SMEs. In the end, firms have to repay debts with added interest to financial institutions or banks.

Therefore, firms need to conserve their working capital to acquire internal financial capability simultaneously. García-Teruel and Martínez-Solano (2007) confirmed that reducing their inventories and shortening the cash conversion cycle was effective for improving profitability in business. Furthermore, managing current assets is important to SMEs because they encounter difficulties in obtaining long-term finance from capital markets (Petersen and Rajan 1997).

Given the vulnerable conditions of SMEs in financial capability, SME owner-managers need to consider their financial balance sheets to maintain the balance between the loan and the asset. At the same time, various social contexts can affect the business performance of SMEs. The next section discusses the relationship between socio-cultural contexts and the SME business.

2.4.3 Socio-cultural contexts

A business operates as a social relationship between suppliers and customers. The social environment affects the attitudes of a community in a legal perspective and the preference for a product. Therefore, the impact of the social environment is associated with consumers' preferences, relations with employees and the expectation of society for an organisation (Gupta, 2013). The social relationship between stakeholders is also affected by cultural characteristics. Indeed, management procedures and habits are formulated in a specific cultural context (Bjerke, 2000).

Zapalska and Fogel (1998) introduced evidence that the social and cultural characteristics of industrial districts influence the behaviour of entrepreneurs. Yetim

and Yetim (2006) discussed how socio-economic and cultural structures are the elements which are necessary to consider improving the job satisfaction of employees. There are various cultural factors influencing the business and many studies considered those in different countries. Indeed, Gaganis et al. (2019) discussed the culture impact on entrepreneurship and they found that individualism and masculinity is positively associated with the profitability of European SME, whilst power distance and uncertainty is negatively associated with the profitability. Walsh and Winsor (2019) also discussed the impact of socio-cultural factors on the regional entrepreneurial ecosystem in the case study of a local area in Canada, and they found that lack of mentorship, weakness of sharing information, and poor networks, due to trying to avoid potential competition, inhibited regional entrepreneurship. Given that each country has different characteristics, cultural factors may need to be considered in the study of impact of organisational performance.

Kandori (1992) referred to social norms as the specification of desirable behaviour with sanction rules in a community. That is, members in a community have their common perspectives for business culture. Meek et al. (2010) found that social norm plays an important role in creating new firms which are associated with regional society and family life. Koe and Majid (2014) found that three socio-cultural factors, time orientation, sustainability orientation and social norms, are significantly associated with the intention to achieve sustainable entrepreneurship. Socio-cultural contexts affect the behaviour and attitudes of social members, and, hence, the business is affected by those members' actions. That is, business factors can be influenced by business stakeholders with diverse social characteristics who are involved in society. Also, O'Neill et al. (2009) discussed the culture influence organisational aspects: management, leadership, decision making, and the sustainability entrepreneurship process. In other words, socio-cultural backgrounds operate as a context of forming business patterns and the organisational culture.

In the end, socio-cultural characteristics lead to diverse corporate governance patterns in various business structures. That is why the consideration of corporate governance structure is required to study factors influencing the sustained growth of SMEs.

2.4.4 Summary

SMEs are positively or negatively affected by external economic conditions such as inflation (Beck et al. 2005; Ipinnaiye et al. 2017), legislation and technology changes (Bhamra and Dani 2011), and national economic crises (Mateev and Anastasov 2011). In particular, the innovation of technology is the foundation of sustainable competitive advantages (Rhee et al. 2010) and a resource of long-term growth for manufacturing companies (Ismail et al. 2011). Technology is a decisive factor in exports, productivity, and growth (Love and Roper 2015), and a contributing factor to achieving HGFs (Hölzl 2009). HGFs continue to grow their business by responding to external technology changes (Ganotakis 2012). Also, HGFs tend to use financing from banks (Brown and Lee 2014), and this financial capability is significantly associated with the growth of businesses (Moreira 2016).

Therefore, SMEs need to prepare various alternatives to allow for external economic changes (Bourletidis and Triantafyllopoulos 2014). SMEs make an effort to get external advice of partners in networks (Lee et al. 2010) and take advantage of various technological trends (Kang et al. 2013; Belderbos et al. 2015). External collaboration with universities and research institutes enhance the innovation of SMEs (Kang and Park 2012) and the acquisition of patents (Doh and Kim 2014). In the end, various business networks make it easy for entrepreneurs to access customers who are knowledge sources of the business (Radicic and Pugh 2017).

To sum up, although the external factors seem to be separated with each other, all external factors are interacting and able to influence on the growth of the company, as well as affecting the responses of organisational members. Given business strategies have been introduced by internal decisions, reflecting external business environment, internal capability of reading industrial trends would evolve by the process of responding to the external factors. That is, both internal factors and external factors have to be considered simultaneously to achieve the sustained growth of high-tech SMEs.

Furthermore, when it comes to the wider issue of external factors, policy factor can be included. However, this chapter reviews the policy factors separately to consider policy

support and policymakers. As a consequence, the next section reveals the impact of policy schemes related to SMEs and policymakers on the growth of SMEs.

2.5 Influence of policy on the sustained growth of high-tech SMEs

Governments tend to focus on supporting SMEs by an enterprise policy to enhance economic growth regardless of the negative opinions around such policy implementation (Arshed 2017). That is, the public sector concentrates on supporting and encouraging entrepreneurship because it believes that the growth of SMEs contributes to creating jobs, innovating and developing the economy (Michael and Pearce 2009). Also, governments believe that policy supports are a significant determiner of firm growth and survival (Hansen et al. 2009). Indeed, policy support for SMEs is aimed at assisting entrepreneurs, financial support, supporting innovation and market entry, and stimulating new start-ups (Audretsch 2004).

In the study by Preuss (2011), entrepreneurship and small business policy have three main components: legal authority (e.g. preferential taxation rate), the market (e.g. particular procurement), and network effects based on geographic conditions (e.g. the place where entrepreneurs exchange information and knowledge). This classification focuses on functional business factors where it is difficult to identify SMEs that are eligible to receive policy support. Stevenson and Lundström (2001) divided policy support for SMEs into two categories: entrepreneurship aimed at pre-start-ups and start-ups, and the SME policy focused on SME sector productivity and competitiveness issues for established firms. Likewise, researchers commonly distinguish between industrial policy support for SMEs and new entrepreneurship policy (Bridge 2010; Audretsch and Beckmann 2007). Enterprise policy focuses on business start-ups and small business growth (Stevenson and Lundström 2001; Audretsch et al. 2007). Mallett et al. (2019) also discussed the impact of the variance and complexity of regulations on the owner-managers' decision. Therefore, this review adopts the classification of previous studies and looks at the role of policymakers: entrepreneur policy, SME policy and policymakers.

2.5.1 Entrepreneurship policy

The entrepreneurial policy is aimed at stimulating new firms, support the survival of firms, and foster the growth of established firms (Reynolds et al. 1994). Expanding the public economy, fostering innovation, and creating jobs are perceived as the core of entrepreneurial policy. Lundström and Stevenson (2005) divided entrepreneurship policy typology into four expressions: 'the new firm creation policy, SME policy extension, holistic entrepreneurship policy, and the Niche E-policy'. Edoho (2016) discussed how entrepreneurial motivation is required to achieve the policy purposes. That is, mainstream entrepreneur policy tends to focus on encouraging people's motivation to start new firms rather than the business process at the beginning stage because of the job creation placed in the main policy target. In entrepreneurial policy, entrepreneurs are the solution to improving weak economic performance as well as a low level of job creation (Audretsch et al. 2007). Governments have adopted various policies for creating a context and a system to lead entrepreneurship (Glancey and McQuaid 2000; Thurik et al. 2013).

On the other hand, entrepreneurial policy is concerned with making an entrepreneurial ecosystem to support new start-ups. Entrepreneurial ecosystems are structured around the geographical concentration of economic activities (Isenberg 2011). To support entrepreneurial ecosystems, local governments and national governments fund diverse entrepreneurial support organisations and they contribute to achieving entrepreneurs setting up their business successfully. In line with this, Spigel (2016) asserted that regional governments have to avoid 'one-size-fits-all' solutions with one agency and should provide diverse support for all stages of business growth for SMEs. However, the entrepreneurial ecosystem supported by public sectors tends to focus on the start-up stage. Encouraging the motivation of university students is effective for fostering entrepreneurial environments (Shirokova et al. 2018). Also, Denmark has encouraged and supported entrepreneurial activity, but the results show that increased start-ups did not generate many HGFs (Napier et al. 2013; Stam 2014). As a consequence, the main point of entrepreneurial ecosystems is to focus on business start-ups rather than high growth business (Mason and Brown 2013).

On the other hand, entrepreneurs face a lack of expertise in some business processes. Thus, the government has given some advice to help SMEs through public advisers funded by government even though entrepreneurs tend to favour external advisers (Robson and Bennett 2000). Also, entrepreneurs can have difficulty in finding appropriate places to set up their business due to lacking capital to get premises. Therefore, governments and universities support them with incubators to supply appropriate accommodation during the entrepreneurial phase. Acquiring premises is related to the survival of firms (Mas-Verdú et al. 2015). Furthermore, entrepreneurs need to expand their business networks to understand the market and get a wide range of information. In this point of view, cooperation between industry and university is an important mediator for connecting the relationship between practical creation and learning about creation (Dada and Fogg 2016). Business incubation policy is carried out in the local area and in universities (Messeghem et al. 2017) while publicly-funded incubators provide network, hosting and consultancy services to new firms (Carayannis and von Zedtwits 2005). Indeed, supporting start-ups via business incubation enables the getting of business advice, networking opportunities and finance (Miller and Bound 2011). Cluster policy is also important to entrepreneurs. Cluster-based-policy support contributes to the fostering of start-ups and achieving economic activity in cluster areas (Ketels 2003). In other words, clusters have diverse roles in stimulating building various infrastructure, as well as promoting high-growth entrepreneurship in specific areas (Chatterji et al. 2014). Therefore, policymakers tend to perceive the cluster-based policy as a way of developing regional and national economies (Ketels 2003). After entrepreneurs set up their own business, they need to find a business strategy which grows their firms. In this stage, they also have opportunities to apply for government programmes, which have diverse schemes to support SMEs to gain competitiveness. In the next section, studies on government programmes which enhance the productivity and competitiveness of SMEs are discussed.

2.5.2 SME policy for productivity and competitiveness

SME policy support for achieving productivity and competitiveness has various policy components which are relevant to employment, R&D, finance and marketing. Aiginger

(2014) identified the characteristics of policy in two ways: high-road strategy (education and innovation) and low-road strategy (wages, tax, energy prices). In the study by Warwick (2013), industrial policy is regarded as having three stages: subsidies and tariff protection are used in product market interventions; R&D subsidies, training, and finance accessibility are used in a phase of correcting market failure; and creating networks, developing institutions and aligning strategic priorities are used as the third stage of building up systems. Not all support is not substantial to SMEs' business and thus previous studies discussed various policies. Wapshott and Mallett (2018) analysed UK government policies and found that they had focused on 'the potential for growth', 'struggling to access finance' and 'over-burdened by regulations' over several decades. Although it is possible to amend the policy initiatives when the regime is changed (Thompson et al. 2012), governments focus on the structure, which is enabling SMEs to gain competitiveness.

Furthermore, the R&D action of high-tech manufacturing SMEs is positively associated with employment (Bogliacino et al. 2014). Thus, the government contributes to R&D subsidy schemes to stimulating the R&D actions of high-tech SMEs (Kang and Park 2012). Also, a tax credit for the investment of R&D helps the growth of SMEs more than larger firms (Hong and Lee 2016). That is, the government supports SMEs' R&D through subsidy schemes, and the results show the effectiveness of the development of technology and economy growth (Cin et al. 2017). Indeed, according to the research of Szczygielski et al. (2017), government aid for R&D is more efficient for innovation than educational support to improve employees' skills. Public innovation funding focuses on how high technologies contribute to developing new products, as well as creating new markets to influence exports (Liu and Rammer 2016). In other words, much public R&D funding for SMEs is concentrated on developing new products and, therefore, the commercialisation of developed products is required to see successful policy implementation. Doh and Kim (2014) mentioned that commercialization and market expansion are necessary to achieve the policy purposes of SME innovation. Indeed, there is a lack of commercialisation and market expansion of subsidised innovation outcomes (Moretti and Wilson 2014; Bronzini and Piselli 2016).

The national tax reduction, as well as an R&D subsidy, is an important policy support for the R&D activities of SMEs. Tax reductions in return for an increase in R&D accelerate such activities in SMEs (Guceri 2018). However, there is also evidence that the relationship between tax reductions and practical R&D activities is negative (Cowling 2016). But the policy impact cannot be explained by policies because the business mechanism is too complicated to describe in one aspect. That is why many governments have various SME policies. Indeed, the South Korean government has diverse components in its R&D policy: a guaranteed R&D loan with low-interest rates, R&D subsidies, and tax reductions for R&D expenditure (Shin and Woo 2013).

Also, policy support has alternatives to enable young firms to enter the market. Indeed, the procurement policy contributes, allowing SMEs to enter the huge public consumer market (Kidalov and Snider 2011). But there is also a negative side to procurement policy because young and new firms find it difficult to access this public market (Pickernell et al. 2013). The existence of public procurement *per se* is to ensure the minimum size of the market for entrepreneurs (Flynn and Davis 2016). Indeed, the US government uses procurement policy as a means to reduce discrimination against SMEs leading to their economic exclusion (Orser et al. 2019). In the study by Reijonen et al. (2016), participation in the public procurement market improved the innovativeness and proactiveness of entrepreneurs through bidding experiences with other SMEs. Despite the positive effect of procurement, if SMEs massively depend on public procurement, they will have difficulties finding a way of competing with other companies in the private market.

On the other hand, policy procurement as regulation can constrain the entry of mature firms into the public market. Regulation can reduce the competitiveness of firms even though there are business advantages for specific groups. Indeed, the regulation of licensing industries such as health, medicine and law affects the creation of new markets as well as hindering new firm creation (Kitching et al. 2015). Djankov et al. (2006) found that the relationship between business-friendly regulation and the higher growth of firms was significant. But not all countries have the same strategic approach in implementing the policy because the impact of regulation has been identified by the industrial context each country has. Indeed, Acs and Szerb (2007) asserted that middle-

income countries need to focus on increasing human capital, technology availability and enterprise development while developing countries need to reduce entry regulations.

In terms of financial support, a credit guaranteed fund can be useful for reducing the financial burden of SMEs. Firms with a high rate of public guaranteed loans show a lower rate of debt compared to normal companies (Ughetto et al. 2017). Also, government financing support is positively associated with the innovation of SMEs (Doh and Kim 2014). Although there is some positive evidence for government financial support, not all governments can support SMEs and there are different levels of financial support for SMEs depending on the economic conditions of particular countries (Shi and Li 2006). Grilli and Murtinu (2014) found that government-managed funding does not affect the sales growth and employment growth of high-tech entrepreneurs in European countries compared to independent venture capitalists' funding. That is, governments, in providing financial support, cannot always expect only positives for the growth of SMEs.

To sum up, there are various policies for supporting the growth of SMEs. Each policy has positive and negative effects, and those policies have been evolving and reflect the change in business environments. Each policy scheme has diverse structures, from design and delivery, to implementing the policies for SMEs. In policy design, policymakers and policy practitioners have multi-layered responsibilities for delivering policies to SMEs and for improving policy efficiency. Although both roles are different, ultimately their obligation is focused on improving the efficacy of policy support. Therefore, the next section reviews the role of policymakers and policy implementation.

2.5.3 Policymakers and policy implementation

Policy support for SMEs is delivered by the administration process of policymakers and policy practitioners. Many policies have been developed to support entrepreneurship in national level as well as regional level with considering industrial contexts and various business factors (McQuaid 2002) and the delivery of government policy is largely delegated to regional and local government agencies (Thompson et al. 2012), whereas policymakers and government leaders do not act as policy deliverers (Liddle 2010). Although policymakers made an effort to implement policy effectively, there are some limitations to the policy efficacy. The ineffectiveness of enterprise policy is caused by a

lack of guidance from policymakers, the fulfilment of limited duties, the rudimentary consideration of policy initiatives, the lack of an evaluation process, and the weak relationship between policy stakeholders (Arshed et al. 2016). That is, the efficiency of policy implementation can be decided by the performance of policymakers. Niska and Vesala (2013) have suggested that the relationship between policy actors and entrepreneurs needs to be considered individually because perspectives can be exchanged through joint activity. Also, policymakers and policy stakeholders can develop enterprise policies collaboratively through the strategic conversation and assessment process (Woods and Miles 2014).

Given the important relationship between policymakers and policy stakeholders, it is necessary to consider the policy implementation process for improving policy efficacy. The top-down approach has been adopted by policymakers for a long time; it is available to restrict the understanding of policy stakeholders' needs and effective policy delivery (Fuller-Love et al. 2006). Enterprise policy mainly exists at the macro level in a top-down approach, even though policy initiatives are delivered by policy practitioners at the micro level in a bottom-up approach (Arshed et al. 2016). The dimension of a bottom-up approach in policy implementation includes the administration process of local policy implementers, who have the responsibility to implement policies in the field via contacting SMEs and entrepreneurs (Urwin and Jordan 2008). Lipsky (1971) refers to front-line workers doing policy delivery as 'street-level bureaucrats'. They are public workers interacting directly with citizens, and they have discretion when they implement the policy. Therefore, Meyer and Vorsanger (2003) have argued that street-level bureaucrats should be empowered to enhance their willingness to implement the policy. That is, empowerment based on the bottom-up approach is perceived as an essential process for improving policy implementation (Deleon and Deleon 2002; Hill and Hupe 2009; Tummers and Bekkers 2014). Agencies of local governments have the responsibility for delivering enterprise policy (Thompson et al. 2012). That is, street-level bureaucrats can decide to prioritise the rules to be applied and the situation in which they operate (Maynard-Moody and Portillo 2010).

To sum up, policymakers and practitioners have to understand policy initiatives and the diverse needs for the design, delivery and implementation of policy for SMEs. In

particular, policy practitioners as ‘street-level bureaucrats’ can play a mediator role between policymakers and entrepreneurs. Given the significant role of policy actors to achieve policy purposes, the collaboration between policymakers at head office and policy practitioners in regional offices can be perceived as the key factor for improving policy efficacy.

2.5.4 Summary

Industrial policy can be divided into various stages such as subsidies and tariff protection, R&D subsidies, training, finance accessibility, networks and developing institutions (Warwick 2013). Public R&D funding is useful for creating new products and new markets (Liu and Rammer 2016). On the other hand, subsidised innovation outcomes have been criticised for their lack of commercialisation (Moretti and Wilson 2014; Bronzini and Piselli 2016). There also exists indirect policy support. Tax reductions for the employment of R&D engineers have been used to stimulate the R&D actions of SMEs (Guceri 2018). In addition, there is government support through a procurement policy to create a stable market in the public sector for SMEs (Kidalov and Snider 2011; Flynn and Davis 2016). Also, governments have encouraged collaboration with universities and institutes (Dada and Fogg 2016) and clusters to develop regional and national economies (Ketels 2003; Chatterji et al. 2014). Regarding policy regulation, regulation affects the entry into new markets, such as health and medicine (Kitching et al. 2015), and business-friendly regulation can represent the significant relationships that exist with high-growth firms (Djankov et al. 2006). These various policies are carried out by policymakers and policy practitioners, and the administration process involves a top-down approach for underpinning the macro level by policymakers and a bottom-up approach for underpinning the micro level by policy-practitioners (Arshed et al. 2016). Lipsky (1971) has referred to these front-line workers as ‘street-level bureaucrats’, while Meyer and Vorsanger (2003) have pointed out that these practitioners need to be empowered to improve policy implementation.

In other words, government enterprise policy and support and government regulation could affect the growth of SMEs. Also, they could use government regulations as business opportunities to help achieve the growth of the company. The policy support

influences owner-managers' decisions relevant to the growth of enterprise, and thus, owner-managers need to review the changes in policy support as critical factors for achieving sustained growth.

Given the complicated policy impact on SMEs growth, an understanding of policy support from various perspectives needs to be considered to improve policy implementation. This public sector also operates as one of many organisations. That is, they have different organisational culture and desirable corporate governance styles similar to the holistic corporation structure. With regard to the corporate governance, the next section reviews corporate governance theories and organisational performance.

2.6 Governance theories and organisational growth

Organisations such as the companies and governments have a hierarchical structure and a complicated ownership system. The corporate governance of each organisation can act as the catalyst for improving organisational performance and threatening organisational efficiency. Abdullah and Valentine (2009, p. 88) state: 'corporate governance can be defined as a set of processes and structures for controlling and directing an organisation'. Changes in corporate governance tend to be affected by a firm's growth, and are associated with the relationship between management, shareholders and stakeholders (Ching et al. 2006). Given the attributes of the corporate governance, the theories which are relevant to organisational management styles are the main concern of this section. Therefore, this section comprises reviews of three theories: principal-agency theory, stewardship theory and stakeholder theory.

2.6.1 Principal-agency theory

Jensen and Meckling (1976) explained the relationship between the principal who is an owner and agents who are bound to the organisation by contract in agency theory. In other words, managers, including CEOs, can be described as agents who are working to contracts and owners are perceived as the principal who wants to maximise their business interests through the agents' commitment. As a result, principals made efforts to reduce business risks and to get better outcomes through the management of agency

cost, verifying the role of agents (Eisenhardt 1989). Principals and agents have a tendency of seeking to achieve sufficient private benefits with the least effort. That is, they follow the choices which increase individual profits (Davis et al. 1997). Likewise, agents tend to work as contractors who are focusing on self-interest (Gomez-Mejia et al. 2005). The result of concentrating on formal contracts is overlooking the importance of the relationships and trust among members (Cuevas-Rodríguez et al. 2012).

Regarding the issue of agency theory, the misalignment of goals between the principal and agents causes agency problems. The monitoring of agents has been mentioned as a way of avoiding invisible agency problems, but this way is not efficient for eliciting an agent's utmost efforts (Arthurs and Busenitz 2003). Likewise, the board of a company has the function of monitoring and controlling managers and the CEO while boards have been criticised for their ineffectiveness in controlling management (Bonazzi and Islam 2007). Agency theory can be applied to diverse organisations such as in the monitoring of board members in larger firms (Lin 2005), and in small entrepreneurs' firms to get venture capitals (VC) investment (Arthurs and Busenitz 2003) and the public sector, including non-profit organisations (Van Puyvelde et al. 2012) to improve business profits or organisational processes. In some organisations, senior members are also able to be perceived as the principal but their functional management of employees is decided by the owner-manager. Therefore, this study views the members below the owner-managers as being in the group of the agent in the principal-agent relationship.

Although agency theory is suggested as a solution to reduce agency cost and manage agents in the contractual process (Mole 2002), managing trust between members is also a critical psychological approach in organisation studies, which needs to understand what people are motivated to believe about each other (Cuevas-Rodríguez et al. 2012). With regard to the disadvantages of agency theory, stewardship theory offers an alternative to improving organisational performance. The next section reviews stewardship theory.

2.6.2 Stewardship theory

Principal-agency behaviour tends to be centred around individual interests whilst stewardship behaviour is based on organisational benefits. As an alternative theory to

agency theory, stewardship theory has offered, and is rather close to, sociology and psychology (Fox and Hamilton 1994; Davis et al. 1997). Arthurs and Busenitz (2003, p. 154) addressed stewardship theory in their study: 'Stewardship theory characterizes human beings as having higher-order needs for self-esteem, self-actualization, growth, achievement, and affiliation'. Davis et al. (1997) noted that the relationship between managers and principals is not motivated by individual profits, but that the steward's motivations are associated with the principal's objectives. Indeed, Hernandez (2008) has asserted that leadership is a significant factor in fostering stewardship behaviour. In other words, stewardship behaviours are a type of social action by which individuals contribute to the collective benefits through a relationship between the principal and the members (Hernandez 2012).

Furthermore, stewardship behaviours are related to psychological ownership (Wasserman 2006), and the psychological ownership of a company leads to the creation of stewardship behaviours, as well as to fostering individual responsibility in the organisation (Hernandez 2012). Arthurs and Busenitz (2003) discussed the relationship between equity ownership and executives' 'psychological ownership'. Pierce et al. (2001) found that equity owners engage in more steward-like behaviours. That is, stewardship behaviours can be affected by improving the sense of belonging to the organisation. Empowerment is also one of the ways of creating stewardship behaviour in members. Indeed, Donaldson and Davis (1991) found that empowering managers affected the motivation of autonomous executive efforts rather than controlling managers by owners.

Compensation and empowerment have been used to motivate the stewardship behaviours of members, including at the CEO level. Members' extra efforts can be motivated by their psychological ownership, and their psychological intentions can improve organisational performance. Indeed, Wasserman (2006) found that companies run by founders grow rapidly compared to firms operated by non-founders. That is, it stewardship actions strongly influence the pattern of company growth. Stewardship theory sheds light on the alignment of the owner's interests and members' interests. It is useful to improve business performance, but it is possible for empowerment to result in immoral decision-making. That is why the inter-relationship between owners and

members is an important issue. Therefore, Hernandez (2008) believed that the social exchanges between a leader and followers played an important role in formulating stewardship behaviour. The components of agency theory and stewardship theory are directly relevant to the organisational profits model and business purposes. However, organisational structure cannot be informed by these components only because there are many stakeholders in the field.

2.6.3 Stakeholder theory

Stakeholder theory has been suggested by Freeman (1984) for strategic management purposes, and the theory can be explained as a combination of sociological and organisational considerations (Wheeler et al. 2002). Freeman (1984, p. 46) defined the stakeholder as 'any group or individual who can affect or is affected by the achievement of the organisation's objectives'. In stakeholder theory, managers work for stakeholders: the suppliers, employees, and business partners (Abdullah and Valentine 2009). In a normal corporation, stakeholders, such as investors, suppliers, employees, and customers, form an input-output relationship as a contribution to the company, but the stakeholder model represents the aspect of investment and compensation to the firm (Donaldson and Preston 1995). Stakeholder theory departs from the interlinking between internal and external stakeholders. After understanding the interactive relationship between stakeholders, it is necessary to consider strategic management. Harrison and Wicks (2013) noted that stakeholder theory research needs to be considered as a way of closing gaps in such areas as regulation, education, and public policy between stakeholders.

Jones and Wicks (1999) argued that stakeholder theory cannot be described completely without considering other organisational theories. In particular, stakeholder theory has a lack of explanation about the process and is not adequate for supporting inter-related aspects between internal and external factors (Key 1999). In other words, all components in the business fields have interactive characteristics, including an investment purpose without financial profit, while stakeholder theory fails to discuss a wide range of managerial factors and determinants for organisational performance. As

a consequence, stakeholder theory does not accommodate the various perspectives of business stakeholders in terms of diverse business factors.

2.6.4 Governance theories in the private sector and the public sector

Corporate governance has different aspects depending on different entities, with diverse objectives and needs to be considered due to the impact of organisational performance (Heracleous 2001). Therefore, the available theories for each entity should be described differently. Both agency theory and stewardship theory have tended to be applied as research objectives in many previous corporate governance theory studies (Abdullah and Valentine 2009; Wasserman 2006; Arthurs and Busenitz 2003; Lin 2005; Davis et al. 1997).

However, non-profit organisations and the public sector have no clear application for either of the theories. In the study by Van Puyvelde et al. (2012), the principal-agent relationship in non-profit organisations is different depending on the relationship with stakeholders, such as government, clients, managers and employees. This structure describes how all governance theories can be linked to each other to support organisational purposes regardless of the type of entity. Furthermore, Caers et al. (2006) considered how stewardship theory should be considered as an alternative to the limitation of agency theory. Regarding the public sector, Pierce (1989) has previously explored the role of the judiciary as the agent of the people, and he found that the Supreme Court of the US has lost the role of agent while the lower federal court plays a role within the boundaries of agency action. The Supreme Court works as a principal to the lower federal court. This study shows that public governance has a different relationship depending on the hierarchical structure.

As a result, not only does corporate governance theory fit all organisations, corporate governance theory can be used to interpret various perspectives of stakeholders according to the research purpose. Indeed, Madison et al. (2016) asserted that agency and stewardship behaviours can be identified by the purpose of the actual behaviour of the managers. That is, the actual behaviours of members and their attitudes can affect the corporate governance, and corporate governance theory can be used as a way of interpreting members' perspectives on the company.

2.6.5 Summary

Previous studies on corporate governance have discussed the aspect and the attributes of adopted theories in the organisation. The relationship between members in the same organisation can be made according to the organisational purposes and the intention of management. In agency theory, the owner is the principal and agents are the members with the contract in the organisation (Jensen and Meckling 1976). In the principal-agency relationship, agents do their contracted jobs while focusing on individual interests (Gomez-Mejia et al. 2005). These stringent relationships cause a weakening of trust and the relationship between members (Cuevas-Rodríguez et al. 2012). Stewardship theory is represented as an alternative theory to agency theory in sociology and psychology (Fox and Hamilton 1994; Davis et al. 1997). Social exchanges between a leader and followers influence stewardship behaviour (Hernandez 2008). Stewardship behaviours are associated with responsibility (Donaldson and Davis 1991). In this point of view, stewardship governance can lead to employees' utmost contribution. On the other hand, stakeholder theory exhibits the relationship between investment and compensation (Donaldson and Preston 1995), and managers work as stakeholders for the benefit of suppliers, employees and business partners (Abdullah and Valentine 2009). In view of stakeholder theory, it is useful to highlight issues related to the interests and profit of stakeholders. Indeed, the perspectives of managers and employees about the important factors influencing the business tended to focus on internal and external issues, whilst shareholders focus on internal issues (Goldsby et al. 2018). That is, organisational members have different perspectives to shareholders' views and they are the real operators, influencing internal and external factors for the growth of the company.

Each corporate governance theory has a specific viewpoint for interpreting the organisation and there is no one corporate governance fitting for all cases. In particular, stakeholder theory tends to focus on the case of maximising interests in terms of stakeholders' perspectives. Thus, concerning the organizational performance by members' behaviours, this study sheds light on principal-agency theory and stewardship theory by exploring the impact of members' attitudes toward various business actions depending on the form of corporate governance.

2.7 Conclusion

Many previous studies have substantiated the importance of diverse business factors influencing the growth of the company and organisational performance: owner-managers' experiences (Baum et al. 2011), founders' participation in businesses (Kor 2003), product innovation (Colombelli et al. 2016), collaborative organisational culture (Carmeli et al. 2011a), financial capability (Moreira 2016), government R&D support (Szczygielski et al. 2017), policy regulation (Kitcing et al. 2015), principal-agency relationship (Gomez-Mejia et al. 2005), the impact of stewardship theory on members' psychological perception (Fox and Hamilton 1994; Davis et al. 1997), and stakeholder theory (Donaldson and Preston 1995). Although each study discussed various factors influencing on the performance of SMEs, there are few studies on the relationship between stakeholders, with most studies looking at managers, CEOs, owner-managers or leadership groups.

Concerning the social actors of SMEs, business stakeholders such as owner-managers, employees, and policymakers are directly affected by the various business factors. Owner-managers and employees are the main components of the company, and they interact with external business stakeholders. Many previous studies have focused on either the characteristics with a cross-sectional approach or a review over a short-time period. As a result, there is a lack of comparative studies about diverse perspectives on the influential factors of business growth over a long-time period. With this in mind, the question is raised: *'what do owner-managers, policymakers, and employees consider to be major internal factors or external factors influencing the sustained growth of high-tech SMEs?'*

Given the interactive relationships between business stakeholders, Massa and Testa (2008) have discussed how it is necessary to align perspectives and goals among entrepreneurs, academics and policymakers to support the successful innovation of SMEs. In particular, mismatching of perspectives between owner-managers and policymakers on the issue of policy support could significantly affect owner-managers' decisions. Therefore, the question exploring critical factors enhancing the policy efficacy

is raised: *‘what do owner-managers and policymakers consider the impact of policy implementation and intervention to be on the sustained growth of high-tech SMEs?’*

Also, the corporate governance of organisations has a close relationship with organisational performance because it is significantly associated with members’ actions. Many studies have overlooked how the governance structure influences firm performance. Given the relationship between the corporate governance structure and members’ contributions (e.g. Hernandez 2008; Cuevas-Rodríguez et al. 2012), it is necessary to consider ways of improving organisational performance through understanding the impact of corporate governance structure and the organisational culture. In this point of view, the research question about the corporate governance structure is raised: *‘How do perceptions of the influence of corporate governance and culture on organisational performance vary between owner-managers, policymakers and employees?’*

To sum up, internal factors comprise of internal business strategies, such as marketing, financing, and R&D actions, as well as internal organisational culture formulated by interaction and collaboration between owner-managers and employees. These internal factors are also affected by the external factors, which are related to the financial environment, technological environment and policy relevant factors. Although this thesis discusses the policy factors in a separated section to explore specific roles of policy support to the SMEs growth, it can also be discussed in line with the external factors. Many studies have discussed the growth of SMEs, and its contributions to job creation separating into various influential factors as discussed in this chapter. Those precedents show the possibilities to be considered as influential factors to the growth of high-tech SMEs by various business environments and stakeholders. Thus, this thesis sheds light on various perspectives of stakeholders and the next chapter discusses the industrial context of South Korean high-tech SMES, which formed the sample for this study.

CHAPTER 3 HIGH-TECH SMES AND POLICY OF SOUTH KOREA

3.1 Introduction

This chapter introduces the concept of high-tech SMEs, the influential business factors and the factor of government support for SMEs in South Korea. Technology-oriented SMEs in Korea are referred to as *Venture SMEs* or *Innobiz SMEs*⁶ according to the government certification based on specific legislation. Although some technology-oriented SMEs do not have these government certifications, the high-tech SMEs examined in this study do. Bruton and Rubanik (2002) mentioned how high-tech ventures have a tendency to grow, and thus they can contribute to job creation as well as wage growth. Likewise, the Korean government has highlighted the need to encourage the foundation of technology firms for the purpose of job creation. Given the impact of specific industrial contexts on business, the current study discusses the regional characteristics of Korea for high-tech SMEs. This chapter comprises four main sections: the industrial context of high-tech SMEs; the growth pattern of Korean high-tech SMEs; the influential business factors for Korean SME growth; and the policy support for SMEs in Korea.

3.2. Industrial context of high-tech SMEs

SMEs in Korea accounted for 99.8% of all companies on and 76.8% of employment in 2014 (Jones and Lee 2018). Thus, SMEs there are perceived by policymakers as a key element of the national economy. The Korean government passed the Framework Act on Small and Medium Enterprises⁷ in 1966 to support and foster SMEs. Likewise, SMEs have been perceived as a driver of job creation in other countries for several decades (Birch 1987; Shi and Li 2006; Hijzen et al. 2010; Criscuolo et al. 2014). In 2017, the average number of people employed by Korean venture SMEs was 21.7 (20.8 people in 2016) compared to 4.5 (3.9 people in 2013) per ordinary SME (South Korean

⁶ The South Korean government certified technology-oriented SMEs as *INNOBIZ (Innovation+Business)* for SMEs that were at least three years old and *VENTURE SMEs* for all SMEs in order to encourage entrepreneurship and new firm-creation with direct and indirect policy support.

⁷ The Framework Act on Small and Medium Enterprises. Available at: https://elaw.klri.re.kr/kor_service/lawView.do?hseq=44445&lang=ENG [Accessed: 24 May 2019]

government 2018b). Acs and Armnington (2006) have asserted that the creation of a new venture is statistically linked to job creation and local development. OECD statistics show that the number of employees in SMEs in 2016 accounted for over 80% of all employed, putting Korea in the top level of OECD members (OECD 2018a).

On the other side, high-tech SMEs need employees who are well educated or experienced to develop new products and to introduce their items to customers. At the same time, accessibility to the national and international market is a significant factor for sustaining business. Entrepreneurs tend to fill these conditions when they start their own business. Indeed, half of Korean SMEs are in the Seoul metropolitan area because they need to find an appropriate place to attract skilled people and to access the market effectively. The Seoul metropolitan area, the capital region of Korea, has two major harbours, the head offices of major banks, national government offices, the biggest international trade centre in Korea, two international airports and over 50 large universities. Hence, SMEs in this area have access to a wider range of business information, financing opportunities and broad business networks than in other areas. This infrastructure has resulted in many Information and Communications Technology (ICT) clusters in this area over several decades (Park 2008; Jung 2013).

In particular, the ICT industry of Korea accounted for over 10% of value added to the national economy in 2015, twice the OECD average (OECD 2017a). Both ICT manufacturing and other information services accounted for over 8% of value added in 2015. That is, SMEs in the ICT sector are the mainstream of Korean SMEs and underpin manufacturing and parts of ICT services. The sustainable business of these industries has resulted in R&D innovation and government funding (Jones and Lee 2018).

Actions underpinning innovation and R&D need the contributions of high-skilled people and financial support to develop new products and introduce new technologies into the market. The Korean government has organised diverse education programmes to fulfil this requirement, and many companies have increased expenditure on R&D. Indeed, Korea's investment in education and R&D is the second highest in the OECD countries as a proportion of GDP and is an important driver of higher productivity (OECD 2018b).

Overall, Korean industry is developing its manufacturing and service industry based on ICT infrastructure, and innovation is perceived as an important measure of SME growth. Although there are many other industries with competitive advantages, this study mainly considers technology-oriented firms, defined as high-tech SMEs, and their industrial background.

3.3 Growth patterns of high-tech SMEs in South Korea

Korea has a high proportion of its value-added in the ICT industry, such as software service (hereafter software firms or SW) and ICT manufacturing (hereafter hardware firms or HW) (Jones and Lee 2018). Therefore, many pre-entrepreneurs – people who have a plan to start their own business – have focused on those industries because they encounter skilled people and diverse information to create new business more easily compared to other industries. Indeed, the ICT industry is referred to as the key industry of Korea, and these companies contribute to job creation and economic growth (Park 2008). This section investigates ICT industry-related firms via the data of the software platform KISVALUE⁸ to examine their attributes. The author had an account to access the database and gather data from KISVALUE. The ICT industry is classified into electronics-related manufacturing firms and software-related service firms. The research objectives of this thesis relate to these industries.

The companies investigated in this section are SMEs involved in the technology-based SW and HW industries. Sample SMEs investigated in this section receive financial investment from bankers and investors following a financial assessment by a credit evaluation company. Therefore, this data reflects the industrial trend of credit-evaluated SMEs rather than a generalised aspect of each industry. The Korean definition of SME is used in this data. This SME is defined by the number of employees, sales, capital and total assets, with the thresholds varying by industry. This definition was changed to total assets (up to KRW ₩ 500 billion [£333 million])⁹ and sales in 2016

⁸ KISVALUE is operated by the NICE group, which is the National Information and Credit Evaluation agency. This database supplies reliable credit information and business information on every company, and many public institutes. Many scholars use this data platform in business analysis and research (<https://kisvalue.com>).

⁹ Korean Won: ₩1,500 = £1 in May 2019.

(Jones and Lee 2018). SMEs in this analysis followed the previous definition because the investigation period was started in 2010.

This thesis focuses on SMEs that are at least seven years old and views the growth pattern of employment over six-consecutive business years to fit with the time period used (see Section 2.2.3). This data was accessed in 2018 and the credit valuation company supplied company data until 2016. Therefore, the data demonstrate the annual growth pattern of employment and revenue of the investigated SMEs during the period 2010 to 2016. The average annual (compound) growth rate¹⁰ was adopted to calculate the annual growth rate of employment and sales in these sample companies. In the case of young software firms, eleven firms were removed from the sales growth tables because they did not have a sales record at the beginning of business in 2010. Tables 3.1 and 3.2 represent the average employment growth rate and average revenue growth rate of both SW SMEs and HW SMEs by firm age. In Table 3.1, young firms show an employment growth rate of 63.99% (SW) and 10.30% (HW), higher than older firms which show 5.71% (SW) and 4.28% (HW). Young firms also show a higher revenue growth than older firms, at 13.3% (SW) and 10.77% (HW) compared to 4.91% (SW) and 4.32% (HW), as per Table 3.2.

Table 3.1. The average annual growth rate of employment between 2010 and 2016 by firm age

Company age in 2016 (in years)	Software firms (98 SMEs)	Hardware firms (162 SMEs)
7-14	63.99% (27 SMEs)	10.30% (32 SMEs)
15-21	5.71% (71 SMEs)	4.28% (130 SMEs)

Source: KISVALUE 2017 (HW firms: electronic devices and semiconductor; SW firms: Software and IT services), n=260. Adapted by the author.

Table 3.2. The average annual growth rate of sales between 2010 and 2016 by firm age

Company age in 2017 (in years)	Software firms(87 SMEs)	Hardware firms(162 SMEs)
7-14	13.13% (16)*	10.77% (32)
15-21	4.91% (71)	4.32% (130)

¹⁰ Compound Annual Growth Rate(CAGR) = $\left(\sqrt[6]{\frac{\text{Value in the present}}{\text{Value in the past}}} - 1 \right) \times 100$. CAGR has been used in many economics and business management articles to measure the consecutive annual growth rate between two different years (e.g. Ghosh 2002; Barringer et al. 2005; Molla 2016).

Source: KISVALUE 2017 (HW firms: electronic devices and semiconductor, SW firms: Software and IT services), n=249. Adapted by the author. *11 software firms were removed due to no sales in 2010.

Tables 3.3 and 3.4 show the average growth rate of employment and revenue of SW firms and HW firms classified by employment size during the period 2010 to 2016. The annual growth rate of employment shows a higher ratio at 36.64% (SW) and 10.13% (HW) in firms employing fewer than 100 people than firms of over 100 employees, at rates of -0.74% (SW) and 1.25% (HW). The average revenue growth rate represents 9.96% (SW) and 8.86% (HW) in companies employing fewer than 100 people and shows rates of 2.07% (SW) and 2.63% (HW) in firms with more than 100 employees.

Table 3.3. The average annual growth rate of employment between 2010 and 2016 by firm size

Employee numbers in 2010	Software firms (98 SMEs)	Hardware firms (162 SMEs)
1 to 99	36.64% (59 SMEs)	10.13% (77 SMEs)
More than 100	-0.74% (39 SMEs)	1.25% (85 SMEs)

Source: KISVALUE 2017 (HW firms: electronic devices and semiconductor; SW firms: Software and IT services), n=260. Adapted by the author.

Table 3.4. The average annual growth rate of sales between 2010 and 2016 by firm size

Employee numbers in 2010	Software firms (87 SMEs)	Hardware firms (162 SMEs)
1 to 99	9.96% (48)*	8.86% (77)
More than 100	2.07% (39)	2.63% (85)

Source: KISVALUE 2017 (HW firms: electronic devices and semiconductor; SW firms: Software and IT services), n=249. Adapted by the author. *11 software firms were removed due to no sales in 2010

Overall, both size and age are associated with employment growth and sales growth. The tables show some evidence of young and small firms contributing to job creation more than older and larger firms. Likewise, the annual revenue growth rate is similar to employment growth. Young and small firms show a higher rate of revenue growth than older and larger firms. These data cannot be generalised because there are no data on ordinary firms which do not use external funding. Although this data has limited samples from one particular credit valuation company, the samples may support the industrial trend of employment growth and sales growth by size and age of Korean ICT-related SMEs.

In previous studies of contribution to job creation, Birch (1987) found that small firms

in the United States supplied more jobs than larger firms. Neumark et al. (2011) also found that small firms created jobs more than larger firms. However, Davis, S.J. et al. (1996) argued that the relationship between firm size and job creation was not clear. Haltiwanger et al. (2013) found that young firms contributed to creating jobs rather than small firms. Likewise, Lawless (2014) found that younger firms had a more positive relationship with employment growth than size of firms. Furthermore, he found that size has a strong inverse relationship with employment growth in young firms. In other words, size *per se* is not a critical factor for increasing job creation rather than age of firms. Also, Adelino et al. (2017) pointed out that new firms contribute to creating net job more than the expansion of established firms because new firms create new employment and established firms cause job creation as well as job losses. Although the contribution of young firms to job creation is substantial compared to older firms, young firms tend to exit from the market within a short time. Hence, the continuity of the net jobs is lacking. Indeed, Decker et al. (2014) discussed that start-ups and young firms contribute to job creation but most start-ups failed within first ten years, and most surviving start-ups still remain small except for a few high-growth firms contributing to job creation. That is, young firms play an important role in job creation and also cause job losses within a short time.

The investigated Korean SMEs in this section also show similar characteristics to job creation by size and age of firms. In particular, young software firms show a higher employment growth, at 63.99%, than small-sized firms employing less than 100 employees, at 36.64%. Furthermore, young software firms have a higher revenue growth, at 13.13%, than small size firms employing under 100 employees, at 9.96%. Although the number of samples for both cases differs, tables 3.1 to 3.4 show characteristics which illustrate the influence of age over size of firm for employment growth and sales growth. While those tables illustrate the pattern of employment growth and revenue growth by age and size of companies, there are a plethora of factors influencing business success. As a result, this study focuses on diverse business factors, categorised as internal and external ones and policy influences. Also, the study examines SMEs aged over seven years to see the attributes of companies from start-up to maturity (see Section 2.2.3).

3.4 Influential socio-economic cultural factors of South Korea

The national industrial context differs across the world because countries have different cultures, circumstances, educational systems and industrial backgrounds. Different countries have different competitive advantages. Korean industry has strong competitive sectors, such as the ICT and car manufacturing industries.

When it comes to Korea's economic success, science, technology and innovation are referred to as key factors (Chung 2011). Chung (2011) separated the influential factors of the Korean innovation system into three main groupings: outward-looking development strategy, large firm-oriented industrial policy and human resources. To achieve a high rate of technological innovation, consideration must be taken of local demand for products needs to catch up with advanced technology, as well as the transition from latecomer firms to leadership firms (Hobday et al. 2004). Indeed, the mobile handset industry of Korea has grown based on local demand playing a role as a 'test-bed' before product entered the international markets (Whang and Hobday 2011). That is, demand from the national market helps businesses enter international markets and develop advanced products.

In Porter's early study, he discussed national comparative competitive advantage, which is described as 'Porter's National Diamond' (Porter 1990). He cites six components of this diamond: the relationship between firm strategy, rivalry, factor conditions, demand conditions, chance, and government. He discussed the relationship among factors, including the role of policy support in this model. There are many arguments relevant to Porter's study. Tayeb (1995) discussed the effect of HRM and the socio-cultural context on national competitive advantage based on Porter's diamond. Haake (2002) discussed different industrial characteristics according to the various business systems each country has: the more communitarian business systems of Germany and Japan enhance manufacturing industry; the more individualistic business systems of Britain and the United States help to develop the finance industry.

In other words, the business culture of countries affects which industries will be more adaptable to achieving success. East Asian companies have been influenced by the tradition of Confucianism, which works as an ideology underpinning social structures

(House et al. 2004). Because of this unique cultural characteristic, Korean firms tend to be constructed in hierarchically (Chen 2004). Also, Korean businesses have the characteristic of strong internal coherence through internal communication and coordination as a way of managing people (Hemmert 2008).

When it comes to the construction of organisational culture and social business contexts, owner-managers generally play an important role. In particular, owner-managers of Korean firms have a lot of power over deciding the direction of strategy, as well as how to apply business strategies in their business (Chang 2003). Although the owner-oriented decision-maker can create an uncomfortable atmosphere in the organisation, Korean owner-managers' fast decision-making mean risk-taking strategies can be adopted quickly. This risk-taking approach of Korean firms enhances innovation capability, and thus Korean firms have moved from a latecomer position to a leadership position globally (Shin and Jang 2005, Hemmert 2008).

According to the study by Rhee et al. (2010), managers with a market orientation and entrepreneurial orientation focus on learning to improve the performance of businesses. That is, owner-managers' positive perspectives for learning play an important role in invoking the innovation, which improves performance. Likewise, with the power of owner-managers, it is possible to have innovation, employ technology-oriented employees, and link with external professions (Kim and Ha 2010). Also, Yun et al. (2016) asserted that the adoption of the open innovation strategy was critical to achieving the sustainable growth of SMEs, overcoming the limitations of resources and human resources of Korean IT SMEs. That is, given the crucial role of owner-managers' perspectives to do the decision-making of SMEs, their strategic decisions can be significantly associated with productivity and the performance of firms.

The business factors of organisational culture and human resource management (HRM) are also key elements in the performance of human resources. East Asian firms have a strong cohesiveness between managers and employees, which facilitates aggressive strategies to overtake competitors in the technology sector (Hemmert 2008). Korean society is regarded as collectivistic (Cha 1994). In this collectivistic culture, the managerial styles of owner-managers tend to focus on finding a way to achieve group

activities rather than individual actions. Therefore, the organisational structure of Korea is referred to as a hierarchical structure. Modern businesses are rapidly changing, and this organisational culture can result in conflict between members. Hence, consideration of corporate governance structure can be worthwhile for improving organisational performance.

To sum up, the factors influencing the business success of SMEs have diverse aspects and attributes. Many factors can be mentioned with similar patterns across the world. However, unique national advantages also exist in the business field, and different national business environments affect the prosperity of business. Also, as Porter's (1990) study shows, business factors are strongly associated with policy effects, and government policies can make a new market as well as encourage firm creation directly or indirectly. In the next section, Korea's policy support for SMEs is examined by classifying it as entrepreneur policies for start-ups and the SME policies for growing firms.

3.5 Policy support for high-tech SMEs in South Korea

The Korean economy became one of the most innovative in the world through a combination of policy-driven science and technology investments with market-driven business strategies (Gupta, et al. 2013). Through various acts of parliament, the South Korean government founded several SME policy institutions and agencies with a variety of functions to support SMEs. The main organisations supporting SMEs in South Korea which were founded by government acts¹¹ include the Korea Credit Guarantee Fund (hereafter KODIT), the Korea Technology Finance Corporation (hereafter KOTEC), and the Korea Technology and Information Promotion Agency (hereafter TIPA). KODIT supplies credit guaranteed funds to SMEs by assessing their business potential, while KOTEC assesses the valuation of technology to support SMEs. The TIPA implements

¹¹ KODEC (Korea Technology Finance Corporation Act.)

Available: https://elaw.klri.re.kr/kor_service/lawView.do?hseq=47798&lang=ENG [Accessed: 24 May 2019], KODIT (Credit Guarantee Fund Act.

Available: https://elaw.klri.re.kr/kor_service/lawView.do?hseq=44431&lang=ENG [Accessed: 24 May 2019]), TIPA (Act on the Promotion of Technology Innovation of Small and Medium Enterprises.

Available: https://elaw.klri.re.kr/kor_service/lawView.do?hseq=45606&lang=ENG [Accessed: 24 May 2019]).

government R&D schemes with subsidies to help SMEs achieve their full technological ability.

The relevant department in the South Korean government is the Ministry of Startups and SMEs (MSS), which manages policies according to purpose: financial support, R&D support, export support, marketing support, labour support, firm creation support, and human resource management support (South Korean Government 2018a). This section examines the policies relevant to entrepreneurs and start-ups, and the policy that concentrates on encouraging SMEs to achieve competitive advantages via innovation and financing.

The Korean government implemented 288 central government schemes and 1,059 local government projects in total for SMEs in 2017 (Jones and Lee 2018). These policies have been configured according to the size and age of SMEs. At the beginning of a business, entrepreneurs need appropriate business places and members for their business. At the same time, they face difficulties with diverse factors, such as financing, their business model, and the founding process. Therefore, the South Korean government supplies incubators, which supporting business places for SMEs less than three years old (South Korean Government 2018a). In the case of financial support, government-related agencies such as KODIT and KOTEC support SMEs by credit guarantee funding. When it comes to firm creation, the South Korean government enhances the new firm creation of technology-oriented entrepreneurs because the government perceives technology-oriented firms as being a key player of economy growth. Indeed, the South Korean government launched the Tech Incubator Programme for Start-ups (hereafter TIPS¹²) in 2014 to encourage high-tech based entrepreneurs who had been in business for less than seven years. TIPS were modelled from the technological incubator (TI) programme of Israel to support technology start-ups. This programme is referred to as accelerator investment-driven TIPS.

Many SMEs are faced with a lack of human resources because of relatively higher employee turnover. The overall average turnover rate of SMEs in South Korea was 4.8%

¹² TIPS (Tech Incubator Programme for Start-ups) Available at: <http://www.jointips.or.kr/global/> [accessed: 26 May 2019]

per annum from 2010 to 2017 compared to larger firms' one of 3.5% per annum (South Korean Government 2018d). Employees tend to search for better conditions, high wages and a good welfare package. As a consequence, the government suggested a new policy in 2015 to support SMEs called *Naeil Chaewoom Gonje*, which is aimed at the retention of skilled people's jobs for at least three years through additional rewards (South Korean Government 2018a).

Through the job retention of high-skilled people, SMEs are able to concentrate on innovative activities to achieve competitive advantage in the market. The South Korean government has implemented diverse policy measures to stimulate R&D activities and facilitate the innovation of SMEs: corporate tax reduction for the expenditure on R&D, human resource development and related issues. (Chung 2011). The amount of South Korean government support for R&D was ranked as being at the highest rate as a share of GDP in OECD countries in 2016 (OECD 2017c) and the government budget for this R&D support is about ₩750 billion (£500 million) in 2018. For the R&D support of SMEs, the South Korean government classified R&D programmes into three categories: the individual R&D programme, the cooperative R&D programme and R&D resource support (South Korean Government 2018a). In particular, the South Korean government encourages SMEs attempting cooperative R&D with external institutes in order to support technology acquisition, as well as acquire solutions that reduce practical difficulties (Yoo et al. 2018). Furthermore, policy support for SMEs has been identified in local policies and central policies. Some regional policies are linked with government policies, and others work independently. Indeed, government support for SME innovation has resulted in multiple policies at the regional and national levels. Doh and Kim (2014) asserted that the national government needs to empower local governments to apply appropriate policies promoting SMEs. Each local area has different business environments and human resources and, thus, policy implementation reflecting local characteristics may contribute to improving the business performance of SMEs.

On the other hand, entrepreneurs are required to raise finance to invest, maintain and expand their businesses. The innovation activities of SMEs also need sufficient financing to develop new products and improve business performance. Doh and Kim (2014) found that financial support for innovation activities is positively associated with patent

acquisitions and new design registrations of local SMEs in South Korea. That is, financing contributes to diverse business factors such as commercialisation, the strength of marketing and recruiting high-skilled people. The South Korean government introduced various financing schemes which are mainly structured by guaranteed funds, except for R&D subsidies. Both KODIT and KOTEC play a significant role in supporting SMEs in financing. Similarly, many governments around the world use credit guarantee policies to support SMEs (Kang and Heshmati 2008). Guaranteed loans by the public sector mainly support the survival and growth of start-ups and SMEs involved in vulnerable business risks (Riding and Haines 2001).

However, firms taking government guaranteed funds tend to rely on public investment rather than individual expenditure for their business. Santarelli and Vivarelli (2002) found that new firms receiving public funds show a higher failure rate than companies which do not get public loans. Likewise, Kim (2005) reported that the performance of SMEs has an insignificant relation to credit guaranteed policy loans. In spite of some arguments about the impact of guaranteed funds, Kang and Heshmati (2008) found that the South Korean credit guarantee policy has a positive influence on survival even though the impact of the amount of credit guarantee is not clear. Oh et al. (2009) also evaluated the credit guarantee policy, and they found a positive effect from the policy on the sales growth and employment growth of South Korean SMEs between 2001 and 2002. Although there are arguments concerning the efficiency of the government-guaranteed fund, the South Korean government perceives its importance and the necessity of guaranteed funds for SMEs. As a result, the South Korean government operates the second-largest amount of credit guarantees in the OECD, at 3.8% of GDP in 2016 (Jones and Lee 2018).

Furthermore, given the contribution and the obligations of policymakers with regard to policy implementation, their roles are referred to as a critical segment for improving policy efficacy. Also, the government uses pilot policies to introduce new policies as a means of improving policy efficacy. Indeed, the South Korean government implemented a training consortium project as a pilot policy to strengthen the human resources of SMEs between 2001 and 2002 after the financial crisis in 1997. South Korean SMEs

attended this training programme for their employees and, as a result, their productivity increased (Lee 2006).

To sum up, the South Korean government has developed various policies reflecting the demand of entrepreneurs. Policymakers have reported and analysed various policy results to improve efficacy. As a result, SMEs have been able to use a wide range of policy schemes in adapting their businesses. Government policy continues to evolve via diverse perspectives and market trends. Therefore, given the critical role of policy support for the growth of SMEs, entrepreneurs and policymakers need to exchange their views on the policy impacts.

3.6 Summary

The South Korean industry has a high level of value-added in the ICT sector, which is mainly comprised of technology-based hardware and software firms. From the small size dataset of one credit rating agency in South Korea, this chapter confirmed that both the size and age of firms affect growth patterns in employment and revenue. The South Korean government is also monitoring the contribution of these industries to job creation, and the policies focus on how job creation is enhanced overall. Therefore, policymakers not only encourage new firms' entry to the market but support job stability through several policies.

When it comes to the sample of SMEs, South Korean companies usually tend not to participate in individual research, and, thus, there are few empirical studies reflecting business diversity and employees' commitment to their companies (Cho and Mor Barak 2008). Given the diversity of stakeholders related to the growth of SMEs, the consideration of various perspectives on factors influencing the growth of SMEs could strengthen the reliability of research. As a consequence, with regard to the performance of South Korean ICT SMEs, it is necessary to consider the critical factors influencing the sustained growth of high-tech SMEs from the perspectives of stakeholders, such as owner-managers, policymakers and employees. The next chapter illustrates the research methodologies for collecting these data from stakeholders and the analysis approach used.

CHAPTER 4 METHODOLOGY

4.1 Introduction

Many studies on the high growth of SMEs have discussed a number of determiners and influential factors through the investigation of owner-managers, policymakers and employees, as discussed in Chapter 2. They use various techniques to conduct research with quantitative or qualitative data. Researchers have diverse views on investigating and interpreting data based on their perspectives. The researchers' perspectives of socially existed realities can be categorised as being objective (reality exists independently) and constructivist (realities are socially constructed) (Neuman 2003). Researchers are identified as positivists and interpretivists according to the way in which they understand social realities. Positivists have a stance in which reality is objectively given and can be measured with properties (Antwi and Hamza 2015), while interpretivists believe that reality is socially constructed based on specific knowledge (Willis 2007).

Although research approaches vary by purpose, many business research approaches have a pattern of observing social actions and phenomena. Indeed, most studies about entrepreneurship and business tend to take an objectivist stance (Holden and Lynch 2004; Leitch et al. 2009).

Constructionism, positivism, interpretivism and critical realism understand social action differently, according to the characteristics of the research and the data (e.g. Fleetwood 2005; Leitch et al. 2009; Antwi and Hamza 2015). Each study adopts a research philosophy that reflects the researcher's perspective and the research objectives.

This study examines the various perspectives of stakeholders such as owner-managers, policymakers and policy practitioners, and employees, to discern the factors influencing the sustained growth of high-tech SMEs in South Korea. In other words, it explores the interactions between members and the external relationships with stakeholders to find the answer to the research question: What factors underpin the sustained growth of high-tech SMEs? This study adopts a critical realism stance, which proposes that there are multiple perceptions making up a single reality and believes that knowledge is

produced by the confrontation between hypotheses and statements (Healy and Perry 2000; Jessop 2005). As a result, this study examines various individual perspectives underpinning the consideration of socially constructed actions between social actors. Also, a mixed-method approach is taken to explore the attitudes and concerns of stakeholders to discern the various factors regarding the sustained growth of high-tech SMEs. The remainder of this chapter illustrates the research philosophy, the methodology, the data collection and analysis and the ethical considerations taken.

4.2 Research philosophy

The research philosophy can be described as the process of developing the research concepts and developing new knowledge through considering data from social actors. Many studies have taken various perspectives on social phenomena and the behaviour of social actors. With this in mind, research philosophy is considered in the light of ontology and epistemology. Ontology is the study of the structure of reality and the nature of existence (Crotty 1998). Ontology can be defined as the nature of the world and what we know about it (Ritchie 2013). Epistemology generally describes the assumptions of the nature of knowledge which we have made (Scotland 2012). Bryman and Bell (2015, p.26) define epistemology as ‘an issue concerning the question of what is (or should be) regarded as acceptable knowledge in a discipline’. In other words, the view of ontology is about the perspective of realities existing in nature, and the view of epistemology is about how we interpret the realities we have recognised. Therefore, this section discusses the various perspectives of research philosophy and the particular course taken in the current study.

4.2.1 Ontology

Ontological views of research paradigms can be broadly identified as objectivist and constructivist (subjectivist) (Holden and Lynch 2004; Bryman and Bell 2015). Objectivists believe that there is an independent reality, while constructionists take the view that reality is made by social processes (Neuman 2003). In other words, objectivism takes the stance that social phenomena and their meanings exist independently of social actors. In contrast, constructivism describes how social phenomena and their meanings

are built continually by social actors (Sutrisna 2009). That is, the objectivist approach is derived from the sense of understanding of natural science, including hypothesis testing, causal explanations and modelling (Al-Saadi 2014). Bryman and Bell (2015, p.32) define objectivism as 'an ontological position that asserts that social phenomena and their meanings have an existence that is independent of social actors'. Bryman and Bell (2015) point out that social actors as objective entities are situated in an external reality.

Constructivism (also referred to as constructionism) holds that social phenomena and their meanings are continuously formed by social actors (Bryman and Bell 2015). That is, constructivists take the view that truth is relevant to individuals and communities (Cupchik 2001). Also, constructivists hypothesise that human action starts from the stimulation by actors' behaviours rather than as a reaction to external factors (Gaglio 1997). Indeed, the constructivist perspective holds that the outcomes of social construction arise from the interpretation of subjective views (Wood and Mckinley 2010). Likewise, Lindgren and Packendorff (2007) mention that social constructionism is about pluralism in entrepreneurship research reflecting knowledge of interaction procedure and intricate description. Concerning the application of constructionist theory to business analysis, some previous studies have argued that business opportunities come about independently from entrepreneurs (Shane and Venkataraman 2000; Shane 2003), but the constructivist perspective contend that opportunities are formulated by the processing of social construction with the entrepreneur (Baker and Nelson 2005).

However, organisational members exist independently and also have an interdependent relationship to create trust and control in the organisation (Reed 2001). With this in mind, both objectivist and constructivist approaches find it difficult to consider various perspectives between social actors. Given the relationship between business stakeholders such as owner-managers, business partners and employees, an entrepreneurship study needs to consider a wide range of subjective views and the process of how to do business. Indeed, critical realism views that social realities exist independently at the same time; they can be constructed and interpreted by social actors and social scientists within various contexts (Reed 2001; Wikgren 2005). The world of critical realism is comprised of not only various events and experiences but also

structures and tendencies, regardless of one's awareness of them (Patomäki and Wight 2000). That is, ontologically, critical realism takes a stance that is able to distinguish between realities, actual objects and empirical outcomes (Jessop 2005).

In other words, each research philosophy takes various views on the realities that exist in society. Also, all research paradigms have a different approach to understanding social realities in exploring research aims. The next section discusses the epistemology of various research paradigms for socially existed or constructed objects.

4.2.2 Epistemology

Epistemology is the nature of the relationship between researchers and the process of knowledge development (Bryman and Bell 2015). That is, epistemology also exists as a relationship between the knower and that which is known (Antwi and Hamza 2015). As a result, the ways of developing knowledge are identified as both positivist and interpretivist, depending on the research approach used to develop knowledge.

Indeed, the realist and objectivist ontology in a positivist paradigm underpin the research methodology with objective variables and testing hypotheses (Marczyk et al. 2005), whereas, interpretivism considers reality as having multiple attributes in terms of a constructivist ontology (Holden and Lynch 2004).

Objectivists believe that people and society exist independently, and that there are causal laws which explain the patterns of social behaviour (Easterby-Smith et al. 1991 cited in Holden and Lynch 2004, p.7). Also, positivist research uses quantitative (extensive) research strategies, and positivists take the view that researchers must be independent and that the data should be measured by objective methods (Bahari 2010). With this in mind, objectivism holds that knowledge must be robust and have reliability with well-established and documented outcomes for positivist research (Leitch et al. 2009). As a consequence, in positivist epistemology, the role of human agency is negated and can be meaningless (Bracken 2010). As a result, positivist researchers attempt to explain social phenomena by regularities and causal relationships within statistical data (Bahari 2010). Hence, positivism takes a narrow view when regarding social phenomena based on variables and measurements.

The core belief of the interpretivist paradigm is socially constructed through understanding a specific context (Willis 2007). Also, interpretive research takes a stance closer to a subjective view rather than an objective view (Thanh and Thanh 2015). Concerning the research purpose, interpretivism is aimed at understanding how reality is socially constructed, and thus, this research approach can use subjective and objective methods (Willis 2007). As a result, there is an argument that interpretivist perspectives are appropriate to the study of marketing and human resource management (Saunders et al. 2007). In particular, interpretivism has a relativist stance, and interpretivist research illustrates how differently people or groups understand reality (Rynes and Gephart 2004). Thus, interpretivist research is research without objective measurements and has no interest in the generation of new theory (Antwi and Hamza 2015).

Unlike positivism and interpretivism, critical realism takes a modified objective view, in which the world is structured, differentiated and changing within the broad perspective of postpositivism (Bisman 2010). Postpositivism expanded this narrow perspective of positivism to explore real-world problems (Henderson 2011). Positivism and postpositivism are realist in their perspectives (Rynes and Gephart 2004). Pure realism takes a view that reality can be understood, but critical realism, which is a specific form of realism, has the standpoint that social actions are created by recognising and understanding the socio-cultural behaviours of social actors (Bryman and Bell 2015). In particular, the research purpose of critical realists is to develop explanations and understandings at an in-depth level rather than to generalise laws (positivism) or to identify the experiences or beliefs of social actors (interpretivism) (McEvoy and Richards 2006). Also, critical realists believe that human knowledge of social components is always fallible because it has the characteristic of transition-like knowledge (Scott 2007).

Although postpositivism also recommends an objective view of social phenomena the same as positivism (Ryan 2006), critical realists have multiple perceptions that can be changed for a single reality (Healy and Perry 2000). In other words, critical realism takes the view that knowledge is produced from the confrontation between hypothetical testing and evidential statements (Jessop 2005). Each research paradigm has different characteristics, making particular arguments for different research results. Given the

characteristics of the research aim and the attributes of the sample groups, critical realism is used to describe the various views of the social actors.

4.2.3 Research philosophy of this study

This study is aimed at finding the factors influencing the sustained growth of high-tech SMEs through an investigation of the stakeholders' perspectives on the relevant business factors. Although each research paradigm has a reasonable view, no one suitable research philosophy exists for all studies. That is, the research philosophy can be perceived as a signpost to introduce the direction of exploring the research subject, and its aspect has been decided by the research purpose and the attributes of the data. Table 4.1 provides an outline of the research paradigms discussed in this section.

Table 4.1 The research paradigm

	Positivism	Postpositivism	Interpretivism
Ontological assumptions	Objectivism/Realism: Reality is a concrete structure.	Critical realism: Reality is a single and mind-independent reality with multiple perceptions.	Subjectivism/Constructionism: Reality is a process of human imagination with multiple realities.
Research method	Hypotheses or proposition with a quantitative approach	Mixed methods with qualitative and quantitative approaches	Interviews and observation with a qualitative approach

Source: Author, based on: Healy and Perry (2000); Rynes and Gephart (2004); and Bahari (2010).

Of those research paradigms discussed above, the critical realism position describes how a social solution is made up of various variables, and a mixed methodology is based on critical realism perspectives (Maxwell and Mittapalli 2010). This thesis explores individual perspectives based on how social actions are built by social actors having various relationships with each other. Also, this study examines the perspectives of stakeholders through their statements. It takes a critical realist stance and the research

methodology adopts a mixed-methods approach to analyse both qualitative and quantitative data. The ontological three domains of critical realism could be stratified as the actual, the real, and the empirical (Bhaskar 1975). The real includes objects and structures with causality between events, the actual is a subset of the real including events generated from various mechanisms, and the empirical is the subclass of observable and experienced events (Zachariadis et al. 2013). In this study, the adoption of the mixed-method approach underpins understanding and interpreting levels of the real and the actual through combining qualitative analysis and quantitative analysis with substantial empirical data. As a consequence, the next section discusses the research methodology.

4.3 Research methodology

This study has taken a mixed-methods approach to explore variables, which are the components of social phenomena relevant to business, and the perspectives of social actors in relation to those variables. Hence, for this study, three groups were contacted for data collection through semi-structured interviews and an online survey.

The research methods can be identified by the research context and the researchers' biographies (Brannen 2005). These research methods can be classified according to qualitative and quantitative research methods (Sogunro 2001): a qualitative research method collects the data through the active interaction with the sample population and uses an interpretive analysis through themes; whereas the quantitative research method uses an online survey for collecting the data, which is analysed statistically.

Creswell (2014, p.3) defined qualitative research as 'an approach for exploring and understanding the meaning individuals or groups ascribe to a social or human problem'. Also, Yilmaz (2013) has discussed how qualitative research is an interpretive approach to studying and understanding people, social situations, and social actions, with descriptive data. This qualitative research is associated with the constructivist paradigm via the interpretation of narrative data (Maxwell 2012). On the other hand, Creswell (2014, p.3) has defined quantitative research as 'an approach for testing objective theories by examining the relationship among variables. These variables, in turn, can be measured, typically on instruments, so that numbered data can be analysed using

statistical procedures'. That is, quantitative research describes social phenomena by the mathematical methods relevant to the statistics and develops universal laws with statistical measuring in terms of an objectivist epistemology (Yilmaz 2013).

Although both methods are used in many studies as the various research purposes, each method has difficulty in incorporating all social phenomena. For example, Brannen (2005) illustrated how qualitative studies focus on the meaning, but quantitative studies highlight concerns of behaviour. That is, they cannot independently fully support social research. Therefore, a mixed-methods approach could complement a lack of evidence when the researcher uses only one method to study social phenomena. Also, a mixed-method approach uses both types of data in the same study, and thus the characteristics of both research approaches can be combined to explore the same subject. Tashakkori and Creswell (2007, p.3) defined this mixed-method research as 'research in which the investigator collects and analyses data, integrates the findings and draws inferences using both qualitative and quantitative approaches'.

Furthermore, methodological triangulation is commonly used to facilitate the validation of data by verifying both types of data from diverse sources, such as interviews, observations and surveys (Denzin et al. 2006; Leech and Onwuegbuzie 2007). Likewise, this study uses interviews and survey to collect the data and to explore the various perceptions of the respondents of the factors related to the growth of companies. Also, this study compared parts of the results of the interview questions and the survey questionnaires. That is, this study adopted the methodological triangulation method underpinning the mixed-method approach. The study states the research questions in Figure 4.1 as part of the process of achieving the research purpose.

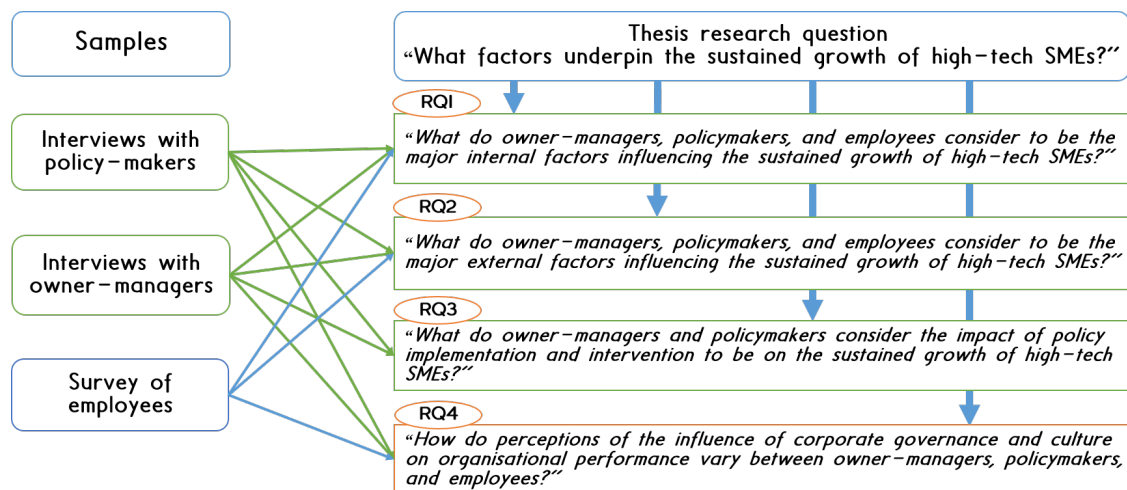


Figure 4.1 Research samples and the research questions

Source: Author

4.4 Data collection

The research data were collected in two ways from three sample groups: semi-structured interviews with seventeen owner-managers, semi-structured interviews with eighteen policymakers, and an online survey of the employees working in the companies of the seventeen interviewed owner-managers. The data comprised various individual perspectives on the factors influencing the sustained growth of high-tech SMEs. These data were collected by ‘purposeful’ sampling (Patton 2015) to explore specific stakeholders’ perspectives on the growth of high-tech SMEs. Patton (2015, p.140) referred to ‘purposeful’ sampling as ‘the logic and power of qualitative purposeful sampling derives from the emphasis on in-depth understanding of specific cases: information-rich cases. Information-rich cases are those from which one can learn a great deal about issues of central importance to the purpose of the research’. That is, with purposeful sampling, it is possible to enrich the data of participants’ experience and various cases related to the objects of interest (Palinkas et al. 2015). Therefore, interview sampling was conducted by purposeful sampling. Concerning the sampling for the survey, Teddlie and Yu (2007) discussed how probability sampling underpins a quantitatively oriented study by investigating a large number of people in a specific group. As a result, the survey took probability sampling to investigate the group of employees. All participants voluntarily participated in this study, and the data collection was carried out in April, May and October in 2018.

4.4.1 Semi-structured interviews with seventeen high-tech SME owner-managers

The owner-managers of this study were founders and CEOs of high-tech SMEs relevant to the ICT industry, as discussed in section 2.2.2 and in Chapter 3. Owner-managers of these companies were contacted through the author's network, and seventeen out of twenty owner-managers contacted agreed to participate in this study. All of the participants' companies showed a relatively successful business pattern compared to many other SMEs because they had survived in and grown their business for over seven years. Although these samples could cause survivor bias (McGrath 1999), a wide range of experiences and the individual opinions of participants could cover this bias because their interview data includes the cases of failed businesses in the past.

In-depth semi-structured interviews were carried out with seventeen owner-managers via face-to-face interviews during the fieldwork phase (between 30 Mar and 14 April 2018). Each interview took fifty minutes on average. All interview questions had the same purpose, but the pattern and the order of questions were different depending on the interview circumstances. Interview questions were classified into four main issues: factors influencing growth; organisational culture and management style; growth and business networking; perceptions of external environments and policy support; and empowerment and flexibility (see interview topic guide for owner-managers, Appendix 1). For the interviews with owner-managers, the information sheet and the consent form were sent by email before each interview and the consent form was received by email with an electronic signature. The samples were identified as *SG* and *SE* to fit the definition of sustained growth high-tech SMEs in section 2.2.3. Table 4.2 describes the information of the interview participants and their companies.

Sustained growth high-tech SMEs SG: 'SMEs having a relatively higher CAGR of employment growth than the industrial average CAGR for the past six years.' (sustained growth firm, but without six years of continuous employment growth).

Sustained employment growth high-tech SMEs SE: 'Sustained employment growth high-tech SMEs for six consecutive years in the study period.'

Table 4.2. Owner-managers' profiles

Participant code	Gender	Company age in 2017	Background	Type of company (KSIC 2017)
A(SE)	Male	22	Engineer	Manufacturer of fluid power equipment
B(SE)	Male	21	Engineer	System software publishing
C(SE)	Male	13	Engineer/ Marketer	Product design services
D(SE)	Male	17	Engineer	System software publishing
E(SE)	Male	15	Manager/ Marketer	Application software publishing
F(SE)	Male	15	Engineer/ Marketer	Manufacturer of electric lighting fixtures for exhibition and advertisement
G(SE)	Male	13	Engineer	System software publishing
H(SE)	Male	13	Engineer	System software publishing
I(SE)	Male	7	Engineer	System software publishing
J(SE)	Male	7	Engineer	Manufacturer of optical instruments and photographic equipment
K(SG)	Male	7	Manager/ Marketer	System software publishing
L(SG)	Male	19	Manager/ Marketer	Manufacture of other plastic products
M(SG)	Male	17	Manager/ Marketer	Application software publishing
N(SG)	Male	18	Manager/ Marketer	Application software publishing
O(SG)	Male	18	Engineer	Manufacturer of smart cards with magnetic stripe and chips
P(SG)	Male	14	Engineer	Mobile game software publishing
Q(SG)	Male	11	Manager/ Marketer	Graphic design services

*Korean Standard Industrial Classification 2017 (KSIC 2017)

Source: Author adapted from the financial statement and interviewees' information

In terms of the proportion of participants by gender, all participants were male owner-managers because there was a limitation in collecting the data of female owner-managers due to less than 15% of female owner-managers among Korean high-tech SMEs (South Korean government 2018f). It is recognised that the views and experiences of male and female owner-managers may be different, and the inclusion of female participants would have enriched the analysis. Although small groups of female owner-managers could have specific management skills as male owner-managers of similar

industrial sectors, they might generally have similar experiences or perspectives on the critical factors enabling their company's sustained growth because they may face common business environments.

4.4.2 Semi-structured interviews with eighteen policymakers

Policymakers in this study were working for a department in the South Korean government supporting SMEs. Sampling for the interview of policymakers was considered to reflect the relevant perspectives on the growth of high-tech SMEs. Twenty-two policymakers were contacted about research participation by email and eighteen respondents agreed to participate. In accordance with participants' requests with regard to the time difference between the UK and South Korea, the semi-structured interviews were carried out by email, VOIP and internet-based messenger programs. Participants were classified by their current responsibilities and working place: policymakers in head office are coded **PM**; policy-practitioners in regional offices are coded **PP**.

The semi-structured online interviews assisted the author in contacting the research participants regardless of the limitation of time and space (Salmons 2010). In-depth interviews via email with open-ended questions can be conducted via multiple electronic message systems (McCoyd and Kerson 2006). Despite the limitation of being unable to catch sensory and emotional cues from respondents in email interviews (Nehls 2013), the current study complemented the interviews with various, follow-up communications such as emails and phone calls to add more information after the initial interview.

Fourteen participants wanted to do a text-based interview rather than an interview using a VOIP phone. Therefore, two different types of interview instruments were applied. Text-based online interviews with an email and messenger platform were used to interview fourteen policymakers, and VOIP phone interviews were carried out on four participants between October 2018 and November 2018. This thesis sought to garner policymakers' perspectives on the factors influencing the sustained growth of SMEs, and what perspectives policymakers had regarding the impact of policy on high-tech SMEs. Therefore, the interview questions comprised three main category questions: individual

perspectives on the factors influencing the sustained growth of high-tech SMEs; questions about the roles and contributions of policymakers to the growth of SMEs; views on their attitudes and the efforts at developing policies in their positions and the factors influencing their behaviours in their organisation (see interview topic guide for policymakers, Appendix 2). The information on the interview participants is described in Table 4. 3.

Table 4.3. Interviews with policymakers (18 interviewees)

Participant's code	Gender	Grade*	Period of service (2017)
PM1	Male	5	12 years
PM2	Male	5	16 years
PM3	Male	5	14 years
PM4	Male	5	12 years
PM5	Female	6	14 years
PM6	Male	5	15 years
PM7	Male	5	14 years
PM8	Male	6	9 years
PM9	Male	4 (Head of department)	14 years
PM10	Male	4 (Team leader)	11 years
PP1	Female	6	8 years
PP2	Male	5	12 years
PP3	Male	6	14 years
PP4	Male	6	11 years
PP5	Male	6	6 years
PP6	Female	7	6 years
PP7	Male	7	5 years
PP8	Male	8	5 years

*PM: Policymaker; PP: Policy Practitioner

*Grade: The level of responsibility of South Korean civil servants from 1 (the highest responsibility) to 9 (the lowest responsibility)

Source: Author adapted from interviewees' information

4.4.3 Online survey of the employees across seventeen SMEs

The online survey of the employees in this research was organised to garner their individual opinions on their particular company and the firm's growth. Survey

questionnaires were designed with reference to the Workplace Employment Relations Survey UK, 2004.¹³ Forty questionnaires covered content on demographic information, employees' attitudes to their workplace, their perspectives on management style and their perceptions on the growth of the company (see survey questionnaire for employees, Appendix 3).

The survey measured employees' opinions with a Likert-scale by agreeing or disagreeing with each question on the questionnaire. The Likert-scale is a psychometric scale that has multiple categories from which respondents choose to indicate their opinions, attitudes or feelings about a particular issue (Nemoto and Beglar 2014). In a Likert scale, when a midpoint is offered on obscure topics, many survey respondents will choose it because they tend to align with a social desirability element even though they had no real basis for making the choice. (Johns 2005). Many survey designers use 5-point or 7-point scales with a midpoint (balance). But there are some arguments regarding the midpoint on the scale in terms of the tendency of the responses. The midpoint becomes the choice of respondents who want to express ambivalence within the questionnaire. The midpoint can be used differently to attract indifferent responses (Schuman et al. 1981; Ayidiya and McClendon 1990). Johns (2005) suggested that there are two recommendations for using the midpoint in the Likert Scale for the survey. When the topic is unfamiliar, designers should offer a midpoint, whereas, when social desirability pressures are intense, designers should omit the midpoint. Also, Nemoto and Beglar (2014) argued that the neutral categories are inherently illogical because the results of the survey are changed depending on the midpoint and cannot be measured appropriately in a sense.

This study used a questionnaire to check the level of contributions to the growth of the companies according to characteristics such as age, career and current level of responsibility. That is, the questionnaires were aimed at finding clear answers to

¹³ 2004 Workplace Employment Relations Survey (WERS 2004) describes the employment practices of SMEs. This survey surveyed both managers and employees in their workplaces. As a result, the survey supplied information on employment relationships. This survey covered recruiting and training, communication, representation of employees, payment systems, equal opportunities, flexibility and performance, and employee attitudes to work.

employees' attitudes and perceptions. Therefore, the survey did not include a midpoint on the measure. The survey was comprised of forty questions, including two unlimited comment fields to investigate participants' individual opinions on the growth of their companies in detail.

The survey was carried out on employees working in seventeen high-tech SMEs in this study. The online survey was conducted via an internet-linked address (Bristol Online Survey) in order to secure the anonymity of the employees over the period between 22 April and 9 May. However, six owner-managers asked to extend the period of the survey, and the survey was extended until 12 May.

The survey population was 1,491 employees in seventeen companies, with 366 employees participating. Table 4.4 illustrates an overview of the survey results.

Table 4.4. Overview of the online survey

Firm code	Employees (2017)	Participants	
		Count	%
A(SE)	42	27	64
B(SE)	185	46	25
C(SE)	14	13	93
D(SE)	50	30	60
E(SE)	47	4	9
F(SE)	66	6	9
G(SE)	207	52	25
H(SE)	79	41	52
I(SE)	131	42	32
J(SE)	10	7	70
K(SG)	11	4	36
L(SG)	8	1	13
M(SG)	129	19	15
N(SG)	149	13	9
O(SG)	278	31	11
P(SG)	10	7	70
Q(SG)	75	23	31
Total	1491	366	

Note: Average rate of participants 25% Source: Author – adapted from the online survey result

4.5 Data analysis

The data for this thesis comprised two types of data: qualitative interview data and quantitative survey data. The data analysis for qualitative data consisted of four stages: transcription of interview data; confirmation and familiarisation of the interview; selecting, focusing on, simplifying, abstracting and transforming; and coding and interpreting (Miles and Huberman 1994). The quantitative data analysis is based on the statistical data, and a hypothetical test was used to verify the data (Sogunro 2001). In this study, the thematic analysis was adopted to analyse the interview data of the owner-managers and policymakers. The analysis of the survey data was carried out using an ordered logit regression analysis with STATA software (Ver. 15.1).

The analysis for each study was done separately, but each factor can be related to the factors influencing sustained growth. Thus, this research compares and discusses each factor related to other stakeholders' viewpoints in the findings chapters. The relationship between the factors and each of the findings chapter is shown in Figure 4.2. This figure identifies by three major factors, divided into internal, external, and policy impact. In addition, it tested corporate governance theory to explore the relationship between members and their contributions to the growth of the company. The findings of employees' survey show the close relationship with internal factors.

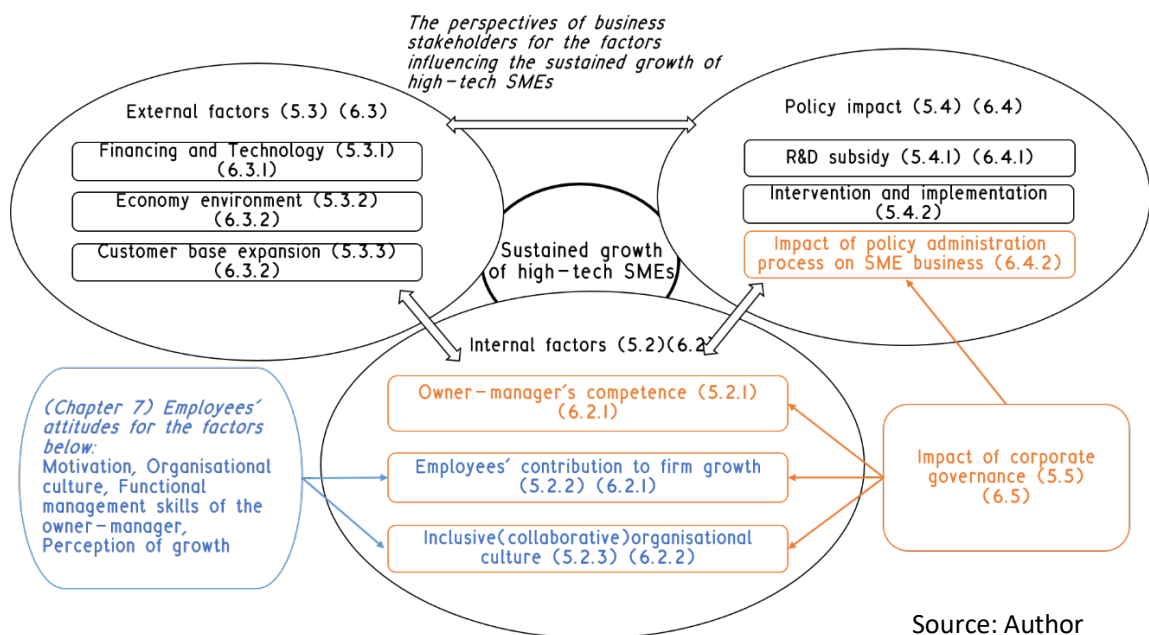


Figure 4.2 Framework of factors influencing the sustained growth of high-tech SMEs

4.5.1 Qualitative analysis of the semi-structured interviews

The interviews with the owner-managers and policymakers were carried out using a semi-structured interview technique, and both qualitative data analyses applied a thematic analysis for the qualitative interview data (Braun and Clarke 2006). Also, thematic analysis is suitable for the interpretation of social phenomenology (Fereday and Muir-Cochrane 2006). Themes were found through associating with weak constructivism perspectives (Lupton 1999) because the analysis assumed that people were related to the issues in a socially constructed way. Also, Joffe (2012) asserted that thematic analysis is widely applied in the critical-realist position. Themes are elicited from inductive approach data, phenomena and definitions of terminology, and general text data is analysed via a process of repetitions, transitions, similarities and differentiations, and categorising (Ryan and Bernard 2003). This thematic process was conducted to analyse the interview data. The analytical process started with the translation from Korean (by the author) to develop the data so that it could be understood in English. As well as linguistic translation, a degree of cultural translation was also needed to properly express South Korean business culture and concepts in English and to enable them to be judged in relation to previous studies, most of which are in English. The continuous examination of the translated interview scripts made critical analysis possible in the analysis process.

The data were identified in several fragments of text that were classified based on similar categories. In the next step, fragments of the text were into initial codes. Initial codes were merged into similar categories. Categorised themes were examined and refined as common themes, and, thus, the number of categories was reduced. In particular, each category was identified by the relevant factors influencing the growth of each company. Both groups of informants in these interviews with SME owner-managers and policymakers were interviewed by similar patterns of interview questions, leading to the codification of interview data with the same structure as well as similar headings. There are three categorised factors: internal factors, external factors, and policy impact. The internal factors included owner-managers' competence, employees' contributions, and a collaborative organisational culture. External factors treated financing, technology, economic environment, and customer base expansion.

Meanwhile, the impact of policy support was identified according to R&D subsidies, intervention, and implementation. This study also unpacked the impact of corporate governance structure on the growth of each company because members in these organisations contributed to them, and their attitudes could be affected by organisational structure.

To sum up, the interview analysis was carried out by thematic analysis and both sets of interviews have the same structure according to categorised themes and codes. From the analysis, this thesis discusses internal factors, external factors, policy support and corporate governance in order to explore the influential factors on the sustained growth of high-tech SMEs. The next section introduces the method of analysis for the survey of employees who were involved in the reviewed companies.

4.5.2 Quantitative data analysis of the online survey of the employees

The survey of the employees is aimed at examining the employees' attitudes to the growth of their companies. Despite the important role of employees, studies about the relationship between employees' individual characteristics and the growth of companies are few. As stated in section 2.3.2, employees are easily affected by various environmental elements around them in the organisation. Therefore, this survey obtained employees' individual characteristics and their perceptions of various factors relevant to the growth and the performances of the companies. As a result, this study proposes four hypotheses to test the survey results and an ordered logit regression to analyse the data.

Hypothesis 1: Certain individual characteristics of the employee are positively associated with employee motivation.

Hypothesis 2: Certain individual characteristics of the employee are significantly associated with forming a collaborative organisational culture.

Hypothesis 3: Certain individual characteristics of the employee are positively associated with the employee's awareness of the management style of the owner-manager.

Hypothesis 4: Employees' attitudes towards motivation, the organisational culture, and the management styles of the owner-managers are positively associated with their perceptions of the growth of their companies.

Sampling and variables

Individual characteristics were taken as the independent variables to consider the impact of employees' individual experiences and careers. However, this survey did not use gender as a variable because there was an unbalanced proportion of females to males, at twenty per cent to eighty per cent. Concerning the population of the sample, I was able to confirm whether each variable had outliers via checking the frequency of answers for each variable: there were no outliers for any of the variables. Therefore, the analysis was carried out on 330 respondents out of 366 respondents, only excluding those missing values for variables.

In the analysis, individual characteristics were used as the independent variables, and the dependent variables were categorised according to three relevant groups for hypotheses 1 to 3. Hypothesis 4 used the dependent variables of hypotheses 1, 2 and 3 as the independent variables. The characteristics of the independent variables and the dependent variables are illustrated in Table 4.5.

Table 4.5 Variables of the hypothetical tests

	Independent variables	Dependent variables
Hypotheses 1, 2 and 3	Age, the responsibility of the employee, whether or not the current job is with the firm, the period the employee worked for the organisation	Motivation, organisational culture, functional management of the owner-manager
Hypothesis 4	Motivation, organisational culture, functional management of the owner-manager	The responsibility of the company growth

Note: Dependent variables of hypotheses 1 to 4 and independent variables of hypothesis 4 show the attitudes of respondents towards those variables.

Source: Author

Ordered logistic regression analysis

The ordered logistic regression was carried out to validate the hypotheses of the relationship between variables that have meaningful ordered measurements. The analysis model has two stages and four hypotheses. Wrigley (1979) identified the typologies of analysis by response and explanatory variable, as can be seen in Table 4.6, which describes the response/explanatory variable typologies.

The data does not have normality of distribution, and the number of levels is six for all predictor variables. OLS regression and ANOVA were not suitable for analysing this data set because the data set used categorical levels for all response and explanatory variables.

Table 4.6 Response/explanatory variable typologies of the analysis

Response variable	Explanatory variable		
	Continuous	Mixed	Categorical
Continuous	(a)	(b)	(c)
Categorical	(d)	(e)	(f)

Source: Wrigley (1979)

Notes:

- (a) Conventional regression analysis,
- (b) Conventional regression analysis employing dummy and continuous variables,
- (c) Conventional regression analysis employing dummy variables or traditional ANOVA models,
- (d) Logistic and linear logit regression models,
- (e) Logistic and linear logit regression models employing continuous and dummy variables, and,
- (f) Logistic and linear logit models / log-linear models.

The variance inflation factors (VIF) were calculated to assess the multicollinearity as a means of comparing the robustness of the model. There is no multicollinearity between the variables if the mean VIF shows less than 10 (Patel et al. 2013). This study verified the multicollinearity by STATA for the variables of the employees' characteristics and the employees' attitudes. The result of the calculation shows that there is no multicollinearity between the variables (see multicollinearity test, Appendix 4). All of the models were analysed with STATA software with a significant of 95 per cent to check the significance between the variables. It was not necessary to measure too precisely

up to the 99 per cent level because the main purpose of this hypotheses test was to see employees' attitudes toward the growth of their companies.

This study has two different ways examining the relationship between variables in order to investigate the impact of employees' attitudes to the factors influencing the growth of companies, and the relationship between their attitudes and the employees' perceived growth.

In terms of the logit regression, if the dependent variable has binomial measurements, the analysis of the model can be carried out by a basic logistic regression. This basic logistic regression can be expressed as equation 4.1 (Allison 1999; Liu 2009):

$$\ln(Y') = \text{logit}[\pi(X)] = \ln\left(\frac{\pi(X')}{1-\pi(X')}\right) = \alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_p X_p \text{ (Equation 4.1)}$$

However, all dependent variables of this study have a sequential order with six Likert-scale measurements. When a dependent variable has more than two measures, and the values of measures have a meaningful sequential order, the ordered logistic regression can be used to analyse the data (Torres-Reyna 2012; Grilli and Rampichini 2014). This ordered logit regression can be expressed as equation 4.2 (Liu 2009) and adopted to analyse the survey data with the STATA software programme in this study.

$$\ln(Y'_j) = \text{logit}[\pi(X)] = \ln\left(\frac{\pi_j(x)}{1-\pi_j(x)}\right) = \alpha_j + (-\beta_1 X_1 - \beta_2 X_2 - \dots - \beta_p X_p) \text{ (Equation 4.2)}$$

4.6 Research ethics

An ethical approval process was required to protect the private information of participants and to avoid any impact of research participation on their present jobs. The data collection process of this thesis was reviewed during the process of ethical approval. This process was valuable for protecting private information and was also beneficial to the researcher considering the importance of securing research data.

Interviewees were informed about the research aims and objectives before participating in the interview. A consent form was also provided electronically in both English and Korean. Participants of the online survey received the information about the survey purposes via a URL provided by the interviewed owner-managers. Employees,

who opened the web address, voluntarily decided whether or not to participate in the research. All of the participants were assured that their identities would remain anonymous. Strict confidentiality in storing data has been maintained through data encryption and controlled access. The ethical approval application was submitted to the Ethics Committee in February 2018 and approved by the University General University Ethics Panel (GUEP) Committee on 29-March 2018.

4.7 Mixed-methodology and Critical Realism

Each research paradigm has specific perspectives in interpreting different types of data. Each data type also has characteristics reflecting the various social actions between social actors, quantitatively or qualitatively. The perception of positivists tends to be focused on the only objective views (Bahari 2010), and thus, there is a lack of consideration about insights of social actors in the results of social actions. Also, an interpretivist approach ought to interpret the data with an understanding of socially constructed events (Willis 2007).

Whereas, critical realism is often referred to as a middle approach between the positivism and the interpretivism, more likely it is close to the realist ontology (Archer et al. 1998). Complex social reality needs to be discussed by considering various events and thus social outcomes of the relationship between social actors would be understood by managing and understanding empirical analysis from various data. That is, the view of critical realism is not about a relationship between events but about understanding the process of the causality (Collier 1994). In other words, the perspectives of critical realism tend to focus more on generating new knowledge than positivism and interpretivism, and this new knowledge could be created at an empirical level, which is underpinning the actual and the real, with quantitative and qualitative enquiry (Zachariadis et al. 2013).

As a result, the quantitative analysis supports the process of understanding the causal mechanism between social events. Also, the qualitative data analysis uncovers social phenomena and could contribute to generating new knowledge through considering the social contexts. Thus, a mixed-method approach with the perspectives of critical realism explores and compares the relationship between observable data and socially

independent actors through the investigation of statistical causality and in-depth interviews with social actors.

4.8 Methodological limitations

Sampling and population

This study focused on the case of sustained growth high-tech SMEs which had achieved success compared to other companies. That is, the sample groups were involved in the growth of the company groups. This sampling could have resulted in the research results being limited to specific social cases. However, given the research purpose of this study, purposeful sampling was suitable for considering and discussing the various factors influencing the sustained growth of high-tech SMEs.

The population in this study was not enough to generalise the research results. In particular, specific industrial contexts restrict various perspectives for overall industrial cases. Seventeen owner-managers are also rare successful business cases. Also, policymakers are working for the department of government to support SMEs. That is, they cannot represent the public sector. The online survey was sent to the 1,491 employees of the seventeen companies, with 366 employees participating in it. The response rate of each company differed.

Data collection

The interview data of the owner-managers and the online survey of the employees were processed between April and May 2018 in order to deliver the survey URL to employees via the owner-managers. The length of time between each data collection was about a week. Therefore, semi-structured interview questions and online survey questionnaires were developed concurrently. The interview results could not be used to develop the survey questionnaires even though the questionnaires of the survey were designed with the relations between employers and employees being kept in mind.

The scheduling of the interviews of the policymakers was between October and November 2018. Before each interview, the researcher contacted them to book an appointment, and they sought a text-based online interview rather than a verbal interview via a VOIP phone. Fourteen interviewees were interviewed electronically by

email or a messenger program, and four interviewees were interviewed using a VOIP phone. As a result, the interview data did not reflect the participants' emotions and attitudes in the analysis.

4.9 Summary

This research takes a critical realist's view with a mixed-methods approach. This study collected the data from three stakeholders: interviews with seventeen owner-managers and eighteen policymakers, and an online survey of the employees (366 respondents out of 1491 employees). Interviews were held for an hour in the face-to-face interviews with the owner-managers and by VOIP phone, email or messenger program with the policymakers. Employees were asked to join in the online survey through the delivery of a survey URL by the seventeen owner-managers. The research analysed three groups of data with the thematic analysis and the ordered logit regression and found some factors influencing the sustained growth of high-tech SMEs.

Despite some sampling limitations, the current study made an effort to improve the reliability and robustness of the research through a comparison of and discussion within the sample groups (e.g. **SG** and **SE**, policymakers and policy-practitioners) and between the sample groups (e.g. owner-managers and policymakers, owner-managers and employees). Also, this study shows the outcomes of the research purpose through the interpretation of various perspectives on the specific growth patterns of high-tech SMEs. The next chapter shows how the data were interpreted and what factors this study found. The findings of each study are discussed in chapter 5, 6, and 7.

CHAPTER 5 FINDINGS: Owner-managers' perspectives

5.1 Introduction

The sustained growth of high-tech SMEs can be affected by various internal and external factors. SME entrepreneurs frequently face a lack of capital, vulnerable human resources, the uncertainty of the economy and inadequate market information while they grow their companies. In particular, founders' entrepreneurial experiences can affect critical decisions at the founding of a company. Wiklund and Shepherd (2003) found that founder-based firm-specific managerial experiences positively affect the internal competitiveness and actual growth of companies.

Through resolving various business issues owner-managers faced, high-tech SME owner-managers can experience or acquire diverse factors influencing their sustained growth. This study interviewed seventeen owner-managers of sustained growth, high-tech SMEs. Ten of these were *sustained employment-growth*, high-tech SMEs (termed **SE**, i.e. showing continuous employment growth for all six consecutive years within the study period, as discussed in Section 2.2.3). These are given the company codes 'A(SE)' to 'J(SE)'. The other seven firms were *sustained growth firms (SG)*, which show a higher CAGR than the industrial average CAGR for six years, but *without* continuous growth in employment every year. They are labelled with the company codes 'K(SG)' to 'Q(SG)'.

From the data analysis, this chapter shows the owner-managers' perspectives of both groups concerning factors influencing the sustained growth of high-tech SMEs. Figure 5.1 shows the findings divided by internal factors, external factors, policy impact, and the relationship with governance theories. Participants stressed members' abilities and their collaboration, and also, they highlighted on the importance of R&D actions and financing, and proactive strategies to the various external business environment.

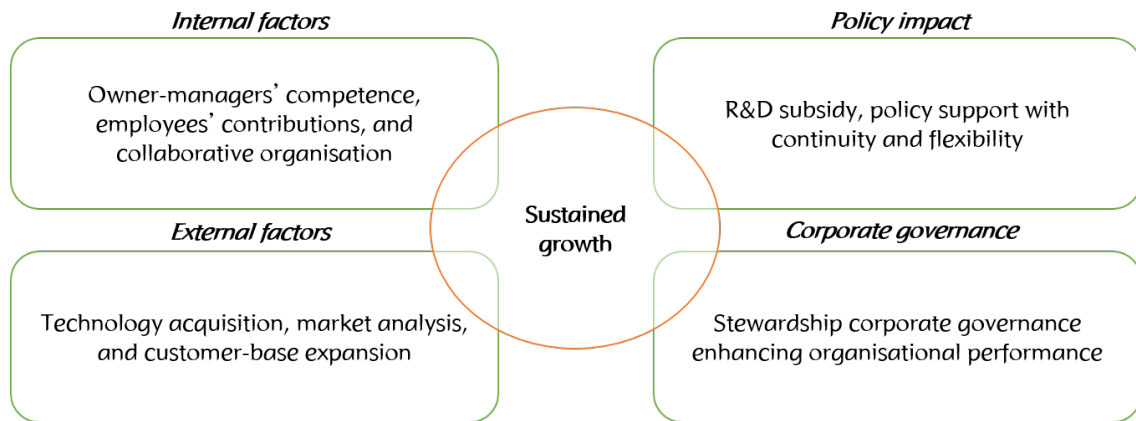


Figure 5.1 Owner-managers' perspectives for the factors influencing the sustained growth

Source: Author

One of the key findings shows the importance of competitive advantage in technology, which increases the ability for a firm to develop its products and to improve productivity. Besides, owner-managers of high-tech SMEs commonly agreed that a collaborative organisational culture positively affects business performance. There are also a plethora of factors influencing the sustained growth of high-tech SMEs, which are represented in this chapter. The findings of this chapter are also discussed with other results and the relevant literature in Chapter 8.

5.2 Internal factors

Participants tend to show the positive attitudes for the R&D actions to achieve the sustained growth and they also mentioned various strategies being able to enhance organisational competitiveness. In particular, owner-managers have perceived the cruciality of their expertise and adequate relevant experiences. They perceived the importance of employees' contributions for achievement of the sustained growth. Participants also used fostering a collaborative organisational culture as the strategy to enhance overall organisational performance. These themes are identified in the literature and Figure 5.2 illustrates the outline of critical internal factors.

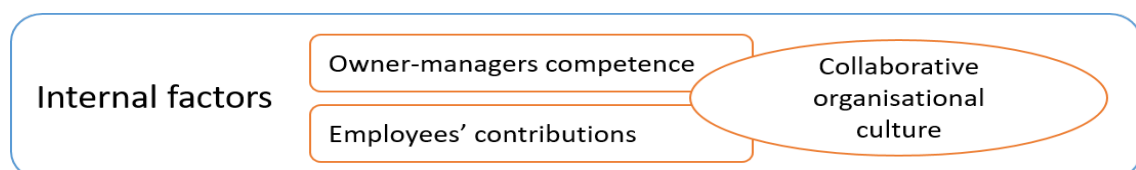


Figure 5.2 Owner-managers' perspectives for the critical internal factors

Source: Author

5.2.1 Owner-managers' competence

Owner-managers have to make many critical decisions in terms of financing, R&D and marketing while they operate their companies. As a result, they need a variety of experiences and an entrepreneurial mind as owner-managers of companies. As shown in the interviews, participants considered and adopted diverse management styles to improve their business performances.

Strategic decisions

Owner-managers decided on various strategic decisions to form their business portfolio and to concentrate on the potential markets for the growth of firms. The strategic decisions across the R&D actions relevant to marketing of products are based on the target market in the overall business process and are required to be confirmed by the owner-managers' intentions. In particular, owner-managers face various opportunities to change, and these need to reflect strategic decisions while they recognise the necessity of expanding their business and finding alternatives to their current business. That is, owner-managers have to decide many things strategically.

'My business comprises 50% of maintenance business and 50% of order-based business for the security software....For high growth, I should go to the new market I never have experienced before. To do this, I need the cash flow from the maintenance business.' (owner-manager H(SE))

'...when I entered the market, I attempted to review various business items (the potential products) in the market. After I chose the type of product, I concentrated on that. Reviewing various business items was my strategy prior to expanding my business.' (owner-manager O(SG))

Owner-managers also tended to consider what their priority was for revenue growth, profitable growth, and employment growth in order to carry out their business planning. The attributes of growth reflect the owner-managers' perspectives for their desired growth pattern. The majority of **SE** firms' owner-managers (those with continuous employment growth) tended to focus more on profitable growth to invest in for new

business (owner-manager A(SE), B(SE), E(SE), Q(SG)), whereas, most **SG** firms' owner-managers tended to pursue revenue growth to gain higher volume in order to maintain their business (owner-manager C(SE), M(SG), K(SG), N(SG), O(SG)). They agreed that investment in the future was the foundation of growth while owner-managers perceived the necessity of making sufficient profits to invest in new business. Revenue growth was not only essential to make profit but also necessary for survival in the market.

'..when our business gets a surplus from sales results, I share a third of profits with the employees, invest a third of the profits for R&D, and save a third of the profits for the future. The growth of the company is able to be achieved based on profits. Actions of R&D and sales marketing also count in terms of acquiring sufficient profits.' (owner-manager E(SE))

'Of course, I think we have to make external growth the priority in our business. Also, new firm creation is about starting something new, such as new products, new segments and a new innovative paradigm. That is growth.' (owner-manager M(SG))

In terms of views on owner-managers' desired growth, owner-managers Q(SG) and C(SE) have relatively different opinions in their groups. In terms of their different opinions, they have unique experiences which affect their perspectives on the growth of firms. Owner-manager Q(SG) managed the financing and the IPO (initial public offering) of the big company he worked in before starting his own business. Therefore, he invested in the new business in terms of the profit-making perspective of the previous business. He thought the balance sheet was one of the critical criteria to invest in for the next business. Owner-manager C(SE) had experienced 100% annual revenue growth once before when he contracted with big customers. Before that time, his business was in a steady-state for five years. After experiencing extraordinary growth, he believed this was the real growth he desired. His business is knowledge, property-based business, and he thought this type of business had to acquire stair-type growth to accumulate internal resources.

The growth of profit and annual revenue are a source of employment growth. When a company grows, it is necessary to employ new and experienced employees in order to cover the expanded business area. Owner-manager M(SG) divided his company to concentrate on the next business product and to merge the other company, which had relevant expertise, to strengthen the competitive advantage of his next business product. That is, revenue growth could stimulate investment for business growth and thus would cause employment growth. For example, owner-manager O(SG) said:

'Our company is smaller than our competitors. We should create revenue growth in order to hire more employees. From the revenue growth, we can increase our human resources.' (owner-manager O(SG))

In the next step, owner-managers designed and restructured their organisations to respond to employment growth via revenue growth. As the organisation grew, owner-managers introduced diverse strategic management styles suitable to manage their expanded organisations. Owner-managers showed two different main types of management styles: centre-controlled measures and division-controlled measures. Owner-manager B(SE) controlled all of his organisational structure by himself, providing minimum empowerment to team leaders, whereas owner-manager N(SG) adapted a contrasting style. The organisational structure can be created differently according to varying business purposes and owner-managers' business styles.

'I organised many small-sized teams which comprise four to five members...I met with team leaders. I think if there are many empowered decisions, members would focus on their team profits rather than organisational business profits. Although I empowered the business process, I manage the main decisions.' (owner-manager B(SE))

'...operate our organisation into small parts of divisions and there is no overhead in my company. I think working as a unit group improves organisational performance...I think our employees tend to understand that the profit of their department is the priority for the company profits. That is, our company operates a strict headquarters

system, and the working hours and the wages vary by different divisions. Even the hierarchy structure is different...' (owner-manager N(SG))

The management styles and decisions of owner-managers can weaken or strengthen competitive advantage by overinvestment as well as resource distribution. Diverse owner-managers' strategic decisions cause various outcomes during the entirety of the business steps. From the interviews, owner-managers' firms, which focused on the profitable growth, more to reflected the views of the **SE** firms than the companies concentrating on revenue growth. Furthermore, although there are few examples on the impact of organisational structure for the growth of firms, according to the interview data, a collectivist structure in the organisation was more effective than a competitive culture between divisions in the same organisation for the growth of firms.

Experiences and expertise

Owner-managers have different views and management styles based on their experiences and expertise relevant to their business. Some participants have specific-industry, engineering-oriented experiences related to their business (A(SE), B(SE), C(SE), D(SE), F(SE), G(SE), H(SE), I(SE), J(SE), O(SG), P(SG)) and some participants have relatively little prior industry knowledge or other business experiences such as marketing and management (E(SE), K(SG), L(SG), M(SG), N(SG), Q(SG)). These were able to link with the business performance affecting the sustained growth of their companies. The data showed that the **SE** firms' owner-managers were relatively more engineering-experienced people than the **SG** firms' owner-managers.

In the group of engineering-experienced owner-managers, owner-manager O and P were involved in the **SG** firms. Owner-manager O(SG) has a PhD degree related to his products, and he said that he did not manage the marketing and the management of the organisation well. His business products were in the position of being technology-edge, and, thus, owner-manager O(SG) attempted to develop potential products. His managerial styles had caused growth and decline in his business repeatedly in the past. Owner-manager P(SG) had developed his products since the foundation of this business, and he also experienced a high-growth pattern at the beginning of the business.

However, his business was strongly affected distributors' business marketing and did not achieve the sustained employment growth, whereas owner-manager E(SE) had no experiences related to technology, but his company was included in the sustained employment growth firms. Owner-manager E(SE) had a unique context when he established the company. He only had management experience, and his university juniors with experience in engineering requested him to start the business with them. Owner-manager E(SE) became an owner of the company, and he focused on a business strategy to set up and expand the business, and his juniors developed the products. Owner-manager E(SE) overcame his disadvantages relevant to technological knowledge by distributing responsibilities.

Apart for these three firms, engineering experienced owner-managers' firms were involved in the sustained employment growth firms, and others were in the sustained growth firms. Customers tended to trust the opinions of reliable experts on demand for their products. Customers' behaviours meant that professional information was more effective for persuading customers than general business information. Owner-manager D(SE) said:

'...because I had expertise related to my current business, customers would listen to my opinions, and I seized the chance to appeal my proposal to customers. My business is unique. So, it is necessary to have specific knowledge...' (owner-manager D(SE))

Owner-managers with technological expertise gained technology competitiveness early because they perceived the importance of technology. That is, concentrating on R&D was relatively useful for achieving sustained growth in high-tech SMEs, whereas owner-managers lacking technological knowledge tended to draw a big picture relevant to their business, and they authorised specific business planning with their senior employees. They had difficulties in understanding technological expertise, and their lack of knowledge impeded active investment being made to expand and grow the business. For example, owner-manager Q(SG), who had been a manager for an IPO, did not allow negative opinions of engineers to be expressed because he thought a consensus between members was more critical than diverse opinions for improving business

performance. Owner-manager E(SE), who had no technological expertise, achieved the sustained employment growth by acknowledgement of his lack of knowledge whilst owner-manager Q(SG) did not achieve the sustained employment growth by operating the company in terms of his expertise in financing.

Despite the advantage of the expertise, narrow and specific knowledge can negatively affect business performance. That is, marketing-oriented owner-managers could consider more ways of increasing sales volume, and R&D-oriented owner-managers could focus more on the development of creative products rather than other business processes. Therefore, specific professional knowledge is not as useful as broader knowledge and outlook.

These biased business patterns caused some issues which impeded the sustained growth of firms. Owner-manager G(SE) and H(SE) experienced a delay in marketing impeding the time of their products' introduction and the revenue growth at the beginning of the business. They realised their decisions were going in the wrong direction after implementing them in their business. Owner-manager G(SE) regretted his experiences:

'I developed new products, and I never considered how to sell this product because I thought customers would absolutely buy my products. I was convinced by my creative products...' (owner-manager G(SE))

while owner-manager H(SE) realised his mistakes of investing too much in R&D rather than in marketing.

'I believed the R&D is the most important thing in my business. But I recognised I need to avoid overinvestment for R&D and to consider sales planning...' (owner-manager H(SE))

Although there are some negative sides to the biased expertise of owner-managers, the interviews show their experience and expertise have a more positive impact on the sustained employment growth of high-tech SMEs compared to the group of **SG** firms. Furthermore, the awareness of owner-managers' knowledge level was useful for

responding to the business crisis. That is, owner-managers' considerable prior experience and expertise positively operated for a successful business.

Owner-managers of the **SE** group focused more on profitable growth rather than turnover growth (see the section on **strategic decisions**), while owner-managers' industry-specific experiences and expertise helped to achieve the sustained employment growth of the high-tech SMEs (see the section on **experiences and expertise**). From the interviews, we can confirm that owner-managers' personalities decide the direction of a business and strongly affect its growth. However, a business is not always dependent on owner-managers' power; employees' positive attitudes and contributions are required combining with owner-managers' leadership for business growth. The next section shows what owner-managers think are the necessary employees' attitudes for the growth of firms.

5.2.2 Employees' contribution to firm growth

Employees are one of the cornerstones comprising the organisation and the market. Employees not only are members of a company but also are customers in the market. Therefore, owner-managers attempt to understand what employees want to get out of the organisation. These owner-managers' efforts can be positively linked with business growth.

Motivation and commitment

All participants believed that employees contribute to improving business performance, and, thus, owner-managers attempted to get employees to commit to their organisational growth. Owner-managers had various assessment tools to motivate employees and improve their performances as a means of motivating contributing the organisation; and they decided on rewards for employees according to the contribution they made. Owner-manager D(SE) said:

'Intentionally, I adopted the assessment system, which is able to check employees' performance by reflecting the views of leaders and colleagues. I believe that employees can recognise the relations

between the results of an assessment and their promotion and wages.'

(owner-manager D(SE))

Owner-manager G(SE), I(SE) and O(SG) also considered ways of sharing business profits with employees as an essential means of enhancing employees' commitment to organisational growth. Owner-managers think employees are an important resource for supporting all business processes. Owner-manager O(SG) had a specific plan to share profits with employees.

'I operate the scheme which is sharing profits with employees. I write the contract which the company will raise the wage by the growth of the company. I also inform employees that the company will share stocks to employees when the company enters the public market.'

(owner-manager O(SG))

Owner-managers thought motivation was an important factor to achieve the growth of their companies, and they used direct and indirect management styles to raise employees' motivation. Employees could be motivated by an awareness of their self-esteem, the vision of the company or owner-managers' leadership. The value of the business for society also raises employees' motivation because employees can draw inspiration from the social valuation of their firms. Owner-manager G(SE)'s employees agreed with the opinion of owner-manager G(SE) about the social contribution to the business and owner-manager G(SE) described the social contribution of the business to employees as follows.

'Let's think about this, what if our technology contributes to saving human life from external threats in the future regardless of a profitable business model. Think how much our business would be valuable to ordinary people.' (owner-manager G(SE))

Some owner-managers considered that trust and respect among members was one of the key factors influencing their business growth (owner-manager C(SE), J(SE), L(SG), P(SG), Q(SG)). Employees tend to follow leaders who are aware of people's characteristics and respect their opinions. Therefore, owner-managers' attitudes on

respect and trust of employees result in inspirational motivation. For instance, owner-manager J(SE) mentioned:

'It is important to form an organisational culture of respecting each other. With this culture, it is possible to achieve job retention and to stimulate employees' contributions to the company...' (owner-manager J(SE))

Both **SG** and **SE** firms thought the way to maximise employees' contribution was to motivate their sense of self-sacrifice to the organisation. They also considered various measures to stimulate the motivation and commitment of employees. Owner-manager P(SG) spoke of what he thought were the necessary attitudes of employees. Owner-manager P(SG) wanted to be a leader himself and showed one popular video to employees.

'I showed the video clip to employees. In the video, one man started to do a dance in the park. He looks crazy... after a few minutes, another man also began to dance with the dancing man. In the end, many people were dancing together. I said to employees. I will be the first dancing man. So, please be the second man and go forward together for our business. After that, many customers will follow our business.'(owner-manager P(SG))

All participants perceived the necessity of employees' self-esteem and self-sacrifice in the organisation. Given employees' active attitudes to the business, owner-managers could suggest a high-value business vision and make an effort to get a consensus among members.

Consensus between members on the business vision

All participants agreed that sharing a business vision, business status and business information were directly associated with positive attitudes of employees to their organisational growth. Sharing the business vision made employees understand their responsibilities, which affected the growth of the firm. Although employees tended to focus on their individual benefits more than the organisations' business, owner-

managers did not give up on sharing a vision with employees of combining the power of human resources. In the end, SMEs were able to grow their business based on a consensus of members' opinions without conflicts. Owner-manager I(SE) stressed the importance of sharing the business vision with employees.

'I make a vision and employees execute a vision. I have to find employees who can implement the vision as much as I can and I should share it with employees. I have to get their opinions about whether or not my thinking is good. Although my business vision is great, I can't do anything at all when employees don't care...I am trying to understand employees' minds. To do this, I am studying psychology...'
(owner-manager I(SE))

The business vision shows the positive expectations of employees and the owner-managers managing employees to fit with their business vision. Participants shared a lot of information with employees even though employees did not understand all of the business information. Therefore, it is useful to share positive business information to encourage employees' optimistic thinking. Owner-manager C(SE) said:

'I share only the business information which has a high possibility of success with employees to avoid employees' negative mind-sets of their organisation.' (owner-manager C(SE))

Owner-managers (B(SE), D(SE), E(SE), I(SE), and L(SG)), who mentioned their business visions, tended to introduce these visions in a top-down way even though they recognised the necessity of achieving a consensus between the owner-manager and employees for the business vision affecting the growth of the companies. Owner-manager L(SG) said:

'I think I can do my business with only the people who understood my business vision. I am doing my business with them and they follow my opinions by themselves.' (owner-manager L(SG))

On the other hand, owner-manager C(SE) had an opinion which is closer to a bottom-up than a top-down one for achieving a consensus on a business vision with members. The

potential business vision is implemented by employees, and owner-manager C(SE) believed that a consensus on a business vision reflecting employees' dreams was the most effective way to improve business performance.

'The vision of the company should reflect employees' dream and employees' dream is directly linked with business growth.' (owner-manager C(SE))

Owner-manager G(SE), N(SG) and Q(SG) thought that business planning should be based on a vision related to employees' emotional attitudes on faith and trust. This is because people tend to believe someone else's opinions, suggesting an exact vision could achieve a reliable relationship between the owner-manager and the employees. Owner-manager G(SE) suggested his vision was to go forward with employees for the future business.

'I said to employees, "although the company has difficulties to keep all promises with employees, trust our business planning and make your life planning. And let's go together for twenty to thirty years in your life".' (owner-manager G(SE))

To lead employees' contribution, owner-managers shared a business vision and information with attitudes of respect and trust. There was no noticeable difference between **SE** firms and **SG** firms for the perception of the importance of a business vision and the consensus between members' opinions in the organisation. They believed that these were positively associated with business growth. At the same time, owner-managers supported employees to improve their human power, which is the key element enhancing internal competitive advantage. This is because a business is operated by human capital and the competitiveness of human resources is directly linked with the growth of the firm.

Employees' personalities

Participants pointed out the importance of individual performance and they believed employees' personalities were a resource for the firm's growth (owner-manager A(SE), B(SE), D(SE), E(SE), H(SE), J(SE), M(SG), N(SG), P(SG), Q(SG)). Owner-managers

attempted to understand employees' individual characteristics and managed them to enhance business performance. Some owner-managers focused on improving individual abilities (owner-manager D(SE), M(SG), N(SG), O(SG), P(SG), Q(SG)), whilst others concentrated on upgrading group performance (owner-manager A(SE), B(SE), E(SE), H(SE)).

Owner-managers thought employees wanted to improve their individual skills but they did not have many opportunities to participate in the high quality of education programmes internally and externally. In this point of view, owner-managers operated or suggested education programmes for employees. Internally, the company was not only able to provide the education programme for employees but also support employees in taking part in external education programmes. For instances, owner-manager A(SE) and O(SG) attempted to educate employees.

'We annually conduct fifty hours of education for employees...The company is also supporting employees who want to study more at university. I believe employees' education is very important to improving our business quality.'(owner-manager A(SE))

'Employees have to take part in manager education if they want to be a manager. Our company uses both internal education and external education. We educate employees on being able to decide on business decisions when they will be a leader' (owner-manager O(SG))

Meanwhile, owner-manager B(SE) and E(SE) prioritised group training rather than individual education and travelled overseas annually to have a workshop with all members. In SMEs, employees have a difficulty in taking overseas business trips due to a lack of finance. Thus, owner-managers were convinced of their employees' satisfaction with the workshop programme. In the group workshop, owner-managers expected to see an improvement in organisational mood.

'Our company has been going to a workshop in overseas for the last ten years. We spent ~~¥~~ 200 million (£136,000) on this workshop. This workshop was effective to make a consensus between members for

our business and to improve employees' satisfaction' (owner-manager B(SE))

'Our company has been going to Thailand for the company workshop for five years...I thought this workshop was an opportunity to for a future business vision together. I also received a consultation to train team leaders. I think the consensus between the company and members is so important.' (owner-manager E(SE))

Owner-managers of **SE** group tended to focus on enhancing group performance compared to the **SG** group firms. Nevertheless, all owner-managers thought the foundation of organisation performance began with employees' personalities. Participants considered the management styles of senior members because senior members were perceived to be a significant element in operating their companies.

Senior members' contributions

Owner-managers discussed crucial decisions with senior members, such as team leaders, managers, and top management team members, because senior members played an essential role as a mediator between the owner-manager and the employees. Participants said that senior members contributed more to the survival of the company than its growth (A(SE), C(SE), D(SE), H(SE), K(SG), L(SG), M(SG), P(SG), Q(SG)).

'long-term workers understand and follow my thinking. Based on this, the company could have continuity. If they leave the company, the company lost all of the intellectual property at once... The company needs team leaders and managers, and they can play an important role in the company. The more long-term workers you have, the more helpful it is to achieve our company identity.' (owner-manager C(SE))

Owner-manager H(SE) viewed senior members as the foundation of survival, whereas, owner-manager M(SG) worried about the reduction of positions which junior members were able to promote because of the increase in senior members. Although there are a few issues regarding senior members such as lack of performance and an increase in management costs, their existence positively influenced the reliability of the various

businesses. Owner-manager H(SE) and L(SG) had similar experiences relevant to senior members' contributions when their business was not going well.

'When our business declined, I appreciated the founding team members because they didn't leave the firm. However, when we were growing, sometimes I thought senior members showed a lack of performance compared to their wage levels.' (owner-manager H(SE))

'...long-term workers didn't leave the company even though our business was in such a bad situation. They have never been pessimistic even though we found it hard to maintain our business. They are the foundation of the company. Long-term workers are the basis for growth.' (owner-manager L(SG))

The data show both **SE** firms and **SG** firms have similar perspectives on the contributions of senior employees. Owner-managers believed senior-members made big sacrifices to their companies.

Owner-managers recognised the important role of employees for the growth of their companies even though they have various views on employees' performances being improved and the role of senior members. Furthermore, they agreed on the importance of relations between motivation and the consensus of a business vision. In other words, all owner-managers have similar views on the necessity of employees contributing to the growth of firms.

5.2.3 Collaborative organisational culture

In the participants' firms, employees acted as one of the central business components, and owner-managers attempted to manage them effectively and fairly. Participants considered how to make the organisation able to collaborate with members to get a reliable business performance. These efforts are positively associated with a collaborative organisational culture. In the interviews, owner-managers considered ways of encouraging employees' involvement and collaboration. Participants attempted to treat employees fairly, to lead their participation in decision making and to understand employees' diverse characteristics. Owner-managers think a collaborative

organisation can stimulate employees' self-sacrifice for the growth of firms through collaboration between members, owner-managers' awareness of employees' characteristics and the empowerment of employees.

Collaboration and communication

All participants felt there was a lack of human resources compared to larger firms. Some owner-managers focused on the improvement of human resources, which is the foundation of business structure. At the same time, they encouraged the fostering of a collaborative culture in order to achieve internal competitive advantages and respond to the external business environment (B(SE), E(SE), H(SE), J(SE), L(SG), M(SG), O(SG), Q(SG)).

'When my company was small, we had to move forward together. in a small organisation, it is difficult to press employees. Small companies have to make family-like organisational culture.' (owner-manager B(SE))

Interviewees' companies have various contexts where they commonly perceived the necessity of a collaborative culture in the company to enhance co-working between employees. They combined and coordinated diverse thoughts in order to strengthen internal resources, as well as to expand their business. Owner-manager E(SE) stressed collaboration for strengthening small organisations' power while O(SG) highlighted the importance of collaboration for new business planning.

'...in a small company, opinions should not be divided. I used share stocks to stimulate employees' collaboration. I announced I would share the stock with employees when we listed on the public market.' (owner-manager E(SE))

'I think that experts are necessary to activate business performance, but our company is still weak in human power. So I frequently build the task force team with members of different divisions to prepare for new planning.' (owner-manager O(SG))

Some owner-managers shed light on the importance of communication via the opportunities to meet face to face in order for the organisational culture to stimulate co-working between members (owner-managers C(SE), D(SE), F(SE), G(SE), I(SE), N(SG) and Q(SG)). The more employees communicated, the more they understood what they do and how they contributed to the growth of the firm. For example, owner-manager Q(SG) made space and a time to meet employees.

'We periodically share our core business valuation with employees. We have the time to communicate with each other, and I attempt to introduce our business valuation to employees. This is a chance to understand external changes and systematise organic communication'
(owner-manager Q(SG))

Employees would have difficulties communicating with the owner-manager due to the relationship between the employer and the employees. Hence, owner-managers attempted to listen to employees' opinions and to maintain a close connection with them. Owner-manager G(SE) said:

'When employees ask something of the company, we never say 'no' without explaining why. We explain everything in detail. I manage my company transparently with the employees. This is the way to manage the organisation without having conflicts.' (owner-manager G(SE))

Owner-manager Q(SG) made time to meet with employees periodically, and owner-manager N(SG) reflected employees' opinions about what they wanted to do next in the company.

'I had time to have a meal with employees in order to communicate the business of the company and to listen to employees' opinions of the business.' (owner-manager Q(SG))

'I attempted to reflect employees' opinions and their wishes to work in the company. I communicate with employees and guarantee employees' demands in the management of them.' (owner-manager N(SG))

Communication leads to understanding about what owner-managers want to do for their business and what opinions employees have about their company and their jobs. Hence, collaboration between members can affect the growth of firms effectively. That is, owner-managers recognise the essential role of understanding employees' characteristics. Owner-managers adopted various ways to understand employees, and they said owner-managers' awareness was the critical factor for managing the company (owner-managers C(SE), D(SE), E(SE), F(SE), G(SE), H(SE), I(SE), L(SG), M(SG), N(SG)). Although owner-managers knew the importance of communication and having an awareness of employees, attempting to understand employees was constrained by the size of their company. When the company was small, owner-managers found it easy to exchange their opinions with employees. But when the company became bigger, they faced difficulties communicating with each member individually. At this stage, owner-managers used an indirect way to gather information about what opinions employees had and what they saw for the business. For example, owner-manager E(SE) changed the way of communication depending on the company size.

'My organisation is a small-sized company of 50 to 60 employees Up to 30 people, I managed them directly. But I felt it necessary to share my roles to communicate with employees with senior-members because the company was growing and the number of senior-members was increasing. I thought senior-members needed to have their own responsibilities to manage small parts of the company. Nowadays, I communicate with employees via the mediation of senior-members.' (owner-manager E(SE))

In the interviews, there were no significant differences between **SE** group firms and **SG** group firms on the importance of collaboration and communication in the organisation. But owner-managers faced limitations of communication with employees as companies grew. Therefore, they considered the empowerment of employees in order to manage the organisation effectively.

Empowerment of employees

Most interviewees mentioned and recognised the necessity of empowerment to create better business outcomes (A(SE), B(SE), C(SE), D(SE), E(SE), F(SE), G(SE), H(SE), M(SG), N(SG), O(SG), and P(SG)). Owner-manager C(SE) believed that empowerment resulted in employees' involvement and commitment. Owner-managers thought that empowerment was a partial authentication of the responsibilities of their senior members or team leaders. Thus, empowerment could affect the flexibility of R&D actions because engineers need a comfortable environment to think of creative ideas. For example, owner-manager E(SE) mentioned:

'I think employees of the R&D department need the flexibility to decide their thoughts in their job. I attempted to make a comfortable business environment in order to reduce stress. I am just involved in small parts of the whole process in the R&D actions. 60% empowerment, 30% of management is my norm.' (owner-manager E(SE))

Employees' empowerment can be necessary not only to encourage creative thinking in R&D actions but also to strengthen employees' active attitudes to finding customers' demands within employees' responsibilities. Owner-manager O(SG) emphasised engineers' extra efforts in the field.

'I demand of employees. "Make yourself in terms of you are a decision-maker", Empowered employees should offer solutions to customers ... I stressed to engineers and developers. I said, "do your planning and meet with your customers directly to find the direction of R&D".' (owner-manager O(SG))

When employees have more responsibilities and they feel that owner-managers believe in them, they put in extra effort into doing their job. At the same time, employees' decisions make the company reliable in the market and owner-managers will have more time to concentrate on business expansion. Owner-manager F(SE) said:

'I requested many opinions to team leaders on decision-making. I put pressure to them and they tried to answer appropriately. This was the training to improve their decision-making ability in their jobs. Nowadays, each team leader reduces my burdens and I have spare time; I have more time to find new business.' (owner-manager F(SE))

However, strengthening empowerment for each division in the company can cause conflicts between members because employees like to accrue more benefits to their division than others. This can affect the business performance of the company negatively. Owner-manager B(SE) said:

'I think empowerment can cause conflicts between teams. If I empower many things in each team, they think of the benefit of each team rather than organisational profits. Although I empower employees, I strongly manage them to avoid conflicts between members.' (owner-manager B(SE))

Although there are positive aspects to empowerment in small organisations, owner-manager M(SG) also mentioned some negative aspects. His opinions are similar to owner-manager B(SE)'s negative views of empowerment. He managed his organisation of up to 50 people and he gave many decision powers to team managers. However, he realised his managers had difficulties in finding the right business direction. As a result, he introduced many formal frameworks to encourage discussion between team members. He said:

'The empowerment to departments of the company could help to operate strategic management but cause to lose the overall strategic business purpose of the company.' (owner-manager M(SG))

Owner-managers agreed with the necessity of empowerment to improve the efficiency of business performance, but there was also a limitation. They commonly empowered specific groups such as team leaders, senior members and manager groups. Empowerment in SMEs was the element to introduce at certain points. Each company has a different position, and owner-managers have different business philosophies.

Those affect the times when companies need to apply empowerment to their organisations. The data show similar perspectives for the role of empowerment in the organisation in both the **SE** group firms and the **SG** group firms.

Regarding a collaborative organisational culture, participants stressed the importance of collaboration, communication and employees empowerment based on owner-managers' efforts to understand employees. Although they had a slightly different approach of encouraging employees' participation, all owner-managers in this study agreed on the necessity of having a collaborative organisational culture to stimulate employees' active attitudes to the organisation.

5.2.4 Summary

High tech SME owner-managers had various opinions on the factors influencing their business growth. In the two groups of sustained employment growth firms (**SE**) and sustained growth firms (**SG**), the perspectives for those factors had a similar pattern except for the desired growth pattern and the way of training employees. Despite these small differences, both groups agreed on the significant roles of owner-managers' rich experiences, employees' motivation for commitment to the company, and fostering a collaborative organisational culture in order to achieve the sustained growth. Owner-managers have been adopting various strategies, such as rewards and periodic meeting, to understand employees, as well as to elicit employees' emotional contributions. Most of all, owner-managers believed collaboration and communication is a critical factor to enhance internal competitiveness. These efforts made the sustained growth of participants' companies and elaborate the capability of being able to respond to the external business environment. Concerning the external factors, the next section illustrates how owner-managers responded to the external business factors for achievement of sustained growth.

5.3 External factors

SMEs meet with unexpected external business environments, which can result in the growth or the decline of their business. SME owner-managers responded to external business factors such as financing, the technological trend, the business infrastructure,

industrial changes and the customer base. Participants decided on many alternatives for overcoming and challenging external business environments as discussed in the literature and figure 5.3 illustrates owner-managers' perspectives for the critical external factors to be considered.

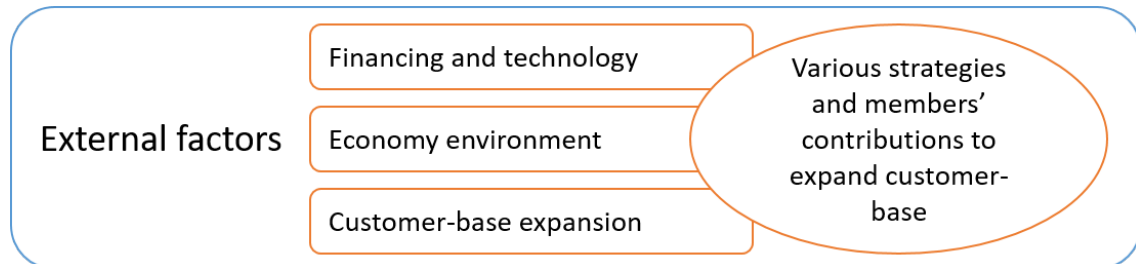


Figure 5.3 Owner-managers' perspectives for the critical external factors Source: Author

5.3.1 Financing and technology

The consideration of financing and technology is an issue which high-tech SME owner-managers frequently meet during their entrepreneurial life. In particular, they can respond sensitively to the trend of technology and they can find alternatives to external business crises via financing from diverse investors, such as banks, the government and venture capitalists.

SME owner-managers need to raise finance internally and externally to enhance R&D actions, basic operations and their sales marketing. SMEs invest with family money, business profits and external financing for diverse business purposes. In the case of the R&D actions, all participants receive an R&D subsidy from the government to develop their products according to the ratio of 75% subsidy to 25% company own funding. Some owner-managers invest in their infrastructure, such as the factory, the workplace and manufacturing devices, with government-guaranteed funds that have low interest rates (owner-managers D(SE), E(SE), H(SE), L(SG), M(SG), N(SG)).

'...one of my product suppliers went bankrupt suddenly. So, I thought this is the chance to make a factory to manufacture my products. I invested my capital surplus in conducting the acquisition of the bankrupted company.' (owner-manager A(SE))

The aspect of financing can be treated differently by different types of business. B2B (business-to-business), defined as business between firms, and B2C (business-to-consumer) refers to business between firms *per se* and consumers. In the case of B2B business, it is not necessary to create a roadmap to meet with customers while with B2C business, along with R&D investment, there has to be investment in diverse areas such as stores and websites to contact with customers. Owner-manager A(SE) was financed through a public guaranteed fund to expand his manufacturing facilities in order to grow his B2B business. Owner-manager L(SG) also merged a manufacturing factory to enhance his primary business using the co-founder's capital while investing a considerable amount of money in developing new products. However, B2C companies have to consider marketing to ordinary people. Marketing to customers requires high expenditure in the market for B2C companies compared to B2B companies. Owner-manager K(SG) spent his family money expanding his B2C business.

'I used my parent's money to open the street store...it was difficult to get financing from the bank or public sectors. My business is B2C and I needed to develop a differentiated business model for customers. At the same time, I had to link my business platform between the headquarters office and the stores.' (owner-manager K(SG))

Financing can also affect R&D actions, as well as the operations of the company. For high-tech SMEs, the investment in R&D actions can be perceived as a resource of business growth and survival because all owner-managers believe the development of technology is the first stage in gaining competitive advantage. All participants' firms invested in R&D activities to develop new and to improve products continuously. That is, they agreed that the technical competence of high-tech SMEs was significantly associated with their potential business growth. For example, owner-manager H(SE) replaced competitors' products in the market and achieved high growth via the development of a new product.

'... At some point, we developed our new products, being able to save costs and replace competitors' products. Moreover, then, we achieved

over 20% annual revenue growth between 2009 and 2012.’ (owner-manager H(SE))

Owner-manager J(SE) developed a high level of precision based on customers’ orders. That is, he made his products to specific clients’ needs, and, thus, owner-manager J(SE) concentrated on R&D actions more than other business processes. Considerable attempts to develop advanced products resulted in sustained growth since the foundation.

Owner-managers perceived the critical contributions of financing and technology for the growth of the firm and they attempted to manage them. Management of funding and technology cannot be controlled entirely by owner-managers’ wishes, but they tried to overcome external threats in diverse ways. All participants also considered various alternatives for external business environmental changes as well as making an effort to manage financing and technology.

5.3.2 Economy environment

The economy environment comprises diverse components, such as the market, regulation, the infrastructure and the international market. Owner-managers’ competence cannot control these environments. Nevertheless, owner-managers made an effort to respond with appropriate alternatives for external environmental changes to create opportunities as well as to reduce business risk. That is, the choice of the best time for market entry was creating the business opportunities as well as increasing the business risks. Therefore, a response to the necessity of customer base expansion was also possible to achieve.

Timing in business

Owner-manager M(SG) and P(SG) got business opportunities when the internet infrastructure was installed across the country between 2001 and 2002. Their business relied on the internet environment and customers who used their service increased in number. This extract below shows how infrastructure affects business growth.

‘When we considered our business, the network speed was slow. In 2000 and 2001, broadband was installed across the country, and we

were convinced the next business opportunity would be in video streaming. In the end, we became one of the leading companies for online content provision' (owner-manager M(SG))

The market environment has different characteristics based on the attributes of the industry, such as whether it is a high technology based industry and the consumption industry. Participants investigated diverse possibilities in their products and chose potential markets domestically and internationally. In particular, high-tech business needed to provide an outlet for their established products. Therefore, participants' companies looked after the changes in the market and followed international trends. The example of owner-manager N(SG) shows what perspectives a high-tech SME owner-manager has for his products and the market.

'The high growth I believed can be identified according to two types: broadening market share and entry to the new market. I expanded my business in a new market. Recently, our business went into a steady state because the new market isn't active yet. If the target market was fixed, such as with 'noodles' and 'snacks', widening market share would be the correct answer for the growth of the firm. However, an industry such as 'software' is involved in 'hypermarket'. That is, this industry is part of the international market. Hence, I have to go to the international market... All businesses need time to open up. If my product has a competitive advantage, I should have the power to wait until the market opens. Waiting and persisting is the technique for new growth.'(owner-manager N(SG))

The preparation of new business is the responsibility of entrepreneurs, but the timing of the opening of the target market depends on the economic environment. Owner-managers B(SE), D(SE), G(SE), N(SG) and P(SG) stressed picking the appropriate time to introduce their products to the market. They commonly said that waiting was required to expand their business. Owner-manager D(SE) said:

'If we are surviving and preparing our business, the opportunity will come back to us...I think we can lose a business opportunity while I

operate my business. At that time, we just prepared our products for the time when the market conditions would become favourable again to us.’ (owner-manager D(SE))

The business environment includes the uncertainty of potential business risks and opportunities. The power of being able to wait can work as a useful measure to achieve the next business stage. Owner-manager P(SG) highlighted that waiting for the next market opportunity was essential to expanding the business.

‘The business is too complicated to call. There are a lot of variables. I cannot control external business factors. I think the world has a cycle and a trend. If I proceed consistently, the timing for new business will be matched with me. In the past, the business cycle in my industry was about ten years. But nowadays, the cycle is about two years. I continue to match with this cycle.’ (owner-manager P(SG))

If the company introduces a product in the market too early, customers may not realise the necessity of this product to their business or lives. In line with this, if a new product is introduced to customers too late, customers may end up using other alternatives. For SMEs, it is difficult to match this timing in business, and therefore, they tended to choose a strategy of preparing for future business rather than exploring the market. The example of owner-manager G(SE) shows the contrary case of mismatching timing in business.

‘When we develop our software products, I wondered why companies would not use our product?... After two years, I understood them. I suggested they were using my products too early. I think they didn’t feel their established software system was failing, so they didn’t use my products. It like suggesting a car instead of a carriage even though they don’t feel any inconvenience about taking the carriage.’ (owner-manager G(SE))

Although it is not possible for SME owner-managers to estimate the best time for introducing new products, it is necessary to attempt to do so. Owner-manager B(SE) mentioned one of the ways he estimates timing in business.

'We ask opinion leaders about the market we have an interest in. If eighty to ninety per cent of them know about our interests, that means we are late in entering the market. If only one to two people know about it, I consider that this business will open within two years, and I access that market. Venture firms should keep going with proper timing even if they cannot make a profit in the market.' (owner-manager B(SE))

As with the example of owner-manager B(SE), it is necessary to have criteria for identifying the appropriate time to introduce products in the market. Both groups of participants also have similar opinions around the importance of timing in business. It is a complicated process to estimate the appropriate timing in the market. Therefore, owner-managers realised the necessity of investigating market trends and the characteristics of the industry in detail.

Analysis of the market

In the interviews, all owner-managers pointed out the necessity of accurate market analysis before entering the market with their business products. That is to say, they said that market analysis was a critical factor as much as timing in business and they also thought that accurate market forecasting was required to decide the time when they could introduce their new products to the market. They commonly agreed that understanding the market characteristics and industry trends was a necessary foundation to keeping their competitive advantage compared to competitors. Analysis of the market and industry requires a broad view of being able to analyse diverse interpretations. Owner-manager C(SE) took business trips in many developed countries and underdeveloped countries to understand business trends.

'When I travel to many countries, I feel the past and the present of the industry because underdeveloped countries reflect the pattern of developed countries in their industry. It looks like time travel. I

anticipate the future of our business from business trips in the USA.'
(owner-manager C(SE))

As with the opinion of owner-manager C(SE), owner-manager I(SE) also observed market trends in the USA. Owner-manager I(SE) also considered the position of business as a follower.

'I think the industry trend of the largest market in the world is evidence of future business for our business...I acted as a follower and surveyed what fast movers were doing then.' (owner-manager I(SE))

Furthermore, he attempted to listen to diverse opinions from market experts and ordinary people about his business ideas. Owner-manager I(SE) believed that this was the real market analysis for preparing for the next business opportunity. The example of owner-manager O(SG) shows how an owner-manager is aware of and treats an uncertain market.

'I know it is so difficult to create a new paradigm for SMEs. I chose established, growing and sustainable markets over the next thirty to forty years. I attempt to acquire competitive technological advantages in this market to avoid disappearing in the competition.' (owner-manager O(SG))

In other words, owner-managers attempted to enter markets which are established or new markets according to their analysis. All participants had the same opinions about the necessity of accurate market analysis to prepare for future business as much as possible. Their investigations also can be perceived as a way of avoiding market entry barriers.

Entry barrier and international markets

Some owner-managers were concerned about market entry barriers impeding the growth of the business (owner-managers D(SE), G(SE), H(SE), O(SG), M(SG), N(SG)). Market entry barriers can exist in both the domestic market and the international market. Owner-manager N(SG) entered the international market to avoid market entry barriers in the domestic market, as well as to expand his business. The example of

owner-manager N(SG) shows one of the ways to reduce business risk arising from market circumstance.

'Our business shows a proportion of 70% in the domestic market and 30% in the international market. I think it is necessary to engage in risk-taking in the new market to expand the business...Our business vision would see our company involved in the world's top 100 software firms.' (owner-manager N(SG))

Owner-manager N(SG) introduced his products to the international market in order to expand the business based on the domestic market while owner-manager K(SG) concentrated on the international market at the beginning of the business as an alternative to the difficulties of entering the domestic market.

'I introduced my business in a department store but I didn't make profits because of the high rental cost even though the sales revenue was high. Overseas, I contracted with big buyers and I am expanding my overseas shops instead of my domestic shops... So, entry to the international market is the right direction for me.' (owner-manager K(SG))

In the international market, SME owner-managers can have various difficulties such as a language barrier, cultural differences and a lack of brand reputation. Owner-manager G(SE) met with unfair circumstances in an overseas market because of a lack of national brand compared to the technological level he had. Owner-manager G(SE) said:

'The ICT industry of Korea is recognised as one of the advanced group by many experts. Nevertheless, I was so hard to enter the USA market because of lack of national brand relevant to the software product...I think the national brand of Korea can't support the business of SMEs' (owner-manager G(SE))

To expand business in an international market, owner-managers took part in diverse international exhibitions over several years to show their business continuity to potential clients overseas (A(SE), F(SE), J(SE), K(SG), and L(SG)). Owner-manager A(SE)

developed new products and advertised them at many exhibitions in the domestic market, as well as on the international market.

'We concentrated on developing new products for several years with big money. And we participated in domestic exhibitions for several years. Furthermore, we went to international exhibitions. In the end, we expanded our market share domestically and internationally.'
(owner-manager A(SE))

Owner-managers attempted to get accurate market information to forecast the market trend and to expand market share. Although owner-managers had a different approach to analysing the market and choosing a potential market, both **SE** firms and **SG** firms commonly considered how to understand their markets and how to approach them for successful business growth.

The external economy environment comprises the various factors mentioned above, which have the attributes of uncertainty for SMEs. Owner-managers thought that it was critical to consider timing in business based on market analysis and entry barriers, as well as the international market in order to expand their business. That is, all informants said that adequate responses for external economy environments were critical factors to achieve growth in the business. In this point of view, owner-managers could achieve customer-base expansion, which is an integral component of the business environment.

5.3.3 Customer-base expansion

The customer is one cornerstone of a business, playing a vital role in the construction of the social environment and the national economy. Business actions are performed based on forming relations between the company and the customers. Therefore, owner-managers monitor customers' demands; at the same time, they attempt to gather potential customers' favours via diverse routes, such as individual and sales networks. In the interviews, participants thought that customer base expansion was a crucial element for growing their business volume and achieving sustainable growth (16 participants except for owner-manager J(SE)).

Reflection on customers' demands

Owner-managers developed their products in order to introduce them to customers and they believed it was necessary to reflect customers' demands in improving the added-value and competitiveness of their products (owner-manager A(SE), C(SE), D(SE), E(SE), F(SE), I(SE), L(SG), M(SG), O(SG), P(SG), and Q(SG)). Owner-manager E(SE) developed his own products based on clients' orders.

'We developed our products as a client's order regardless of making a profitable deal. A couple of years later, the online market was growing and we caught the opportunity to expand our business with our developed products.' (owner-manager E(SE))

Owner-manager E(SE)'s choice was positively linked with customer base expansion and business growth via developing products based on customers' needs. Participants sought to get a reflection of their customer's opinions on their products, and they believed it was a reliable way to improve competitiveness. However, not all time customers' demands work positively for their business. Owner-manager I(SE) asserted the importance of customers' responses to marketing in a different way.

'Business owners should believe customers' money rather than customers' praise for their products because sales results are the only truth to explain successful business'. (owner-manager I(SE))

That is, achieving both sales revenue and the customers' expenditure to purchase entrepreneurs' products was the evidence of positive feedback for the business. In terms of interpreting the views of customers, owner-manager D(SE) highlighted the concept of 'Prosumer', which means production by consumers (Toffler 1980), because he believed that making products was based on consumers' needs. Owner-manager D(SE) said:

'...nowadays, I explain to employees the concept of 'Prosumer'. The product is not made in the laboratory. Products are made by consumers...' (owner-manager D(SE))

Owner-manager P(SG) thought his employees were also customers and that their opinions could be professional, as well providing intrinsic perspectives for his products. He said:

'I receive opinions on our pilot programmes from testers and employees. I attempt to discuss our products to improve competitiveness before launching products in the market.' (owner-manager P(SG))

In both the **SE** firms and the **SG** firms, owner-managers attempted to develop a good relationship with customers broadly and deeply, and they felt the need to widen the network to expand their customer base.

The contribution of networks

With respect to ways of fostering customer base, some owner-managers mentioned the contribution of networks (owner-managers A(SE), D(SE), I(SE), L(SG), M(SG), O(SG), P(SG), and Q(SG)). Owner-manager A(SE) had reliable individual human networks made up of clients.

'I had such a good relationship with many people who work in my business area, and they helped me based on their trust and the faith in me. Therefore, I expanded my business network and acquired many customers.' (owner-manager A(SE))

A business network can directly affect customer base expansion. The example of owner-manager D(SE) shows how he expanded his customer base.

'When I manage the quality of our products very well, the reputation of the products can be improved by current customers. And, thus, they introduce me to other potential customers.' (owner-manager D(SE))

Owner-manager Q(SG) stressed that making reliable products created trust between the company and the customers. He thought the customers' trust in his products was positively associated with factor of increasing the reputation of the product.

'Basically, we suggest our opinions about customers' orders, and customers choose one of our suggestions. From this process, customers rely on our business and trust in our service. In the end, our present customers recommend our service to other potential customers' (owner-manager Q(SG))

The trust and faith in products is a resource of good reputation in the market, and, therefore, companies can expand their customer base and achieve growth in the business. Owner-manager I(SE) highlighted the importance of reputation.

'I attempted to meet with many people relevant to the business. They are professors, public workers, and my clients. They all have individual networks related to my business. So, therefore, they verify my business, and they also verify the reputation of my business from business leaders, who are their networks.' (owner-manager I(SE)).

Owner-manager I(SE) confirmed the possibility of his business from receiving diverse comments from his networks. In other words, owner-managers who mentioned the role of the network thought their current customers played an essential role in expanding their customer base, and they used their networks and the business networks to connect with new potential customers.

All owner-managers except for owner-manager J(SE) commonly highlighted the necessity of responses to expanding the customer base even though they agreed that customers could not be controlled by their willingness. Owner-manager J(SE) has a specific business model for dealing with a small group of clients who develop high-level technology. Therefore, he did not mention his customer base because he did not feel the necessity of a marketing process for his products. Besides owner-manager J(SE), participants thought engaging in R&D reflecting customers' demands was helpful for improving the reliability of products to customers and, thus, they expanded their customer base. Furthermore, some owner-managers advocated current customers' help to enhance their customer base and to increase the positive reputation of their products in the market.

5.3.4 Summary

In the interviews, all owner-managers said that their perspectives could not accurately gauge external business factors. However, they attempted to prepare for market changes, their product reputation and their relationships with customers. Owner-managers analysed the market characteristics and they used their networks to expand their business coverage. There were also no significant differences between **SE** firms and **SG** firms in their responses to external factors. Despite the lack of information and resources, owner-managers improved their business reputations and continued their business growth. Furthermore, these findings show owner-managers are always considering the critical roles of members, their contributions, and the collaboration between internal resources to expand business networks and customer-base, which are perceived as the resource of business growth for preparing unexpected changes of external business factors they discussed.

However, the business is more complicated than the general expectation. Besides the economic environment, owner-managers have to consider the impact of a national policy because policies can work in different ways, and have to adjust to the economic environment.

5.4 Policy impact

All participants shed light on the role of policy as a factor in intervening in the business performance, as well as stimulating the business actions of SMEs. They thought that government policy did not only have a positive result as a policy purpose but also showed unexpected outcomes because of the diverse attributes of the policies. Owner-managers outlined what they got from the policy support and how this policy had to change as described in figure 5.4.

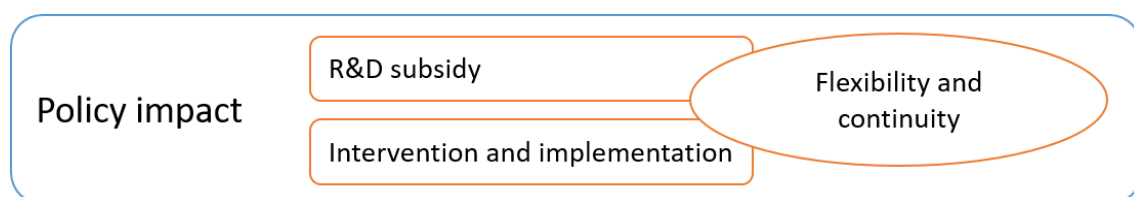


Figure 5.4 Owner-managers' perspectives for the policy impact

Source: Author

5.4.1 The R&D subsidy

The R&D subsidy contributes to the development of new products, reducing business risks. This subsidy comes about from investing in R&D with the firm's own capital. Participants had experience of developing their products with the government's R&D subsidy. In particular, some owner-managers said that the R&D subsidy stimulated for the preparation of future business, reducing business risk. (owner-managers B(SE), D(SE), E(SE), F(SE), G(SE), I(SE), J(SE), K(SG), M(SG) and N(SG))

Owner-manager E(SE) said the trigger point for taking his business to the next step was the application of the R&D subsidy.

'Because it is challenging to develop our products by ourselves, we applied the government R&D subsidy schemes...We have achieved government subsidy and developed our products. Based on this opportunity, our business expanded our markets.' (owner-manager E(SE))

One of the purposes of the government R&D subsidy is to introduce a trend of technology to SMEs. The government designed the R&D subsidy schemes to reflect investigations by public institutes into suggesting potential technologies. Owner-manager D(SE) believed that markets would open to him based on his experience with the R&D subsidy.

'...I think the government has a desire wishing to SMEs. The government aim to introduce to SMEs the upcoming industry in the future. We can consider whether we will go introduced markets by the government through participating in R&D subsidy schemes.' (owner-manager D(SE))

Owner-managers believed there was a significant contribution from the R&D subsidy to SMEs, but owner-manager I(SE) was concerned about the attributes of the R&D subsidy because of its a narrow support provision, which focus on the development of new products rather than the commercialisation of established prototypes.

'It takes two to three years to complete the development of new products and then we need more time to commercialise developed products. But the government subsidy supports only R&D actions. SMEs have difficulty completing R&D to commercialisation by themselves. I think it is necessary to support the overall business process of SMEs with government schemes.' (owner-manager I(SE))

In particular, high-tech SMEs advocated the development of new products in order to maintain technological competitiveness in the market. In line with this demand, the government increases the budget for R&D by high-tech SMEs. However, owner-managers D(SE) and F(SE) were concerned about some issues having to be met while they availed of the R&D subsidy. The interview with owner-manager F(SE) showed how the R&D subsidy could have the wrong results.

' It always is possible to have failed R&D actions. However, the government R&D schemes tend to anticipate successful R&D outcomes because the government wishes to show the positive effect of the R&D subsidy. Therefore, some SMEs might use the R&D subsidy to do further development of existing products. That is, the stringent delivery and implement of the R&D subsidy can create a moral hazard.' (owner-manager F(SE))

Despite some issues with the R&D subsidy, owner-managers stressed the necessity of it to reduce the risk in investing in the development of new products. Participants recognised that the government was encouraging R&D investment whereby high-tech SMEs were achieving a competitive advantage, and they wanted to ensure the government schemes were reflecting their opinions. As a consequence, it is necessary to consider how to deliver and how to implement government policy in the business field.

5.4.2 Intervention and implementation

Policy support comprises of regulations and various support schemes. Despite the specific purpose of a policy, the intervention by the government can affect the business

environment positively or negatively through regulations, taxation and labour policy. Also, the intervention by a policy can affect market creation as well as market entry.

Some participants thought that the government intervention created a space to sell products and this support acted effectively to create new business, as well as to enhance existing business (owner-managers B(SE), D(SE), G(SE), L(SG), M(SG), N(SG), and O(SG)). The opinion of owner-manager B(SE) is evidence of how government regulation affects the business growth of high-tech SMEs.

'When the government made the regulation about the protection of individual information, our sales volume increased twice compared to the previous year. I think our business grew by external factors.'
(owner-manager B(SE))

Despite the helpfulness of regulations on industrial activities, owner-manager L(SG) and N(SG) were concerned about the stringent implementation of labour policy. They worried about their future business because their financial situation meant they were unable to follow the Labour Act strictly. Owner-manager N(SG) said:

'Basically, I think labour policy is a problem for us. All business owners are scared about maintaining their volume of permanent employees because there is no consideration of the financial condition of each company (e.g. the capability of being able to afford a rapidly increasing minimum wage). Strict labour regulations are focused on protecting employees' rights, not a businesses.' (owner-manager N(SG))

Owner-manager N(SG) thought that the restructuring of employment should be guaranteed by regulations whereas, owner-manager Q(SG) used the labour support scheme to retain high-performing people. He said:

'In terms of the retention of high-skilled people, the national labour support scheme (called Nail Chaewoom Gonje) was very helpful for retaining them because this scheme supports the long-term working of employees' (owner-manager M(SG))

When owner-managers mentioned the attributes of policy support, they commonly said that government policy implementation was generally too difficult and stringent for them to completely abide by the rules (owner-managers A(SE), C(SE), D(SE), F(SE), H(SE), I(SE), J(SE), K(SG), N(SG), O(SG), P(SG) and Q(SG)). In particular, given the conditions in which all participants used the R&D subsidy, owner-managers had various opinions on the subsidy scheme. They thought the R&D policy needed to have the flexibility to improve the research performance of companies. Participants said that the R&D schemes comprised a detailed and stringent manual, which was reducing R&D effectiveness. Owner-manager A(SE) developed a new product with an R&D subsidy, but in the end, he complained about the scheme he availed of.

'I used an R&D subsidy to develop a new product, and I successfully developed a new one. However, I had to refund the R&D subsidy I used to the government because I did not follow the project planning process I contracted with the government.' (owner-manager A(SE))

Owner-manager A(SE) overlooked having to keep the precisely same contents stated in the contract in the process of using the R&D subsidy while he developed his products. Management of the R&D subsidy, according to the manual, has been constrained by a lack of human resources in participants' firms. Some owner-managers referred to the side effect of stringent implementation, and they thought the R&D performance of the subsidy could improve with some policy flexibility (owner-managers A(SE), F(SE), H(SE), Q(SG)). The example of owner-manager Q(SG) shows how difficult it is to follow the regulations of the R&D subsidy schemes for SMEs.

'The government R&D schemes have guides which are too complicated to follow for SMEs...We responded by providing two members for the management of the R&D subsidy. In larger firms, it doesn't matter. However, we have limited human resources and the R&D performance could be reduced because our resources are diverted into management.' (owner-manager Q(SG))

Besides the issue of the R&D subsidy, participants were concerned about the complicated structure of policy support because they did not know what policy was

suitable to use for their business. Because of the various and complicated policy schemes, owner-manager N(SG) commented that policy support looked like a buffet. All participants agreed with the importance of policy support that was balanced between larger firms and SMEs in the market; at the same time, owner-manager C(SE) and J(SE) believed narrowing the gap in the views between the government and entrepreneurs for policy implementation was required to encourage business growth of SMEs.

‘Do it yourself according to your thinking. That is better than controlling many things to achieve results. However, government policy tends to be on the side of the provider rather than the consumers. The government has perspectives that entrepreneurs are the objectives to control. Basically, the foundation of the market is based on consumers’ views. There is a gap of views between the government and entrepreneurs.’ (owner-manager C(SE))

Participants recognised the government efforts aimed at reducing the gap in views, but they felt they were ineffective. Owner-manager O(SG)’s view was representative of the opinions of why the government faces a challenge to reduce the gap in views between the policy purposes and entrepreneurs’ wishes.

‘In the decision-making process in the policy, the government tends to rely on external experts’ opinions. However, these external experts do not understand what our industry can do, instead suggesting the international trends for the policy. Therefore, SMEs apply their business projects under government programmes made by experts in order to get government funds. In the end, SMEs can achieve the wrong results.’ (owner-manager O(SG))

With respect to the opinions for policy formation, owner-manager H(SE) wished to widen the coverage of policy support to SMEs. He said:

‘When I receive the government fund, the government demands results for the funding ... In my view, when the government supports SMEs, it might be better to design policy schemes step by step

depending on the stage of growth. Because the government focuses on start-ups, established firms have difficulty getting continuous policy support.’ (owner-manager H(SE))

H(SE) said that policy implementation cause to impede the effectiveness of policy support for the growth of the company. The uncertainty of policy implementation is seen with changes of government. When a new government starts, the new regime wants to introduce a new policy even though the previous policy may have been excellent. As a result, entrepreneurs get confused about policies. Owner-manager F(SE) argued that the issues of policy discontinuity are a feature of government changes.

‘The issue of policy support is one of discontinuity. For example, when a government changes, the previous policy disappears. We cannot continue to keep our project based on the previous policy and therefore, we have to change our project in order to get the government funds.’ (owner-manager F(SE))

Despite some issues impeding the efficiency of policy support, participants in both the ‘SE’ firms and ‘SG’ firms wished to develop policy support with continuity for SMEs. They used various policies while their business was growing. In other words, the policy support of SMEs acted as a *de facto* means of complementing the business growth of participants’ firms.

5.4.3 Summary

All participants said that policy support plays an essential role in stimulating business activities, as well as fostering new business. Policy support contributes to R&D actions, reducing owner-managers’ business risks, and their companies get equipped with technological competitiveness. There are also some other issues, such as the characteristics of discontinuity and stringency, that are unlikely to be resolved for SME owner-managers. Nevertheless, participants gave diverse opinions on developing policy support for their business. In other words, owner-managers not only adopted the policy support for the growth of the company but also influenced the policy development through making various applications of policy support.

Owner-managers also considered the organisational culture as one of the key factors influencing the organisational performance. Owner-managers attempted to formulate a collaborative organisational culture with some management skills, and these efforts affected emotional contributions of employees based on psychological ownership. Thus, participants' perspectives of corporate governance need to discuss in terms of exploring how this corporate governance influences members' attitudes towards the growth of the company.

5.5 Impact of corporate governance

As the findings in the previous sections show, participants have the perspective that various factors, influencing the growth of the organisation, are positively associated with the relationships that members have with each other and their experiences. All of these factors are affected by organisational performance, and thus corporate governance can be considered one of the critical factors in enabling businesses to achieve sustained growth. Figure 5.5 describes the impact of corporate governance, discussed in this section, on the organisational performance.

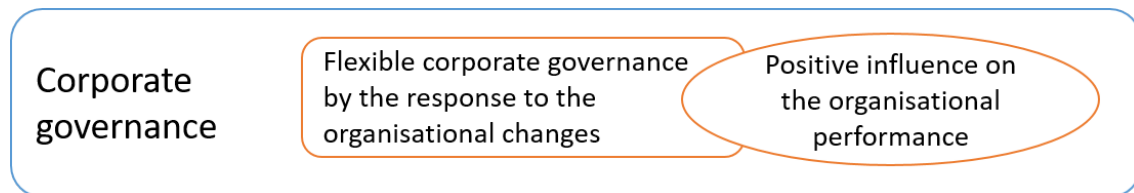


Figure 5.5 Owner-managers' perspectives for corporate governance and the sustained growth
(Source: Author)

The corporate governance directly affects organisational culture, forming an internal relationship between members. Participants' firms have adopted various corporate governance according to the size of the organisation and its industry, and regardless of the age of the firms. All participants attempted to form an organisation where diverse opinions could be exchanged with each other, and they thought good internal relations positively affected the growth of firms. However, they commonly faced difficulties sharing and exchanging diverse opinions with employees depending on the size of the company. There are some examples of how participants managed their companies. Owner-manager C(SE) and P(SG) directly managed their employees while owner-

managers B(SE), H(SE), I(SE), M(SG) and O(SG) communicated with employees via the team managers' management.

'I managed employees up to fifty employees by myself. However, I did not control the employees by myself after their number grew to over fifty people.' (owner-manager H(SE))

Owner-manager H(SE) irregularly attempted to meet employees face to face because he believed his awareness of employees could motivate employees' voluntary contributions to the company. Owner-manager H(SE) stressed that strengthening internal competitiveness was vital to business growth via a collaborative organisational culture. Owner-manager B(SE) also agreed on the importance of employees' attitudes and contributions to the company, but he managed employees strictly because he thought that employees had a lacked understanding of what the vision of the company was. Owner-manager B(SE) preferred to manage his employees in a centrally-controlled management style.

'I can control up to 500 employees. I think the owner-manager has to know everything in detail about all the happenings in the company. I think employees have to follow my orders. I manage employees' opinions to avoid unnecessary conflicts in the organisation' (owner-manager B(SE))

On the other hand, owner-manager H(SE) divided the organisation in order to enhance business competitiveness, focusing on the work on which he was confident. Owner-manager Q(SG) also divided part of the company to concentrate on the business in which he had expertise. Owner-managers H(SE) and Q(SG) divided the business responsibilities to members who wanted to leave the company to create a new firm. In a different view, owner-manager N(SG) operated his company through two separate divisions, which looked like different companies. The management styles of these owner-managers determined the business targets and the way of approaching the market differently.

'My business is difficult to grow due to the big size of the company. I divided part of the company because all types of business cannot be involved in one organisation. I don't justify a successful business with revenue growth. I will continue to divide my business when the new business is successfully set up.' (owner-manager Q(SG))

Owner-manager M(SG) divided the organisation into several sub-divisions to manage the employees. The size of the divisions was minimal and team members were organised according to their ages. He considered that junior members had difficulties in communicating with senior members, and thus he structured the teams in the organisation according to age. That is, owner-manager M(SG) sought a way to foster a collaborative organisational culture between members via dividing it into small group sizes. The company of owner-manager M(SG) is an example how a business in an organisation grows by setting up a specific corporate governance.

'In the company, there are many senior members who have been working for over fifteen years. Therefore, young people imagine that we can't get a promotion. So, I divided the division by age and gave the business over to them to run. We have some team leaders in their twenties and they managed the social marketing. The team in their thirties managed the business related to the online platform. Overall, our business is in a steady-state, but both businesses led by the groups in their twenties and thirties are growing.' (owner-manager M(SG))

Each owner-manager had a different preference on the style of the corporate governance for their organisations, with all participants thinking employees were one of the key elements for business growth. Therefore, corporate governance is strongly associated with the management of employees. That is, corporate governance can be affected by organisational size, but the aim of corporate governance does not change.

5.6 Conclusion

Seventeen high-tech SME owner-managers gave various perspectives on the factors influencing the growth of firms. Participants pointed to the importance of owner-

managers' competence, employees' contributions and the organisational culture leading to the formation of a collaborative organisation. Fostering a collaborative organisational culture is affected by the corporate governance, and the corporate governance of each company is determined by the intention of the owner-managers. External factors also influenced, in various ways, the decision-making of organisational members who decided specific strategies in response to the external business environment. From this process, participants' companies achieved sustained growth. That is, members' contributions and owner-managers' decisions have been improving through the interaction and collaboration formulated between them by diverse social actions and interactions between internal factors and external factors. Although policy support has been discussed separately to the external factors, participants used policy support as one of the critical complementary measures to reduce business risks. Owner-managers' perspectives also suggested some important points that policy support has to reflect on so as to improve policy efficiency.

Overall, both owner-managers' groups of **SE** (*sustained employment-growth*, i.e. showing continuous employment growth for all six consecutive years within the study period) and **SG** (*sustained growth* i.e. *without* continuous employment growth) firms have similar perspectives on the importance of most factors discussed in this Chapter, whilst there were a few different views. For example, **SG** firms tended to focus on the revenue growth for survival and **SE** firms had a greater emphasis on their intention to increase profits to invest for the future. Also, **SE** owner-managers tended to consider more the importance of group performance compared to **SG** owner-managers.

This chapter reflects owner-managers' views, but there are many business stakeholders in the field. They can have different views on the same object and, thus, it is necessary to review other opinions. In the next chapter, we will review policymakers' perspectives on the factors influencing the growth of companies.

CHAPTER 6 FINDINGS: Policymakers' perspectives

6.1 Introduction

Many governments have attempted to encourage new firm creation as a means of contributing to job creation. Indeed, there are many studies about policy support and the impact of policy schemes on the business of SMEs, looking at, for example, the relationship between business-friendly regulations and the growth of firms (Djankov et al. 2006), arguments about reducing government constraints on entrepreneurship (Minniti 2008), and examining the importance of discourse for the relationship between entrepreneurs and policy implementers to improve policy performance (Niska and Vesala 2013). That is, policymakers perceive the critical role of firm creation and boosting business activities for job creation and economic growth. In particular, small-sized HGFs (Autio et al. 2000) and newly created firms (Decker et al. 2014) have contributed more to job creation compared to other companies. Likewise, the UK government has developed many policies assuming a positive relationship between *de novo* firms and employment growth (Van Stel and Storey 2004). Therefore, the attributes of policy support can be considered as one of the critical factors influencing the sustained growth of high-tech SMEs. As a result, policymakers can be considered as important stakeholders for the growth of SMEs.

Regarding the process of policy support, policymakers conduct policy schemes for SMEs. Their responsibilities can be broadly classified into development, delivery and implementation of policy. In the South Korean government, there are two types of bureaucrats in the Ministry of Startups and SMEs (South Korean Government 2019): the policymaker who focuses on the development of the policy at head office (central government office) and the policy-practitioner who concentrates on delivery and implementation of the policy in regional offices (regional offices of the central government).

Eighteen participants interviewed in this study are classified into one of the two categories by their responsibilities: ten policymakers who have a responsibility and experience in developing policies in head office (policymaker **PM**); and eight policy-

practitioners who have a responsibility and experience in delivering and implementing policies in regional offices (policy-practitioner **PP**). The policymakers are labelled PM1 to PM10 and policy-practitioners are identified from PP1 to PP8.

In the analysis, although participants' opinions differ according to their characteristics and experiences, all participants exhibited a commonality of belief in the importance of the owner-manager's competence and technological competitiveness in achieving the sustained growth of high-tech SMEs. Participants whose jobs were relevant to supporting the growth of SMEs have similar perspectives to owner-managers in Chapter 5 in terms of the factors influencing the sustained growth of high-tech SMEs. Therefore, four broad themes emerged from the analysis: internal (to the SME) factors, external factors, policy support, and corporate governance as summarised in figure 6.1. These findings are presented in this chapter but discussed in relation to the other findings and the literature in Chapter 8: Discussion.

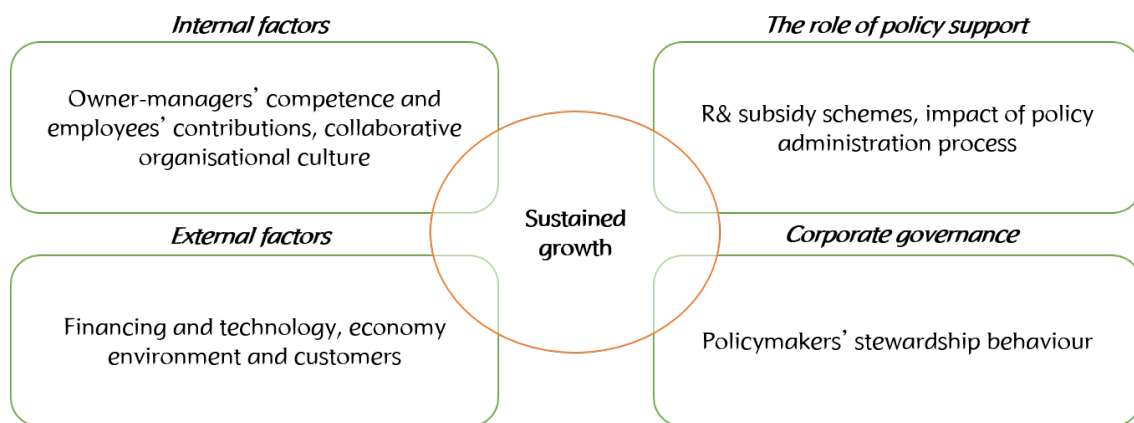


Figure 6.1 Policymakers' perspectives for the factors influencing the sustained growth

Source: Author

6.2 Internal factors

The SME business can be structured according to the relationship with stakeholders, such as the owner-manager, the employees, the customers and the competitors. Of these stakeholders, the owner-manager and the employee can internally influence on the growth of the company. Policymakers also considered owner-managers, employees and their collaboration as key elements for the sustained growth of high-tech SMEs. Therefore, this section is comprised of two sub-sections as figure 6.2 : the owner-

managers' competence and employees' contributions, and the collaborative organisational culture that exists between them.

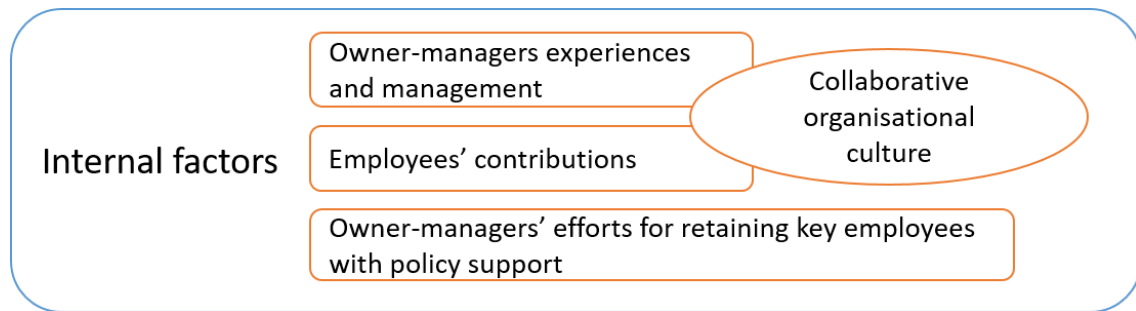


Figure 6.2 Policymakers' perspectives for the critical internal factors

Source: Author

6.2.1 Owner-managers' competence and employees' contributions

Respondents in this study have met with many SME CEOs while they deliver various policies to SMEs. All participants had the belief that SME owner-managers, including paid CEOs, act as a critical element for expanding the SME business. In addition, they pointed to the significance of employees' contributions to the growth of companies.

Owner-managers' experiences and management style

Owner-managers have many responsibilities in the decision-making process, and, thus, their tacit knowledge, ideas, and relevant experiences can be associated with the possibility of business success. Likewise, all participants emphasised the importance of owner-managers' experiences in achieving the growth of companies. Indeed, policymaker PM1 stated:

'The business experience of the owner-manager strongly contributes to setting up the business and expanding the current business.'
(Policymaker PM1)

Likewise, policymaker PM4 said:

'The technological creativeness of the owner-manager is a fundamental condition for the marketing of technology being able to expand the business.' (Policymaker PM4)

Furthermore, some of those interviewed said that the functional management of the employees was the foundation of retaining skilful people in the company (PP2, PP3, PP8). The example of policy-practitioner PP8 was as follows:

'The appropriate reward of research engineers' contribution is the requirement to retain them in the company. That is, reasonable treatment to employees makes possible the avoidance of losing skilful employees.' (Policy-practitioner PP8)

The growth of the company is influenced by the owner-manager's objective – the intention to grow – which is linked with owner-managers' entrepreneurship related to the entrepreneurial behaviour, in the sense of seizing an economic opportunity (Acs 2006) (PM7, PM9, PM10, and PP6). Policymaker PM9 stated:

'When I met with the owner-managers at the beginning of my job, I felt that SME owner-managers were too concentrated on the development of products without any planning for the sales activities. I think that the owner-managers have to consider the possibility of commercialisation of developed product to expand the business.' (Policymaker PM9)

Also, policy-practitioner PP6 mentioned the efforts of both the owner-manager and the employees to take the opportunity in business:

'The owner-manager and employees should have the entrepreneurship all together to getting a challengeable mind to achieve the technological innovation and growth of the company, as well as to create the social value.' (Policy-practitioner PP6)

Policymaker PM9 stressed the role of the owner-managers in taking business opportunities to expand their business while policy-practitioner PP6 highlighted the intention of all members to avail of business opportunities. Although both participants had a different view about who was the more important contributor to business growth, the critical factor they perceived has been shown to be the intention to avail of the business opportunities for the growth of their companies.

Furthermore, owner-managers could realise the necessity of delivering their product to customers after the creation of the firm. That is, the way of introducing their products was a significant element for operating a successful business, and the process of distributing products was one of the crucial drivers involved in creating business opportunities. Three of the participants expressed the belief that owner-managers had to expand their network with contractors to achieve the sustained growth of their business (PM8, PP6, PP7). Policy-practitioner PP7 said:

'The technology, productivity and marketing ability rely on the relationship between the owner-manager and their business partners through the various networks.' (Policy-practitioner PP7)

Furthermore, the management style of the owner-manager was strongly associated with employees' commitment to the company. Half of the respondents interviewed suggested that a positive management skill of the owner-manager motivated employees' commitment to the company (PM1, PM2, PM4, PM6, PM8, PM9, PP6, PP7, and PP8). Indeed, policymaker PM9 and policy-practitioner PP6 stated:

'Owner-managers have to consider the way of retaining skilful people in the company to keep the competitive advantages in technological capability.' (Policymaker PM9)

'It is necessary to form an organisational climate to enable creative thinking, and therefore, owner-managers need to consider various management policies to increase employees' job satisfaction, as well as to stimulate employee motivation so that they can do their best performance for the growth of the company.' (Policy-practitioner PP6)

In other words, the owner-manager's competence was strongly associated with critical business decisions relevant to the growth of the company. In addition, participants thought that the performance of employees could be improved upon when the owner-manager implemented various positive management policies, such as promotions, financial rewards and a series of welfare measures in the organisation. At the same time,

some respondents recommended policy supports as useful alternatives for retaining people.

Owner-managers' efforts to retain key employees using policy support

Three of the participants interviewed mentioned government schemes, such as training programmes, taxation policies to support the employment rate and government-matched funding, as a means of encouraging them to manage employees efficiently (PM1, PM8, and PP5). Therefore, they thought the application of government schemes was a useful way to cover a lack of management policies in a company. Indeed, policymaker PM1 said:

'Although this is not the policy of my department, there is a policy scheme funding labour costs to encourage job creation by SMEs. I think owner-managers could use this scheme to manage their employees.'
(Policymaker PM1)

Furthermore, policy-practitioner PP5 commented on a useful scheme to retain core human resources in high-tech SMEs:

'The government is operating a scheme to retain key members by part-funding to match the funding of the company. Many SMEs use this scheme and, thus, SMEs can manage their important human resources in a more stable way than before.' (Policy-practitioner PP5)

Likewise, policymaker PM8 stated:

'The government is supplying a specific scheme to retain skilful employees in high-tech SMEs. Therefore, when SME owner-managers adopt this policy for their employees, they can improve the conditions for retaining them in their companies.' (Policymaker PM8)

Also, policymaker PM10 commented on the useful government scheme supporting the training programme to improve the performance of SME employees:

'SMEs could use various education programmes which have been supplied by government schemes. In these programmes, high-tech SMEs could improve employees' performance.' (Policymaker PM10)

Although there were a few comments about the importance of the owner-managers adopting the policy schemes, these same respondents believed that SME owner-managers needed to consider a wide range of measurements, including policy supports. Furthermore, participants mentioned the critical role of employees to companies. This is discussed in more detail in the next section.

Employees' contributions to the growth of companies

Some participants believed that the efforts and abilities of employees were the foundation for enabling a business to achieve a technological performance and they thought that high-tech SMEs had to attempt to retain skilled employees to avoid losing technological competitiveness (PM1, PM2, PM3, PM8, PM9, PP4, PP8). Policymaker PM3 commented on the contribution of key members:

'SMEs have a lack of human resources compared to larger firms. Therefore, they have to treat key players carefully to avoid losing them to other companies because key members strongly contribute to the growth of high-tech SMEs.' (Policymaker PM3)

All respondents believed that the accumulation of technological capabilities, such as intellectual property and continuous R&D investment, was the engine for driving and maintaining the competitive advantages of high-tech SMEs. As a result, employees having technological abilities could be a significant determiner for acquiring technology. Policymaker PM9 stressed:

'The accumulation of technological capability is a key element for high-tech SMEs' continuous growth and the high-skilled engineers are the primary elements for achieving the technological capability of high-tech SMEs.' (Policymaker PM9)

Despite the significant importance of technology accumulation, SMEs also needed other contributions by employees beyond the technological support of engineers. Policy-

practitioner PP3 emphasised the importance of employees' overall performance for supporting their owner-managers' decisions:

'The growth of the company cannot be achieved by only the owner-manager. Employees' strong support is necessary for the growth of the company. Employees' performance in reacting to the external business environment can support the owner-manager's decisions. Therefore, the growth of the company can be achieved.' (Policy-practitioner PP3)

All participants stressed the importance of the owner-manager. Eight respondents commented on their critical role for to the growth of the company. The relationship between the owner-manager and the employee results in the formation of an organisational culture, and the attitudes of the company are also affected by the organisational environment. The next section will discuss how organisational culture can affect company growth.

6.2.2 Collaborative organisational culture

Organisational culture can affect the employees' attitudes toward their jobs and their organisation. Four respondents thought that organisational culture was associated with retaining people, as well as improving business performance (PM2, PM9, PP3, and PP8). Policy-practitioner PP3 commented:

'Employees' performances are strongly associated with organisational culture. Also, employees are likely to stay in a company when they feel comfortable about communicating with each other.' (Policy-practitioner PP3)

That is, communication between members is associated with a positive organisational culture, and communication could be conducted with a collaborative organisational culture. Indeed, policymaker PM5 emphasised the importance of communication:

'... Also, it needs to make the inclusive and collaborative organisational culture being able to communicate, as well as to understand between members in the organisation. In this organisational culture, members

*could respond to the external business environmental changes’
(Policymaker PM5)*

In addition, employees can gain extra knowledge which can improve their performance via internal communication. Indeed, policy-practitioner PP5 mentioned the necessity of communication:

‘Employees’ performance could be improved by exchanging various information and knowledge. Internally, the company should take the opportunity to support communication between members. As a result, employees can come up with creative ideas for the business.’ (Policy-practitioner PP5)

Also, policymaker PM2 mentioned organisational culture as a way of improving employees’ positive commitment to the company:

‘The owner-manager has to attempt to create an organisational climate where employees do their work voluntarily without being forced to by the owner-manager. Employees’ active actions can positively affect organisational performance. Therefore, the owner-manager should treat employees as colleagues and share profits with them fairly.’ (Policymaker PM2)

Likewise, policy-practitioner PP6 emphasised the role of organisational culture for stimulating employee motivation:

*‘Employees will do their best for the company in a positive organisational culture, allowing them to think about creative ideas freely. Therefore, employees can feel the motivation to improve not only individual performance but also the performance of the company.’
(Policy-practitioner PP6)*

Overall, these results indicate that organisational culture is an element for creating a connection between members, as well as a component for enhancing internal

competitive advantages. In other words, a collaborative organisational culture is associated with the positive performance of the company.

6.2.3 Summary

Policy participants tended to have a belief that the individual performance of the owner-manager was an essential factor in encouraging the performance of employees, as well as enabling company growth. In addition, they thought that the ability of the owner-manager to manage employees can act as a primary element for triggering employee motivation. Furthermore, respondents asserted that high-tech SME owner-managers had to consider training employees because SMEs were constrained in recruiting high-skilled people compared to larger firms. As a result, they emphasised that employees were the resources enhancing internal competitive advantage. Also, they highlighted how a positive organisational culture could encourage the voluntary efforts of employees. In other words, all participants stressed owner-managers' competence and employees' contributions, and the organisational culture enhancing their performance, as being essential to the growth of the company. In particular, policymakers additionally mentioned the usefulness of government schemes supporting training of employees. That is, policymakers suggested adopting government policies as one of the owner-managers' strategic decisions to improve employees' performance. Policymakers also discussed critical external factors that were considered as key elements for the sustained growth of high-tech SMEs and the next section shows their perspectives on the external factors.

6.3 External factors

As mentioned in Chapter 5, high-tech SME owner-managers face various external business factors. As a result, all policymakers delivering policy schemes identified external business factors similar to those identified by owner-managers when considering the difficulties faced by SME owner-managers. Reflecting the opinions of respondents, this section is divided into two sub-sections as figure 6.3: financing and technology, and economic environment and customers.

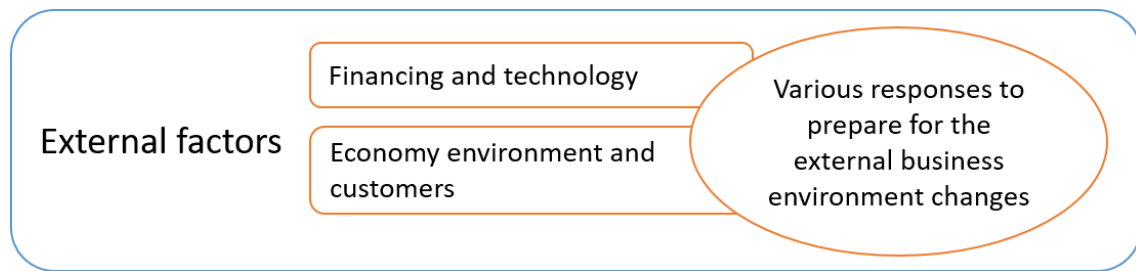


Figure 6.3 Policymakers' perspectives for the critical external factors

Source: Author

6.3.1 Financing and technology

High-tech SMEs tend to focus on the development of technology, and active R&D can be carried out based on sufficient financing capability. That is, SMEs need to have financing capabilities and technological power to achieve sustained growth. When the participants were asked about important external factors influencing the sustained growth of high-tech SMEs, all participants strongly commented that the technological ability of high-tech SMEs was the foundation of competitive advantage and productivity. Likewise, fifty per cent of participants said that financing was a critical factor for investment in additional business infrastructures, such as offices and factories to achieve the sustained growth (PM2, PM3, PM4, PM5, PM8, PM9, PM10, PP1, and PP4). For example, policymaker PM5 pointed out the importance of financing capability:

'As a reaction to the external business environment, the preparation for a financing crisis is a requirement for the sustained growth of SMEs. Therefore, it is more useful to accumulate one's own capital than availing of external financing.' (Policymaker PM5)

Although SMEs' own capital is a factor for making a business stable, not all SMEs can acquire financing by themselves. External funding from the public sectors, banks and venture capitalists (VCs) is of the alternatives to delivering financing. Indeed, policymaker PM4 stated the usefulness of external funding for SME owner-managers:

'When the founder doesn't have sufficient capital to establish a company, public guaranteed loans and funding by venture capitalists are very useful for setting up the business. Therefore, the owner-manager needs to consider this way.' (Policymaker PM4)

The South Korean government financial support system for SMEs is managed by national financing institutes, which offer direct loans, indirect loans and credit guarantees with lower interest rates than bank loans (Yi 2012). Although these public loans support SMEs with low interest rates, there are many restrictions to SMEs' spending this government finance, and SMEs also have to return those loans within fixed periods whereas there is no limit to the investment by venture capitalists in financing a business when there is a demand for a share of the ownership. In a negative view on external funding, owner-manager G(SG), interviewed in Chapter 5, had a plan to return all bank loans, government loans and investment by VCs to protect his ownership and the independent business. In the end, all external financing can be a burden to a business. As a result, SME owner-managers felt the necessity of a certain level of profit to pay for their loans, as well as expanding their business. Policymaker PM9 stressed the need for profitable business growth:

'SMEs introduce not only exogenous funding but also internal capital through various business actions. Above all, profitable growth enables the business to expand, as well as fostering the financial capability to return the debt.' (Policymaker PM9)

Likewise, policymaker PM5 commented:

'SME owner-managers experience a lack of financing ability, business information and resources. Therefore, they do not have sufficient chances to get external funding. I think they might be better to accumulate their own money via sales actions in the business for the future.' (Policymaker PM5)

Although only a few of the group of policy-practitioners mentioned financing, all respondents expressed the belief that technological abilities and technology innovation were resources for business growth in high-tech SMEs. The acquisition of technological abilities can be achieved by internal resources and an external approach. SMEs have different contexts when they start their business, and thus they choose various ways to gain a technological advantage. Policymaker PP4 commented on two approaches for acquiring technology:

'High-tech SMEs need to accumulate the technological ability to achieve business growth. In a way, they can choose the self-development of technology, as well as the merger and acquisition [hereafter M&A] of technology from outside. In line with this, the government supports technology investment and M&As with some policies.' (Policy-practitioner PP4)

Some participants also asserted that technological capabilities were positively associated with the performance of SMEs own research engineers. In other words, they mainly focused on internal technology accumulation rather than external technology acquirement (PM1, PM3, PM5, PM9, PP3, PP5, PP8). Policymaker PM5 said:

'The technology development and accumulation of high-tech SMEs is a basic action to survive and expand their business. High-tech SME owner-managers have to consider how to retain engineers as well as develop creative products.' (Policymaker PM5)

SMEs need skilled engineers to develop high quality of products, and these engineers play a key role as a driver of technology accumulation. In particular, policymaker PM1 illustrated the importance of engineers:

'I believe that a company not engaging in R&D actions cannot achieve sustained growth, and the growth of the company has a positive relationship with R&D investment. Therefore, whichever SME wants to grow has to protect engineers from avoiding the loss of technological advantage.' (Policymaker PM1)

However, it is difficult for SMEs to resolve all of the technological issues by themselves compared to larger firms. Some interviewees commented on the role of venture capitalists, which support the R&D actions of high-tech SMEs (PM2, PM4, and PP4). Policymaker PM4 stated:

'At the beginning of a business, the external funding from capitalists is beneficial to maintaining the business while the company is concentrating on R&D actions.' (Policymaker PM4)

In the end, technology acquirement from external resources can be carried out based on an understanding of the external business environment changes and the customers' interests. Respondents also commented on the importance of the economic environment and customers and their perspectives on these will be provided in the next section.

6.3.2 Economy environment and customers

SME owner-managers recognised the necessity of considering the economic environment to achieve the sustained growth of high-tech SMEs, as shown in Chapter 5. Likewise, some of the interviewed policymakers and policy-practitioners had similar perspectives to the owner-managers of the importance of understanding the economic environment (PM7, PM10, PP2, PP5, and PP6). Policy-practitioner PP5 stated:

'SMEs not only have to estimate and analyse the business environment changes but also should have the ability to prepare and react to those changes faster than competitors.' (Policy-practitioner PP5)

In particular, policymaker PM10 emphasised a wide range of market analysis:

'SMEs need to estimate the volume of potential markets and the possibility of growth. Also, they have to consider the possibilities of getting funding and whether or not there is a market barrier with technology.' (Policymaker PM10)

Some respondents shed light on the critical role of their business networks to respond to the external business environment and to avoid losing customers (PP3, PP5, PP6, PP7, and PM1). That is, they believed that their network could provide diverse opportunities to develop new customer relationships, as well as to maintain established customers. Policymaker PM4 focused on the role of his business network:

'If there is no company with a superior level of technology and all competitors have a similar level of technical ability, the business network can be a useful alternative to cover my lack of resources and to expand the volume of business.' (Policymaker PM4).

Furthermore, the customer base is strongly associated with a distribution network. A third of respondents highlighted the important contribution of a distribution network to expanding their business (PM1, PM2, PM8, PP1, PP7, PP8). Policymaker PP8 stated:

'I think SMEs have to consider their sales network to deliver their products to their customers. If they do not acquire the appropriate distribution network, they cannot sell their products even if they developed unique products in the market.' (Policy-practitioner PP8)

In particular, fifty per cent of the policy-practitioners interviewed emphasised the necessity of the international market. They thought that international business was one of the important responses to external business changes (PP3, PP4, PP5, PP6). Policy-practitioner PP3 said:

'The business environment can be affected by global business changes, and, therefore, SMEs have to prepare for external business changes, including international business. It is essential to prepare for these changes instantly to achieve sustained growth.' (Policy-practitioner PP3)

Although there were different views between the two groups on the external business environment, the participants mentioned the importance of networks and their customer base, and their perspectives were congruent with the one opinion that high-tech SMEs have to recognise the various external business environments and follow the technological trends and market changes.

6.3.3 Summary

Policymakers and policy-practitioners in this study have similar perspectives on the external factors influencing the sustained growth of high-tech SMEs, regardless of their present position. Technology is a fundamental condition of acquiring competitive advantage and financing acts as a foundation for expanding business. Although there are some issues about government financing and VC investment, policymakers recommended the introduction of external funding through government financing and the private sector to grow their business. Participants also mentioned the importance

of their business networks for accessing new customers. In particular, many respondents highlighted the international market as a means of expanding their business steadily. As a result, they believed that high-tech SMEs could achieve sustained growth by expanding their customer bases based on technological ability, financing and business networks.

6.4 The role of policy support

In this chapter, participants pointed out the various factors influencing the sustained growth of high-tech SMEs, such as the owner-manager, the employees, technology financing and organisational culture. Although all of the factors are mainly associated with the business environment of the private sector, all respondents commented on the importance of policy support for stimulating the business actions of SMEs. Of the many policies, the R&D subsidy acts as one of the resources to give SMEs' the opportunity to develop their products. At the same time, policymakers and policy-practitioners mentioned the improvement of efficiency for the development, delivery and implementation of policy. This section shows what respondents think of their policy supports in terms of enabling the sustained growth of high-tech SMEs and illustrates the findings as outlined in figure 6.4.

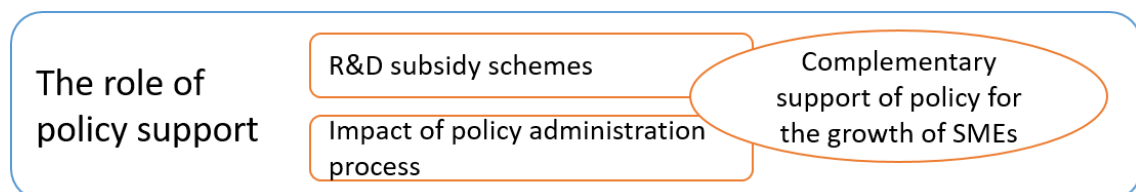


Figure 6.4 Policymakers' perspectives for the policy support

Source: Author

6.4.1 R&D subsidy schemes

Government R&D subsidy schemes have various attributes for policy purposes. Indeed, some of the participants interviewed said that high-tech SMEs could use diverse R&D subsidy schemes based on the stage of the company growth or the R&D purposes (PM5, PM6, PM9, PP3, PP5, PP6, and PP7). Indeed, policy-practitioner PP3 said:

'SMEs can use R&D subsidy schemes as a way to reduce management costs as well as to continue R&D investment to improve technological capabilities.' (Policy-practitioner PP3)

Furthermore, government R&D subsidy schemes have diverse aspects according to the different stages of growth, and they foster R&D collaboration between the industrial and academic sectors. Policy-practitioner PP6 stated:

'SMEs can apply to various R&D subsidy programmes to develop new products, as well as to update established products. They can collaborate with other companies or a university to develop creative products within the government R&D subsidy schemes.' (Policy-practitioner PP6)

R&D collaboration between industry and academia is one of the alternatives for supporting SMEs' lack of human resources. Five participants highlighted the collaborative R&D programme's role in enabling the R&D actions of SMEs (PM1, PM4, PM7, PP5, and PP6). Policymaker PM3 mentioned the R&D collaborative programme:

'At the beginning of the business, entrepreneurs could get much technical help from the university via the collaborative R&D programme and thus they could develop the products.' (Policymaker PM3)

Likewise, policy-practitioner PP5 commented on the important role of the university as a human resource (HR) supplier:

'SMEs have difficulty recruiting engineers, and, therefore, the government supports them to recruit skilful engineers from universities.' (Policy-practitioner PP5)

In other words, some of the respondents interviewed thought that the R&D subsidy was the primary method for stimulating the R&D actions of high-tech SMEs at the beginning of the business, and they believed their active R&D actions could make the business successful.

Despite the many merits of the R&D subsidy, there were some concerns expressed about it. Policymaker PM8 stated:

'The R&D subsidy supports many SMEs as much as possible in distributing the government budget fairly. Therefore, there is a lack of concentration and also it shows a low level of efficacy.' (Policymaker PM8)

The primary contribution of the R&D subsidy is supplying the extra opportunities to support R&D activities of SMEs. But some SMEs relied too much on government R&D subsidy schemes rather than the internal development of their product. As a result, these firms were weakened in terms of the competitive advantages of their technology. Policymaker PM5 was concerned about these side effects of the R&D subsidy schemes:

'The government provides the R&D subsidy directly to SMEs' R&D projects. Some SMEs found it easy to rely on the government R&D subsidy, and some of them did not consider the commercialisation of their R&D projects. They concentrated on getting the government subsidy rather than developing useful products in the market. Therefore, I think the government R&D subsidy has to support big projects such as medicine and future technologies, which are necessary to invest in in the long-term.' (Policymaker PM5)

Likewise, policymaker PM2 had concerns about inefficient R&D support:

'There is too much subsidy-based funding in the government. Therefore, high-tech SMEs are easily constrained by the complicated administration process while they use the R&D subsidy programme to develop their products. This causes a reduction in the efficacy of the policy support.' (Policymaker PM2)

Therefore, R&D subsidy programmes can impose an unnecessary burden on the various contexts of SMEs. To reduce the lack of efficacy of policy support, participants considered improving the policy effectiveness of the policy administration process. Respondents had various views about the relationship between the attributes of policy

support and the efficacy of policy implementation for achieving the growth of SMEs. The perspectives of policymakers and policy-practitioners on these are discussed in the next section.

6.4.2 Impact of policy administration process on SME business

Participants interviewed in this study had diverse roles in the process of policy support. Policymakers in the headquarters office mainly had responsibility for development of the policy, and policy-practitioners in the regional offices delivered and implemented the policy to SMEs. Despite the different roles of both groups, they had similar perspectives on the importance of the administrative process of policy support for SMEs. Participants mentioned that the effects of policy implementation are influenced by various policy purposes. That is, the contribution of policy support to the sustained growth of high-tech SMEs could be changed by discriminatory policy purposes. Many participants pointed to the contribution of the policy to the growth of SMEs (PM1, PM2, PM3, PM4, PM5, PM8, PM9, PM10, PP2, PP5, PP6, PP7, and PP8). For example, policymaker PM1 said:

‘The basic purpose of policy development is aimed at continuing job creation via the sustained growth of high-tech SMEs. The government policy contributes to encouraging the job creation of SMEs, and the job creation of SMEs can help national growth.’ (Policymaker PM1)

Also, policymakers PM3 and PM4 stated:

‘The biggest aim of the government policy is revenue growth, job creation and the regional contribution of high-tech SMEs. It is possible to achieve national economic growth when companies achieve appropriate volume in exporting products, creating jobs and increasing sales revenue.’ (Policymaker PM3)

‘The Korean government is implementing the policy to foster the business environment so that new firms create job opportunities.’ (Policymaker PM4)

Furthermore, policy support has a specific function in forming a business environment indirectly. SMEs can be indirectly influenced by government policies such as taxation and regulation. These factors can be considered as enabling factors as well as impeding factors to a business. Policymaker PM6 commented on the indirect roles of the policy:

'Recently, the government created a regulation-free zone to support high-tech SMEs. SMEs could do experiments without any limitation in this area. Also, there are the public certifications to prove SMEs are technology based and these companies can get extra benefits for R&D investment.' (Policymaker PM6)

The responsibility of policymakers and policy-practitioners can be associated with their views about what stage is more important in policy implementation. Therefore, the efficacy of policy implementation can be changed by the perspectives of policymakers and policy-practitioners. Indeed, policymaker PM1 said:

'First, policy development is the most important. Policy delivery is the second most important process. When a good policy has been developed, the policy can be delivered to SMEs. Therefore, I think both processes are more important than other processes.' (Policymaker PM1)

Policymakers have a responsibility to develop policy and, therefore, they should be focused on development and delivery rather than policy implementation. The view of policymaker PM1 is indicative of this point. Similarly, policymaker PM3 paid attention to the role of feedback in developing policy:

'The policy development which SMEs want to use can improve the efficacy of policy implementation. Therefore, a reflection of policy-demanders' feedback is a crucial element to improving policy.' (Policymaker PM3)

Although policy-practitioner PP5 and PP8 implemented the policy for SMEs at a regional office, they also had the same opinion of policymaker PM3. For example, policy-practitioner PP5 said:

'I think that both the development and the validation of the policy are critical factors because the improvement of the existing policy can be carried out by reflecting the policy demanders' feedback in policy implementation.' (Policy-practitioner PP5)

Likewise, policymaker PP8 pointed out the development and validation of the policy.

'When efficient policies are developed, it avoids time consuming and unnecessary efforts in the administration process. Furthermore, it is possible to decide the sustainability of the policy through the validation of feedback to the policy implementation.' (Policy-practitioner PP8)

Policy practitioners have the responsibility of delivering as well as implementing the policy to SMEs at regional offices. But policy-practitioner PP5 and PP8 had a belief that the development and the validation of the policy was more important than the implementation, which is their responsibility, because they thought the delivery and the implementation could be successfully carried out based on a reasonable development of the policy by taking account of sufficient feedback.

Despite the positive purposes of the policy implementation, there are also some side effects to policy efficacy. Policymaker PM10 was concerned about issues around the purpose-oriented implementation of the policy.

'The government set the expected results of policy implementation. For example, the policy support relevant to the employment rate had set the potential aim of increasing the employment rate. This is an unreasonable prospect. Employment growth is the result of the reasonable implementation of a policy. Therefore, I think the government has to adopt policy in a wide view rather than for a narrow target' (Policymaker PM10)

Policy support could also operate as an unnecessary intervention in some industries because the impact of the policy can have unexpected results due to the characteristics of various industries. Policymaker PM6 gave the example of this case:

'It is necessary to disentangle the constraint regulation to foster new IT complex industries such as the autopiloting of drones and remote medical services. But the government has regulated many areas to protect individual privacy and safety. This regulation intervenes to foster those industries. In other words, some conflicts between the entry of new business and the established social system may have arisen...' (Policymaker PM6)

Policymakers have difficulty exactly knowing which SMEs wish to seek help from the policy support because of a lack of contact points between policymakers and SMEs. Therefore, government policy tends to focus on representative issues such as financing and technology related to the SME business. Policymaker PM6 also commented on this point of view:

'SMEs have difficulties in installing high-priced machines and measurements because of a lack of financing capability. Typical government funding is insufficient to acquire these. Therefore, the government might be better at building infrastructure allowing SMEs to use various things such as machines precision devices, and premises.' (Policymaker PM6)

Ultimately, policy purposes can affect the various outcomes of policy implementation. Also, policy support can be carried out in a positive or a negative way, depending on the regulations.

6.4.3 Summary

As discussed in Chapter 2 and Chapter 3, the R&D subsidy was perceived as a critical factor for the R&D actions of high-tech SMEs in terms of the views of policymakers and policy-practitioners. Furthermore, the perspectives of participants interviewed on the administration process of the policy were associated with the quality of the policy outcomes. In the interviews, the data show that the policymakers' present positions and responsibilities are also considerable factors for improving the impact of the policy support for SME business. Besides, all administration processes are decided by

policymakers' willingness, and, thus, policymakers' attitudes toward policy implementation are related to policymakers' perspectives of corporate governance in public sector. Therefore, the next section will discuss the impact of policymakers' attitudes on corporate governance of public sector on policy support.

6.5 Impact of corporate governance on policy implementation

There are multiple stages to the formation of government policy, ranging from policy development to policy implementation. These steps are carried out by policymakers who have various responsibilities and occupy various positions. Therefore, the positive effects of policy support can be affected by the organisational performance. As mentioned, participants are divided according to their roles in the process of policy implementation. The group of policymaker (PMs) is mainly concentrated on developing policy while the group of policy-practitioner (PPs) have the responsibility of delivering and implementing policy to SMEs.

In the regional offices, policy-practitioners PPs have the responsibility of implementing policies, and their administration process is perceived as the dimension of bottom-up in terms of policy implementation (Urwin and Jordan 2008) whereas at the level of the central office, the administration process of policymaker PMs is perceived as a top-down approach. Thus, they can be limited in understanding the needs and the context of SMEs, and the ways of effectively delivering policy (Fuller-Love et al. 2006). In other words, the perspectives of policymakers on policy implementation can be formed by their experiences during the administration process. The administration process of the policy is based on the organisational structure, and policymakers' behaviours may be affected by the form of corporate governance. Therefore, this section discusses the impact of corporate governance on policymakers' perspectives and behaviours as outlined in figure 6.5.

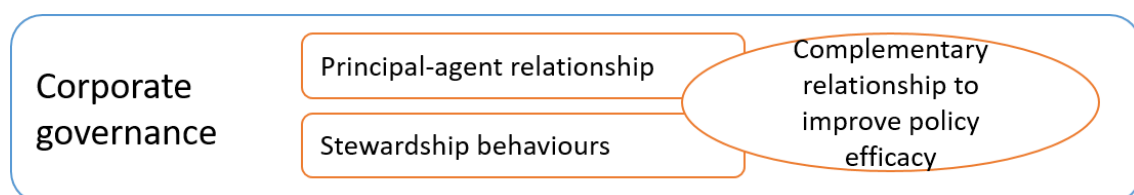


Figure 6.5 Policymakers' behaviours and policy efficacy

Source: Author

6.5.1 Principal-Agent relationship of policymakers and the policy efficacy

All participants tended to abide by the policy regulations when they implemented policies for SMEs. They believed a stringent administration process was the fundamental way to treat SMEs fairly. At the same time, the government and policymakers wanted to implement the policy according to the manual. Therefore, they demanded policy practitioners to deliver the policy to SMEs according to the manual. This aspect illustrates the corporate governance of the principal-agent relationship as per Pierce's study (1989). When it comes to comparing this, the government and policymakers at the head office act as a principal and the policy practitioners can be perceived as agents. Indeed, the policymaker tends to be depicted as an element of the principals, following the government's political purposes. Policymakers PM4 stated:

'The trend of government policy is aimed at achieving the policy purpose within the decision-making of the government policy. Therefore, the pattern of policy implementation exhibits a top-down nature.' (Policymaker PM4)

Likewise, policy-practitioner PP3 commented on the attributes of the government policy:

'The government policy has a complicated relationship with the parliament, finance department and private business. Therefore, policymakers have difficult doing their work freely, and they have to abide by the regulations and manuals.' (Policymaker PP3)

Also, the attitudes of policymakers and policy practitioners towards policy implementation can be affected by their current tasks. Indeed, policymaker PM3 and PM10 said:

'I meet with other government department policymakers who are related to the remit of my department when I develop the policy. In my position, I tend to make a decision passively within my obligations to avoid conflicting with other departments.' (Policymaker PM3)

'Policymakers tend to work only within the brief given by the government due to worrying about the monitoring of their work by government inspectors and auditors' (Policymaker PM10)

Policymaker PM3 works at head office and had met many policymakers from other government departments. Therefore, he had a difficulty in introducing his own thinking into the policy to avoid conflicting with other departments. Policymaker PM10 also worried about external inspection of his work, whether or not he was following the rules. Likewise, policy-practitioner PP8 thought about his responsibility narrowly:

'Policy-practitioners have to carry out their responsibilities and work under fixed government regulations, and, therefore, we are not empowered to flexibly implement policy.' (Policy-practitioner PP8)

Purpose-oriented policy implementation according to the regulations can result in positive outcomes, such as increasing employment and new firm creation. At the same time, it reduces the efficacy of policy implementation because there are no voluntary extra works and contributions. In other words, although many participants agreed that the role of regulation was significant for implementing the policy fairly, they also pointed out the individual active contributions and efforts made to improve the efficacy of policy implementation. Indeed, policymaker PM8 commented on the impact of individual efforts:

'I didn't have much influence on the development of the policy with my abilities and efforts. But, I did support the implementation process. When the policy is formed, individual policymaker can't change this existing policy. But, individual policymakers can take small steps in the evolution of the policy. That is the responsibility of the policymaker.'
(Policymaker PM8)

To sum up, policy development for SMEs is affected by the intention of the regime. As a result, policymakers concentrating on the development of a policy tend to support the aim of the government's political agenda as it is related at the national level. In this process, the government and policymakers act as a principal, and policy-practitioners

contribute as an agent, in implementing and adapting the policy to the business world. In terms of the view of principal-agency theory, the attributes of policy development and policy implementation exhibit the stringent form of abiding by the regulations and the direction of government policy rather than reflecting the individual abilities of policymakers. The government wants to achieve policy purposes and respondents do their best to complete their obligations in the process of implementing the policy. This corporate governance structure can result in distinguished outputs via a transparent administration process but it is difficult to expect to see efforts beyond the policy purpose because policymakers and policy-practitioners tend to be confined to their roles to within their responsibilities and obligations. However, some participants had different views on the process of policy development and policy implementation. Although their opinions are not representative of the opinions of all the people in the government, some alternatives are suggested in the next section.

6.5.2 Stewardship of policymakers and the policy efficacy

Although the regulation of policy administration is perceived as the foundation of policy implementation by all participants, some respondents also thought that empowerment was a critical element for improving the efficacy of policy implementation. Regarding the aspect of respondents' attitudes toward policy implementation, this section shows some evidence that the efficacy of policy implementation could be changed by the extra efforts of policymakers and policy-practitioners. Policy development is carried out based on the feedback on policy implementation, and therefore, this feedback enables the policy to fit with policy demanders' opinions. For example, policymaker PM10 stated:

'Distinguished individual ability is a very critical factor to be able to improve the process of policy development and policy implementation. Although policymakers are constrained by a stringent policy monitoring system, individual abilities and knowledge are the basic conditions for forming a good policy through reflecting policy demanders' feedback on policy implementation.' (Policymaker PM10)

Policymaker PM10 recognised the limitation of the policymakers. However, he surmised that individual abilities and efforts could change the policy, bringing it close to policy

demanders' queries. Likewise, policy-practitioner PP6 pointed to the individual ability to understand policy stakeholders:

'Policy-practitioners need to have the creativity and a network of stakeholders such as policy advisers, SME owner-managers and employees to adopt and deliver the policy in the field. If these abilities of policy-practitioners are poor, it is difficult to implement the policy appropriately.' (Policy-practitioner PP6)

A third of participants interviewed held the belief that individual performance with voluntary efforts could help to flexibly interpret the regulations within the administration process (PM1, PM2, PM9, PM10, PP2, and PP7). They believed that their efforts resulted in a good performance and a high level of policy satisfaction. The example of policymaker PM2 shows this:

'I implemented one scheme to support the sales network of SMEs. I thought it would be fine if I did my work within the regulation. But I interpreted the regulation on behalf of SMEs and created a route to save the budget. I suggested to SMEs a way of spending the government subsidy without wasting it.' (Policymaker PM2)

The government is structured according to the regulations and the constitution; the direction of policy is decided by the policy purposes of the regime. As a result, there is a policy implementation gap between policymakers and policy demanders. Some participants had felt difficulties at reflecting their own ideas to develop and renovate the policy based on demanders' feedback on the policy (PM5, PM8, PP3, PP4, and PP8). Indeed, policymaker PM5 expressed his perception of the issue of policy implementation:

'I think the element of reducing the policy effect is from the isolated decision-making process of the government and a top-down approach in the administration process. Nevertheless, there are no alternatives in my view. So, I think regional office policy practitioners have to make more efforts to deliver appropriate policies for SMEs in time. Also, it is

necessary to get exact feedback from policy demanders. In this process, the individual ability of policymakers strongly affects the efficacy of policy implementation. When I began as a policymaker, I strictly applied the policy support to SMEs according to the manual. But I managed the policy implementation flexibly when I became an experienced policymaker. Therefore, I could help SMEs more than before.’ (Policymaker PM5)

There is some flexibility to interpreting the regulations and procedures by policymakers and policy practitioners. In other words, the basic concept of policy implementation manuals does not demand too strict an application for all policymakers and policy practitioners in the government because policies can be implemented more flexibly than regulations.

Likewise, although policy implementation is controlled by stringent regulations, policymaker PM8 emphasised the importance of the abilities of individual policymakers to contribute to a gradual transition of the policy:

*‘Individual efforts cannot directly influence the development of the policy, but individual abilities and efforts could affect the implementation process and gradual improvement of the policy.’
(Policymaker PM8)*

The individual ability of policymakers and policy practitioners can make a difference in policy implementation, and thus, their abilities can be perceived as a critical factor to enhance the efficacy of policies. Although workers in the public sector find it difficult to engage in subjective decision-making to improve the efficacy of their work, their voluntary efforts to improve their abilities can result in positive outcomes more than a stringent policy. That is, individual voluntary efforts with the policy implementation can be linked with stewardship perspectives emphasising their own responsibilities to supporting SMEs.

6.5.3 Summary

The government has a hierarchical structure from the head office of the department to the regional offices. These components have different purposes and the policy workers in each place also have various responsibilities. But all participants commonly attempt to abide by the regulations when they develop, deliver and implement the policy to SMEs. Therefore, the attitudes of policymakers and policy-practitioners toward the administration process are close to this aspect of the principal-agent relationship. At the same time, some of the participants stressed the individual efforts to flexibly interpret the policy manuals for the improvement of the efficacy of policy implementation for SMEs. That is, these types of attitudes can be related to their responsibilities for their work and also linked with the aspect of stewardship behaviours.

Given the critical role of policy support on the growth of SMEs, policy effectiveness is an important element of fostering sustained growth of high-tech SMEs. Thus policymakers, as the operators for policy implementation, could be perceived of as a key element of policy support. As a result, policymakers' stewardship behaviour for the policy support of SMEs is also one of the critical factors influencing the sustained growth of high-tech SMEs.

6.6 Conclusion

Policymakers (**PM**) and policy-practitioners (**PP**) participants in this study developed and implemented policies which can stimulate the growth of high-tech SMEs. From these experiences, they formed their perspectives on the factors influencing the sustained growth of high-tech SMEs. Both group of policymakers believed owner-managers' competence, employees' contributions, and a collaborative organisational culture were critical factors for the growth of high-tech SMEs in line with owner-managers' perspectives discussed in Chapter 5. Additionally, policymakers highlighted the worth, to SME owner-managers, of adopting policy support to train employees. In particular, both policymakers' groups have stressed the importance of skilled employees' contributions to technology acquisition because they believed technology advantages are significantly affected by high-skilled employees' performance.

In terms of the external factors, the group of policymaker PMs pointed to financing and technology as elements to achieve the sustained growth of SMEs whereas, only a few of the group of policy practitioners mentioned financing and stressed the importance of technological ability. Policymakers believed high-tech SMEs would achieve sustained growth with various alternatives, such as business networks, new market entry, and customer base expansion.

The aspects of corporate governance in the public sector are different to the private sector. However, governmental corporate governance is also influential on the policy efficiency and effectiveness. Indeed, participants followed the regulations in their policy support process for high-tech SMEs. Their regular administration processes showed similar patterns of principal-agent relationship whilst they supported the necessity of stewardship behaviours to improve policy efficacy. That is, they said that flexible policy implementation with stewardship behaviours is positively associated with the growth of SMEs.

Both groups have different views, but their perspectives resulted in similarities overall. Of the interviewed participants, twelve had experiences as policymakers and policy practitioners in the past. Although respondents' characteristics were not clearly distinguished, this study examined these two groups to confirm some potential differences according to their current positions. Indeed, some findings in this chapter showed how their current positions and responsibilities affect their individual perspectives at some point, such as through the impact of financing (emphasised by the policymakers in head office) and of international markets on expanding the business (emphasised more by policy-practitioners in regional offices).

To sum up, policymakers and policy-practitioners have similar perspectives to owner-managers' in Chapter 5 in terms of the factors influencing the sustained growth of high-tech SMEs. Although policymakers and policy-practitioners work in an inflexible government organisation, their individual experiences and flexibility also influence the policy implementation. This section exhibited explored the attitudes of respondents in the public sector and more discussion on the findings will be reviewed in Chapter 8: Discussion.

Given the main components of the organisation, the study also needs to consider the perspectives of employees on the growth of companies. As discussed in Chapter 2, many studies have explored the contributions of employees and the impact of their commitment on the growth of the company. With this in mind, Chapter 7: Findings (Employees' perspectives) shows the attitudes of employees toward the factors that affect business performance based on the results of the online survey.

CHAPTER 7 FINDINGS: Employees' perspectives

7.1 Introduction

Employees' perceptions of the growth of their companies can be changed by their attitudes towards various factors such as job satisfaction, working conditions and the management styles of the owner-managers. Indeed, employees' attitudes, such as commitment and job satisfaction, affect the improvement of business performance (Fisher et al. 2010). Also, employees' job retention rates and contribution to the organisation are affected by various factors, such as working conditions, management style and job satisfaction (Peccei and Rosenthal 2001; Taplin and Winterton 2007). These attitudes, such as work retention rates and job satisfaction, are affected by employees' individual characteristics (Lee and Way 2010). That is, employees' characteristics can affect their attitudes, and their attitudes can change business performance.

Based on the literature review (Sections 2.3.1 and 2.3.2) and the methodology (Section 4.5.2), employees' characteristics are identified by age, job experience, their level of responsibility and the period in which the employee has worked for the organisation, given that social culture, organisational culture and individual experiences and contexts are considered. Employees' attitudes are divided into three categories, reflecting the factors considered in the previous studies (Sections 2.2.3 and 2.3.2) as essential attitudes influencing organisation growth: motivation, collaborative organisational culture and management style. Four hypotheses, **H1-H4**, with sub-hypotheses, were used to validate the impact of employees' characteristics and their attitudes to various factors influencing the growth of their organisations. The four hypotheses are described in Table 7.1. Sub-hypotheses and variables will be explained later in section 7.2.

Table 7.1 Primary hypotheses used for validation

<i>H</i>	Hypothesis	Sub-hypothesis and variables
1	Certain individual characteristics of the employee are positively associated with employee motivation .	See Table 7.2
2	Certain Individual characteristics of the employee are significantly associated with forming a collaborative organisational culture .	See Table 7.3
3	Certain individual characteristics of the employee are positively associated with the employees' awareness of the functional management style of the owner-manager.	See Table 7.4
4	Employees' attitudes toward motivation, the collaborative organisational culture and the management style of the owner-manager are positively associated with their perceptions of growth of the company.	See Table 7.5

As discussed in section 4.4.3, survey questionnaires were designed taking account of the Workplace Employment Relations Survey UK 2004, which was carried out to investigate employees' various perspectives on their relationships with their organisation and their owner-managers. Forty questionnaires provide the demographic information and employees' perceptions of their job, the organisation and employees, organisational culture, owner-managers' management styles and firm growth. Some of these questions are not exactly linked to this study's specific research question, even though all questionnaires are relevant to the conceptual research purposes. The number of respondents came to 366, but the analysis was carried out on 330 respondents, excluding those with missing values for variables. In Chapter 4: Methodology, this study examines whether or not the data includes outliers. The survey data has ordinal categories with the same interval (e.g. 1 to 6) and all variables in this study have a reasonable frequency for each category (see Section 4.4.3 and Appendix 6).

The analysis of the survey data has been conducted by an ordered logistic regression, using STATA software (Ver. 15.1). From the analysis, the findings in this chapter show that the employees' responsibility is the most significant characteristic affecting their attitudes towards various business factors, and employees' attitudes are positively

associated with their perceptions of company growth. This chapter comprises the statistics, the results of the hypotheses test and the analysis of the responses to the open-ended questions.

7.2 Hypotheses, variables and descriptive statistics

Hypotheses of this study test the impact of the individual characteristics of the employees and their attitudes to the factors influencing the sustained growth of the SMEs. Many previous studies have found that individual characteristics such as age, job experiences, and long-term work and employees' positive attitudes towards various factors such as motivation, participation and collaboration are positively associated with the business performance and the growth of the company (see Section 2.3.2). Therefore, the hypotheses of this study have validated the positive relationship with dependent variables. The variables chosen in this study were obtained from the survey questionnaires, which comprise the demographic variables regarding respondents' personal information (Q1 to Q9) and employees' attitudes to various factors affecting the growth of their companies (Q10 to Q40). Employees' attitudes are classified into three main categories: perceived attributes toward their job (Q10 to Q14), perceived organisational culture and owner-managers' management style (Q15 to Q29) and perceived factors influencing the growth of the firm (Q30 to Q40). This section comprises hypotheses, variables and the summary of statistics.

For hypotheses 1, 2 and 3, the independent variables are common to each other and this section shows the dependent variables for each hypothesis and the independent variables for four hypotheses (1 to 4).

7.2.1 Hypothesis H1 Employee motivation

For hypothesis **H1**, the motivation of the employee is used as the dependent variable as Table 7.2. The variable *loyal*, which refers to the employee's loyalty to the organisation, and the variable *selest*, which refers to the employee's own contribution to company growth, represent the employee's motivation. Employees' loyalty can affect the growth of the firm (Antoncic and Antoncic 2011) and their motivation is linked with self-efficacy (Cherian and Jacob 2013), which is relevant to self-esteem (Carson et al. 1997). Although

self-efficacy does not perfectly explain employees' own contributions to company growth, it does illustrate the importance of employees' willingness to contribute to company growth. Therefore, the findings of **H1a** and **H1b** are represented later in this chapter.

Table 7.2 Dependent variables for hypothesis H1

H	Hypothesis	Characteristics	Dependent variables
1	Certain individual characteristics of the employee are positively associated with employee motivation .	H1a Loyalty of the employee to the organisation is positively associated with age, responsibility, previous work experiences and long-term working.	loyal the loyalty of the employee to the organisation
		H1b The importance of the employees' self-assessed role in the organisation is positively associated with age, responsibility, previous work experiences, and long-term working.	selest the employee's own contribution to the company growth

7.2.2 Hypothesis H2 Organisational culture

For hypothesis **H2**, organisational culture is used as the dependent variable as Table 7.3. Collaboration between employees, *collab*, value-sharing between members' *shvalue* and employees' participation in decision-making, *particip*, can be explained by the organisational culture. Indeed, Rashid et al. (2003) discussed organisational culture as a factor influencing the commitment of employees to the company, while Yang (2014) asserted that managers have to be aware of employees' characteristics and share information with them to maximise their performance (Yang 2014). The findings of the testing of hypotheses H1a and H1b are shown later in this chapter.

Table 7.3 Dependent variables for hypothesis H2

<i>H</i>	Hypothesis	Characteristics	Dependent variables
2	Certain individual characteristics of the employee are significantly associated with forming a collaborative organisational culture.	H2a Collaboration between members is positively associated with age, responsibility, previous work experiences and long-term working.	collab collaboration between members
		H2b Value-sharing between members is positively associated with age, responsibility, previous work experiences and long-term working.	shvalue value-sharing between members
		H2c Participation in decision making is positively associated with age, responsibility, previous work experiences and long-term working.	particip participation in decision making

7.2.3 Hypothesis H3 Functional management skills

For hypothesis **H3**, the management style of the owner-manager is used as the dependent variable as Table 7.4. This variable *funcmng* focused on the functional management skills of the owner-manager to organise employees according to the skills of employees. Orpen (1997) mentioned that the relationship between mentor and mentee can improve employee attitudes regarding their motivation and commitment. Likewise, Almansour (2012) asserted that the manager's leadership style can affect the performance of the business. Therefore, hypothesis 3 validates the relationship between the individual characteristics of the employee and their attitudes toward the management style of the owner-manager.

Table 7.4 Dependent variables for hypothesis H3

<i>H</i>	Hypothesis	Characteristics	Dependent variable
3	Certain individual characteristics of the employee are positively associated with employees' awareness of the functional management style of the owner-manager	Functional management of the owner-manager is positively associated with age, responsibility, previous work experiences and long-term working.	<i>funcmng</i> the functional management skills of the owner-manager to organise employees according to the skills of employees

7.2.4 Hypothesis H4 Perception of growth

For **H4**, employees' perceptions of the growth of the firm are used as the dependent variables as Table 7.5. The variable *allgrw* describes employees' perceptions for the growth of the company by all members, and the variable *pergrw* represents employees' perceptions for the contribution of personal performance to the growth of the company, respectively. Gabrielsson et al. (2014) found that the improving of internal resources was positively associated with the performance of high-growth firms. Given the important role of internal resources, **H4** is aimed at confirming the impact of employees' attitudes on forming employees' perceptions with regard to the growth of the company.

7.2.5 Independent variables for hypotheses H1 to H4

For hypotheses **H1**, **H2** and **H3**, this study used four individual characteristics of the employee: the age band of the respondent, *age*, the current responsibility of the respondent in the company, *res*, the work experience, whether or not respondents worked in another organisation in the past, *first*, and the period the employee has worked in the current organisation, *reten*. Job satisfaction and engagement of the employee act as the essential elements for determining the intention to remain in the company (Lu et al. 2016). Also, job satisfaction can affect organisational performance

(Bakotić 2016). In addition, long-term working and high-skilled people are perceived as critical factors for influencing the continuous growth of high-tech SMEs (Park et al. 2019).

Table 7.5 Dependent variables for hypothesis H4

<i>H</i>	Hypothesis	Characteristics	Dependent variables
4	Employees' attitudes toward motivation, the collaborative organisational culture, and the management style of the owner-manager are positively associated with their perceptions of growth of the company.	H4a The employees' perceptions of the responsibility of all members to the growth of the company is positively associated with employees' attitudes towards the motivation, the collaborative organisational culture and the management style of the owner-manager.	<i>allgrw</i> the growth of the company by all members
		H4b The employees' perceptions of the contribution of personal performance to the growth of the company is positively associated with employees' attitudes towards the motivation, the collaborative organisational culture and the management style of the owner-manager.	<i>pergrw</i> contribution of personal performance to the growth of the company

Therefore, this study has chosen these four individual characteristics as the independent variables for describing the important representative characteristics of the employee.

For **H4**, employees' attitudes toward the motivation (*loyal, selest*), the organisational culture (*collab, shvalue, particip*) and the management style of the owner-manager *funcmng* are used as independent variables to test the relationship with the variables *allgrw* and *pergrw*. Many studies have discussed the factors influencing the growth of the company: experienced know-how and motivation (Littunen and Virtanen 2006), employee motivation and the organisational culture (Levie and Lichtenstein 2010) and motivation (Gupta, P.D. et al. 2013). Exchanging various opinions between members leads to the formation of the collaborative organisational culture (Boer et al. 2005). These are made according to the owner-manager's management skills and the

professional management style of the owner-manager is positively related to the sustainable growth of high-growth firms (Davila et al. 2010). Therefore, **H4** tests the relationship between employees' attitudes on the various factors mentioned above and their perceptions of the growth of the company.

7.3 Summary of statistics

The dependent variables of this study have a wide range of attributes in terms of employees' attitudes. The hypotheses tested in this study are aimed at exploring the specific attitudes of employees related to motivation (*Q15_loyal*, *Q18_selest*), the organisational culture (*Q16_collab*, *Q17_shvalue*, *Q26_particip*), owner-managers' management styles (*Q20_funcmng*) and the aspect of growth employees believed (*Q37_allgrw*, *Q38_pergrw*). The independent variables are measured by the ordinal number from one to four (*age*, *reten*), from one to three (*res*) and the binomial number (*first*). All dependent variables are measured with a number, from one to six ('strongly disagree' to 'strongly agree'). One to three are: 'strongly disagree', 'disagree', 'slightly disagree'. Four to six are: 'slightly agree', 'agree', 'strongly agree'. Table 7.6 on page 193 describes the summary of descriptive statistics, including the meaning of each variable, and more detailed information is shown in Appendix 3.

In Table 7.6, a summary of descriptive statistics explains some attributes and the meanings of each variable. Indeed, the age band is divided into four categories: people in their 20s, in their 30s; in their 40s; and in their 50s. Both the median of 2 and the mean of 2.169 indicate where the central point of the age range is located, and the majority of the distribution of the respondents' age is in the 30s. The mean of the age is slightly larger than the median. The responsibility of the respondents is identified at three levels: employee (normal worker), leader and manager. The mean value of 1.339 and the median of 1 show that the majority of respondents are ordinary employees rather than leaders or managers. In the case of the variable, *particip*, the variable is categorised according to the level of agreement on the employees' perceived participation in decision-making. The median of 4 and the mean of 3.542 demonstrate that the employees' attitudes towards participation in decision-making is relatively lower than the median. The variable *allgrw* describes how the growth of the company

is the responsibility of all members. The level of the employees' perceptions of responsibility to the growth of the company is categorised according to six categories, from 'strongly disagree' at level 1 to 'strongly agree' at level 6. The median of 5 and the mean of 4.939 explain how the majority of respondents positively agree with the responsibilities of all members for the growth of their companies.

Table 7.6 Summary of descriptive statistics

Variable (the meaning of the variable)	Obs	median	Mean	Std. Dev.	Min	Max
age (age band of the employee)	330	2	2.1697	0.7324	1	4
res (responsibility of the employee)	330	1	1.3394	0.5886	1	3
first (whether or not the current job is the first one)	330	1	0.5879	0.4930	0	1
reten (the period the employee has worked for the organisation)	330	3	2.5909	1.2076	1	4
loyal (loyalty to the organisation)	330	5	4.3121	1.1310	1	6
selest (the employee's own contribution to the company growth)	330	5	4.5061	0.9620	1	6
collab (collaboration between members)	330	5	4.8091	0.7970	1	6
shvalue (value-sharing between members)	330	5	4.4485	1.0130	1	6
particip (participation in decision making)	330	4	3.5424	1.3837	1	6
funcmng (functional management of the owner-manager)	330	5	4.2697	1.1285	1	6
allgrw (the growth of the company by all members)	330	5	4.9394	0.8266	2	6
pergrw (contribution of personal performance to the growth of the company)	330	5	4.6758	0.7842	2	6

7.4 Statistical significance between variables

In Table 7.7, the statistical analysis shows the number of observations, the correlation coefficients and the p-value in terms of a 5% significance level. A correlation analysis of

the dependent variables (*loyal, selest, collab, shvalue, particip, funcmng*) shows that they are statistically significant for at least one of the four individual characteristics of the employee (*age, res, first, reten*) in Table 7.7. In particular, the responsibility of employees shows a statistic significance with all dependent variables: the level of loyalty ($r=0.215, p<0.05$), self-esteem ($r=0.301, p<0.05$), collaboration ($r=0.197, p<0.05$), value-sharing ($r=0.249, p<0.05$), participation in decision making ($r=0.132, p<0.05$) and owner-managers' functional management ($r=0.132, p<0.05$) .

Both of the variables *allgrw* and *pergrw*, mentioned as the perceptions of the employee for the growth of the company, have a statistical significance with all dependent variables, which are relevant to employees' attitudes. In particular, the employees' attitudes to loyalty were relatively higher correlated compared to other attitudes. The correlation between *loyal* and *allgrw* has statistical significance ($r=0.313, p<0.05$). The employees' self-assessment for their important role in the organisation *selest* exhibits higher correlations ($r=0.452, p<0.05$) than other attitudes with *pergrw*, which describes employees' perceptions of the contribution of personal performance to the growth of the firm. The variable *selest* represents higher correlations with all independent variables that describe the characteristics of respondents: age of respondent (*age*: $r=0.302, p<0.51$), the responsibility of respondents (*res*: $r=0.301, p<0.05$), whether it is their first job or not (*first*: $r=0.121, p<0.05$), and the period the employee has worked for the organisation (*reten*: $r=0.226, p<0.05$). Furthermore, self-esteem, *selest*, has relatively higher correlations than other attitudes, with both outcomes (*allgrw*: $r=0.249, p<0.05$) (*pergrw*: $r=0.452, p<0.05$) related to the growth of the company.

In the correlation analysis, the relationship between variables was examined to see the statistical significance. The basic model is statistically significant, and each hypothesis test was carried out via an ordered logistic regression analysis, which focuses on finding a significant relationship between independent variables and dependent variables, that is, having meaningful sequential measurements of more than two.

Table 7.7 Inter-correlated matrix of the study variables

(n=330)

Variable	1 age	2 res	3 first	4 reten	5 loyal	6 select	7 collab	8 shvalue	9 particip	10funcmg	11 allgrw	12 pergrw
1 age	1.0000											
2 res	330											
	0.5428*	1.0000										
3 first	0.0000											
	330	330										
4 reten	0.2195*	0.1693*	1.0000									
	0.0001	0.0020										
5 loyal	330	330	330									
	0.4877*	0.3242*	-0.0135	1.0000								
6 select	0.0000	0.0000	0.8075									
	330	330	330	330								
7 collab	0.1597*	0.2148*	0.1224*	0.1071	1.0000							
	0.0036	0.0001	0.0262	0.0519								
8 shvalue	330	330	330	330	330							
	0.3091*	0.3077*	0.1206*	0.2258*	0.3516*	1.0000						
9 particip	0.0000	0.0000	0.0284	0.0000	0.0000							
	330	330	330	330	330	330						
10funcmg	0.1702*	0.1969*	0.0544	0.1018	0.5552*	0.4713*	1.0000					
	0.0019	0.0003	0.3242	0.0648	0.0000	0.0000						
11 allgrw	330	330	330	330	330	330	330					
12 pergrw	330	330	330	330	330	330	330	330				

* $p \leq 0.05$

Variable	1 age	2 res	3 first	4 reten	5 loyal	6 select	7 collab	8 shvalue	9 particip	10 funcmg	11 allgrw	12 pergrw
8 shvalue	0.1716*	0.2486*	0.1765*	0.0858	0.5911*	0.3777*	0.5393*	1.0000				
	0.0018	0.0000	0.0013	0.1197	0.0000	0.0000	0.0000					
	330	330	330	330	330	330	330	330				
9 particip	0.0229	0.1315*	0.0703	-0.0942	0.3596*	0.2224*	0.1907*	0.4049*	1.0000			
	0.6790	0.0168	0.2029	0.0876	0.0000	0.0000	0.0005	0.0000				
	330	330	330	330	330	330	330	330				
10 funcmg	0.0695	0.1318*	0.0693	-0.0125	0.4197*	0.3303*	0.3345*	0.4389*	0.5114*	1.0000		
	0.2080	0.0166	0.2094	0.8215	0.0000	0.0000	0.0000	0.0000	0.0000			
	330	330	330	330	330	330	330	330	330			
11 allgrw	0.0923	0.0049	0.1772*	0.0086	0.3129*	0.2489*	0.2961*	0.2758*	0.1298*	0.2424*	1.0000	
	0.0940	0.9290	0.0012	0.8766	0.0000	0.0000	0.0000	0.0000	0.0183	0.0000		
	330	330	330	330	330	330	330	330	330	330		
12 pergrw	0.0908	0.0745	0.0621	0.0617	0.2584*	0.4519*	0.3189*	0.2295*	0.2046*	0.2262*	0.3447*	1.0000
	0.0996	0.1769	0.2603	0.2636	0.0000	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000	
	330	330	330	330	330	330	330	330	330	330	330	

7.5 Results of the analysis of the hypotheses

Employees occupy different contexts in the organisation, and thus their attitudes to the organisation could be diverse. This section demonstrates the findings of the four hypotheses by interpreting the results of an ordered logistic regression, as illustrated in Tables 7.3 to 7.6. These tables show the likelihood ratio chi-squared value with a p-value for each model, the coefficients, proportional odds ratios, the p-values and the z-values. The odds of the dependent variables illustrate the log odds of being at a higher level versus lower categories when the specific independent variable increases by one unit (e.g. from 0 to 1), given that all the other variables in the model are held constant. In other words, the odd ratio explains the probability that the specific dependent variable can be involved in the sector of a higher specific value compared to lower categories when a specific independent variable increases by one unit.

7.5.1 Individual characteristics of the employees and their attitudes

Individual characteristics, which were categorised according to age, responsibility, job experience and the period which the employee worked for the organisation are defined as the independent variables to validate the hypotheses relevant to employee motivation (*selest*, *loyal*), organisational culture (*collab*, *shvalue*, *particip*), and management style of the owner-manager *funcmng*. In Tables 7.8 to 7.10, all the models versus the employees' individual characteristics (*age*, *res*, *first*, *reten*) are statistically significant with a chi-square with the two tail p-value test less than 0.05 (the significance level of 5%). In each Table, the shaded part highlights statistical significance between variables for each hypothesis.

As referred to in Table 7.2, sub-hypothesis H1a and H1b are analysed and show the results of testing in Table 7.8. In Table 7.8, for the ordered logistic regression of the variable *loyal* (loyalty to the organisation), the observations are 330 and the likelihood ratio chi-square is 24.51 with $p < .05$. This model is also statistically significant as a whole. However, this model shows a significant relationship only for the responsibility of the employee *res* with odds of 2.01, with a p-value of 0.001. That is, the likelihood of

employees' loyalty is twice (2.01) as high compared to the low and middle categories of *loyal* for each increase at the responsibility level.

In the analysis of the variable *selest* (the employee own contribution to the company growth), the observations are 330, and the likelihood ratio chi-square (LR) is 58.45 with $p < .001$. As a result, the model as a whole is statistically significant. In particular, both *age* and *res* are statistically significant (at 5%) with the employee's own contribution to the company growth, *selest*. When *age* and *res* increase by unit one (e.g. 30–40 to the 40–50 age band (*age*), the ordinary employee is promoted to a leader (*res*)), the odds of the high category of *selest* versus low and middle categories of *selest* are 1.49 times and 2.43 times, respectively, given that all other variables in the model are held constant. That is, a unit one increase in the variables *age* and *res* is associated with a 49% increase and a 143% increase respectively in the likelihood of positive attitudes for their own contribution to company growth whereas employees' job experiences, *first*, and the period the employee has worked for the organisation (*reten*) do not have statistical significance for the variable *selest*. Although the relationship between *selest* and *first* are not statistically significant, employees' job experiences (*first*) affect the positive attitudes toward *loyal* and *selest* at 8% and 10% of the significance level.

Table 7.8 Motivation according to the individual characteristics of employees (n=330)

	Prob> X^2 /		<i>age</i>	<i>res</i>	<i>first</i>	<i>reten</i>
	LR X^2 (df)					
H1a (<i>loyal</i>)	0.0001	Coef.	0.6514	0.7020	0.3742	0.0496
	24.51(4)	Odds ratio	1.0673	2.0179	1.4538	1.0508
		p> z	0.7270	0.0010	0.0810	0.6150
		z	0.35	3.23	1.75	0.50
H1b (<i>selest</i>)	0.0000	Coef.	0.4041	0.8894	0.3429	0.1321
	58.45(4)	Odds ratio	1.4980	2.4349	1.4091	1.1413
		p> z	0.0320	0.0000	0.1180	0.1820
		z	2.15	3.98	1.56	1.34

The test results support the sub-hypotheses **H1a** and **H1b**. In particular, sub-hypothesis **H1a** is partly supported by the result of testing for the variable *loyal*. In particular, only the responsibility of the employee is positively associated with the loyalty of the employee to the company. The sub-hypothesis **H1b** is partly supported by the result of testing for the variable *selest*. Both the age band and the responsibility of the employee are positively associated with awareness of the employee's own contribution to the company growth, *selest*. In other words, the responsibility of the employee has a positive effect on motivating employees' perceptions of their important roles and their loyalty whereas the age of the employee is positively associated with employees' perceptions of their critical roles in the company. The result of the hypothetical tests for the two sub-hypotheses confirms that the responsibility of the employee is the most influential factor for formulating the positive employee's motivation.

As referred to in Table 7.3, sub-hypotheses **H2a** to **H2c** are analysed and the results of the testing are shown in Table 7.9. In Table 7.9, all models for the collaboration between members (*collab*), the value-sharing (*shvalue*) and the participation in decision making (*particip*) show a p-value of less than 0.01, and show the LR chi-squared value at 14.67 (*collab*), 29.96 (*shvalue*) and 13.37 (*particip*) for the employees' individual characteristics. That is, all models are statistically significant as a whole.

When the responsibility increases by one unit (e.g. 0 to 1), the odds of a high *collab* versus the low and middle categories of *collab* are 1.68 times greater, given that all the other variables in the model are held constant. That is, the increase of responsibility by one unit (e.g. the ordinary employee becomes a leader) is associated with a 68% increase in the likelihood of positive attitudes for the collaboration between members. The age, job experience, and the period the employee has worked for the organisation of respondents are not statistically significant for the level of collaboration between members. When the responsibility and the job experience increase by one unit, the odds of a high category of *shvalue* versus the low and middle categories of *shvalue* are 2.19 times and 1.72 times greater, respectively, given that all the other variables in the model are held constant. That is, the promotion of an employee and previous job experience are associated with a 119% increase and a 72% increase in the likelihood of positive attitudes for value-sharing between members. When the responsibility and the period

the employee has worked for the company increase by one unit, the odds of a high *particip* versus the low and middle categories of *particip* are 1.68 times and 0.79 times greater, respectively, given that all the other variables in the model are constant. In other words, the promotion of the employee (e.g. if the ordinary employee becomes a leader) and the increase in the period the employee has worked for the organisation (e.g. < 2years to 2~3 years) are associated with a 68% increase and -21% decrease in the likelihood of positive attitudes to participation in decision-making.

Table 7.9 Organisational culture according to the individual characteristics of employees (n=330)

	Prob> X^2 / LR X^2 (df)		<i>age</i>	<i>res</i>	<i>first</i>	<i>reten</i>
H2a (collab)	0.0054	Coef.	0.2092	0.5199	0.1288	0.0122
	14.67(4)	Odds ratio	1.2327	1.6818	1.1375	1.0122
		p> z	0.2920	0.0220	0.5800	0.9080
		z	1.05	2.29	0.55	0.12
H2b (shvalue)	0.0000	Coef.	0.0481	0.7851	0.5448	0.0067
	29.96(4)	Odds ratio	1.0492	2.1927	1.7243	1.0067
		p> z	0.7970	0.0000	0.0130	0.9460
		z	0.26	3.54	2.48	0.07
H2c (particip)	0.0096	Coef.	-0.0283	0.5218	0.1547	-0.2233
	13.37(4)	Odds ratio	0.9720	1.6851	1.1673	0.7998
		p> z	0.8700	0.0100	0.4500	0.0190
		z	-0.16	2.59	0.76	-2.36

From the analysis, sub-hypothesis **H2a collab** is partly supported by the responsibility of employees and sub-hypothesis **H2b shavalue** is partly supported by the responsibility of employees and the previous job experiences of employees. Sub-hypothesis **H2c particip** is partly supported by the responsibility of employees and the period when employees have worked in the company. As a result, the study confirms the responsibility of employees as the most important variable to boost employees' positive attitudes toward a collaborative organisational culture.

As referred to in Table 7.4, hypothesis **H3** is analysed and the test results of owner-managers' functional management versus individual characteristics of the employee are shown in Table 7.10.

Table 7.10 Management style according to individual characteristics of employees (n=330)

	Prob> X^2 / LR X^2 (df)		<i>age</i>	<i>res</i>	<i>first</i>	<i>reten</i>
H3 (funcmng)	0.0331	Coef.	-0.0143	0.5568	0.1760	-0.1131
	10.46(4)	Odds ratio	0.9857	1.7452	1.1924	0.8929
		p> z	0.9370	0.0090	0.4100	0.2470
		z	-0.08	2.62	0.82	-1.16

This variable is referred to as *funcmng* to describe the level of owner-managers' functional management of their employees. The model shows a statistical significance with a chi-squared likelihood ratio of 10.46 at a p-value of 0.033. When the responsibility (*res*) increases by one unit (e.g. 0 to 1), the odds of a high category of *funcmng* versus the low and middle categories of *funcmng* are 1.74 times greater, given that all the other variables in the model are held constant, whereas the age, job experience and the period the employee has worked for the organisation are not significant for the employee's perspectives on owner-managers' functional management styles. That is, an increase in responsibility (e.g. the ordinary employee becomes a leader) is associated with a 74% increase in the likelihood of positive attitudes to the functional management of the owner-manager. As a result, **hypothesis 3** is partly supported by the responsibility of the employee, and, thus, the study confirms that the responsibility of the employee is a critical factor in increasing the positive perspectives of employees on the functional management style of the owner-manager.

7.5.2 Employees' attitudes and their perceptions on the growth of the company

Employees' attitudes to business factors and their organisations are affected by various individual characteristics, as illustrated by the analysed data in this chapter. As mentioned in Chapter 2, Chapter 4 and this chapter, business performance is

significantly associated with employees' attitudes. This survey was also conducted to collect data related to the business performance of the organisation from the employees' perceptions. Two questions examined the perceptions of the employee on the growth of the company: the growth of the company is the responsibility of all members; the individual performance of the employee directly contributes to the growth of the company. As a result, this section validates the relationship between an employee's attitudes and perceptions of the growth of the company.

As referred to in Table 7.5, sub-hypotheses **H4a** and **H4b** are analysed and the test results of both hypotheses are exhibited in Table 7.11. The shaded part in the Table means that the relationships between variables are statistically significant. An ordered logistic regression for the six models was carried out and confirmed the statistical significance of the two sub-hypotheses. Perceptions of the employee towards the growth of the company (*allgrw*, *pergrw*) were tested with motivation (*selest*, *loyal*), collaborative organisational culture (*collab*, *shvalue*, *particip*) and management style (*funcmng*), applying a significance level of 5%.

Table 7.11 Perceptions of the employee on the growth of the company (n=330)

Identification of model		Motivation		Collaborative organisational culture			Management style
Test		<i>selest</i>	<i>loyal</i>	<i>collab</i>	<i>shvalue</i>	<i>particip</i>	<i>funcmng</i>
H4a (<i>allgrw</i>)	Prob>chi2/ LR Chi2	0.0000			0.0000		0.0000
		37.17			37.09		17.53
	Coef.	0.3801	0.4146	0.5931	0.3206	0.0097	0.4071
	Odds ratio	1.4624	1.5138	1.3779	1.8096	1.0098	1.5024
	P> z	0.0010	0.0000	0.0190	0.0000	0.9070	0.0000
	z	3.21	3.97	2.35	3.63	0.12	4.15
H4b (<i>pergrw</i>)	Prob>chi2/ LR Chi2	0.0000			0.0000		0.0000
		87.25			43.75		17.52
	Coef.	1.0388	0.1950	0.7319	0.0478	0.2171	0.4117
	Odds ratio	2.8258	1.2154	2.0790	1.0490	1.2425	1.5094
	P> z	0.0000	0.0690	0.0000	0.7310	0.0130	0.0000
	z	7.63	1.82	4.47	0.34	2.48	4.15

The analysis of the variable *allgrw* versus motivation, the collaborative organisational culture and management style shows it is statistically significant with a p-value of less than 0.05 as a whole in terms of a significance level of 5%. For the sub-hypothesis **H4a** (*allgrw*), the result shows significantly associated relationship with all variables, except for the attitude to participation in decision making. In the model of the motivation, the odds of the high category of *allgrw* versus the low and middle categories of *allgrw* are 1.46 times higher when the *selest* increases by one unit (e.g. 0 to 1), given that the variable *loyal* in the model is held constant. Likewise, the odds of the high category of *allgrw* versus the low and middle categories of *allgrw* are 1.51 times higher when the *loyal* increases by one unit, given that the variable *selest* is held constant. That is, a one-unit increase in the *selest* (e.g. the employee own contribution to the company growth increases from category 1 (strongly disagree) to category 2 (slightly disagree)) is associated with a 51% increase in the likelihood of positive attitudes to the employees' perceptions of the growth of the company (*allgrw*).

In the relationship between *allgrw* and the collaborative organisational culture, *allgrw* has odds of 1.37 times higher than the low and middle categories of *allgrw* when the variable *collab* increases by one unit, and odds of 1.80 times higher than the low categories of *allgrw* when the variable *shvalue* increases by one unit, respectively. In other words, a one-unit increase in positive attitudes to collaboration and value-sharing (e.g. from category 1 (strongly disagree) to category 2 (slightly disagree)) is associated with an increase of 37% and 80% respectively in the likelihood of positive attitudes for the employees' perceptions of all members' responsibilities to achieve the growth of the company. In the case of the model of management style, when the variable *funcmng* increases by one unit, the odds of achieving the high category of *allgrw* versus the low and middle categories of *allgrw* are 1.5 times greater. That is, a unit one increase in positive attitudes for the functional management of the owner-manager (e.g. category 1 (strongly disagree) to category 2 (slightly disagree)) is associated with a 50% increase in the likelihood of positive attitudes to the employees' perceptions that company growth is the responsibility of all members.

In three models looking at the variable *pergrw* of sub-hypothesis **H4b**, the analysis shows it is statistically significant as a whole with a p-value less than 0.05 in terms of the

significance level of 5%. For motivation, the high odds of *pergrw* are 2.82 higher than the odds of the low and middle categories of *pergrw* when the variable *selest* increases by one unit, given that the variable *loyal* is held constant. That is, an increase in the positive attitudes of employees' own contributions to company growth by one unit (e.g. from category 1 (strongly disagree) to category 2 (slightly disagree)) is associated with a 182% increase in the likelihood of employees' perceptions, where company growth is influenced by employees' performances (*pergrw*). In the case of a collaborative organisational culture, the odds of a category of *pergrw* versus the low and middle categories of *pergrw* are 2.07 times greater when the variable *collab* increases by one unit, given that the other variables of the model are held constant. Likewise, the likelihood of a high category of odds for *pergrw* are 1.24 greater higher than the odds of low and middle categories when the variable *particip* increases one unit, given that all the other variables of the model are held constant. In other words, a unit one increase in positive attitudes on collaboration and participation in decision-making (e.g. from category 1 (strongly disagree) to category 2 (slightly disagree)) is associated with increases of 107% and 24% respectively in the likelihood of positive attitudes toward the perceptions of employees' performance (*pergrw*). Regarding the model of the management style of the owner-manager, the high odds of *pergrw* are 1.5 times greater than the low and middle categories of *pergrw* when the variable *funcmng* increases by one unit. That is, an increase in positive attitudes for the functional management style of the owner-manager (e.g. category 1 (strongly disagrees) to category 2 (slightly disagree)) is associated with an increase of 50% in the likelihood of positive attitudes for the perceptions of employees' performance (*pergrw*).

For sub-hypothesis **H4a**, motivation (*loyal*, *selest*), the collaborative organisational culture (*collab*, *shavalue*) and the management style (*funcmng*) are significantly associated with the perception of positive attitudes toward the responsibility and the contribution of employees to the growth of the company (*allgrw*, *pergrw*).

The result of sub-hypothesis **H4b** confirms that employees' perceptions of the growth of the company (*allgrw*, *pergrw*) is positively associated with attitudes towards the motivation (*selest*), the collaborative organisational culture (*collab*, *particip*) and the

management style (*funcmng*). Therefore, the results partly support sub-hypothesis **H4a** and **H4b**.

Although the respondents' perceptions of the growth of the company were affected by the motivation, the collaborative organisational culture and the management style in overall, employees taking a stance of having a positive attitude towards participation in decision-making tended to think positively about the contribution of their individual performance to the company. Conversely, respondents having a perception of the importance of value-sharing tended to show a more positive attitude towards the responsibility of all members to the growth of the company. For both hypotheses, the positive attitudes towards the awareness of employees' contribution (*selest*), the collaboration between members (*collab*) and the functional management style of the owner-manager (*funcmng*) are significantly associated with the perceptions of all members' responsibility to the growth of the company (*allgrw*) and the awareness of the contribution of personal performance to the growth of the company (*pergrw*).

7.5.3 Open-ended question related to hypothesis 4

This survey was carried out via an open-ended question at the end of the survey (Q40). In this exploratory research, the request was: 'Describe your opinion about the relationship between the growth of the company and yourself.' Many owner-managers mentioned in Chapter 5 assumed that their employees were a critical element in the company's operation, as well as in expanding the business. However, employees could have different opinions about their owner-managers, for several reasons. Although these participants' answers do not show the general opinions of employees, their answers show some examples of what they think about their company and the growth of the business. This section illustrates employees' opinions, focusing mainly on the descriptions, which are relatively close to the subject, by categorisation according to the growth of the company and the collaborative organisational culture, with sixteen answers representing twenty-nine respondents' opinions. Each quotation was identified by the code of the online survey.

The growth of the company is significantly associated with my growth

Some employees expressed how the growth of individual performance directly affects the growth of the company because they believe their contribution is a resource for organisational growth.

'I can be a resource for the growth of the company when I continue to study and accumulate my ability.' (L(JI)13)

'The company can grow when all members do their best at their current responsibility and position.' (F(SO)36)

L(JI)13 and **F(SO)36** thought that a bottom-up contribution, based on improving individual performance, was the foundation for the growth of the company. Their opinions also support **hypothesis 4**. **C(WA)13** (see below) believed in top-down management. **C(WA)13** agreed that his contribution was significant for the company's growth. However, he adjusted his contribution by assessing the working orders of the company.

'The more the company is growing, the more managers ordered works to me. I accepted those orders which I think reasonable orders. Otherwise, I worked only small parts which I think acceptable. Nevertheless, I believe that working in doing my best for any work in the company is the best for the company, as well as myself.' (C(WA)13)

Although employees have a variety of attributes, they commonly believe their contribution is a critical resource for the company's growth. **D(KK)2** mentioned the necessity of various experiences and **L(JI)33** highlighted that the growth of the company was possible through the growth of all members. The opinion of **L(JI)33** supports sub-hypothesis **H4a**. That is, the relationship between employees and the growth of the company can be viewed as a necessary linkage.

'Although it is important to concentrate on our main business, both the company and ourselves can grow when we face up to various aspects of the business.' (D(KK)2)

'Both the company and individuals have to grow together.' (L(JI)33)

Some employees do not think that individual growth is related to the growth of the company. They think the company has to grow first: it then has more chance of achieving employees' performance growth. **L(JI)20** said:

'I don't think the growth of the company is inevitably connected with the personal growth of the employee: the growth of the company provides various opportunities for employees to challenge many things.' (L(JI)20)

Employees are managed by owner-managers, and owner-managers tend to provide many chances to employees to improve their performance. In the process of this relationship, employees can have various demands for their owner-managers. **F(SO)37** stated his wishes concerning his owner-manager's role, and **I(SU)31** highlighted the necessity of proper management reflecting employees' abilities. They stressed the importance of management. The opinions of **F(SO)37** and **I(SU)31** support sub-hypothesis **H4b**.

'If the leader positively works as part of a saw-toothed wheel¹⁴ in the organisation, I think the growth of the company can be accelerated.' (F(SO)37)

'It is necessary to organise employees' responsibilities and roles in considering their career path because the vision of the company does not match the personal vision.' (I(SU)31)

Overall, employees had different views depending on their positions and experiences, but they agreed that their individual performance and contributions were crucial for towards achieving company growth. Furthermore, some employees participating in this open-ended question believed in the necessity of their contribution, as well as the

¹⁴ Koreans use this expression to describe equivalent important roles between members in their organisations. The English idiom 'a cog in the wheel' has the same operational meaning. *In English, it is a minor role.* One who holds a minor but necessary post in a large organisation, as in 'Frank knew he was just a cog in the wheel of this giant corporation'.

owner-manager's management aligning with the visions of the company and its members.

Collaborative organisational culture positively affects growth of the company

The more a company grows, the more owner-managers can feel challenged about managing large organisations by themselves. That is why some owner-managers use empowerment as a management policy. Employees also consider empowerment as an effective form of management in a large organisation. **N(GO)1**, **K(TE)20**, and **L(JI)12** agreed on the necessity of empowerment in their organisation, and their opinions support sub-hypothesis **H4b**.

'It is necessary to encourage employees' empowerment.' (N(GO)1)

'I positively agree with the growth of the company through empowerment and responsibility.' (K(TE)20)

'It is necessary to organise and authorise individuals in line with employees' performances and potentiality.' (L(JI)12)

The relationship between members and empowerment in the company is related to the organisational culture and climate. When a company has a collaborative culture, employees can actively exchange their opinions. Exchanging various opinions in the company stimulates the fostering of a collaborative organisational culture, and, thus, the business performance improves. In line with this, **J(IO)6** and **P(EM)4** mentioned the importance of sharing information and communication. Furthermore, the perceptions of **J(IO)6** and **P(EM)4** support sub-hypothesis **H4a**.

'I want to find a way of sharing personal ability freely.' (J(IO)6)

'The growth of the company is determined by the activation of marketing and excellent products, but harmonious communication between the company and employees is required prior to the growth of the company.' (P(EM)4)

All of the opinions mentioned above focus on the impact of the respondents' contribution to the growth of their companies. In the survey, many employees

suggested that responsibility for growth was the responsibility of all members, rather than merely the owner-manager. Indeed, **M(RI)19** has a similar opinion that supports sub-hypothesis **H4a**:

'Making opportunities for the growth of the firm is the responsibility of the owner-manager and making progress with the opportunities is the responsibility of all members.' (M(RI)19)

Therefore, owner-managers consider job retention and other ways to improve employees' performances. SME owner-managers feel, however, that it is difficult to retain skilful people. In this section, **A(KC)10** and **B(LS)8** illustrate the reasons for decreasing their commitment and involvement in the company.

'I think I am working for the growth of the company, but I feel the reward is insufficient and, thus, my willingness to work hard decreases.' (A(KC)10)

'I wish my company would not lose skilled people because of poor management.' (B(LS)8)

Employees shed light on the importance of communication between members, and a harmonious organisational culture. They think that organisational culture can create a collaborative climate in the company and that this creates growth in that company. Although there was a comment regarding insufficient rewards, participants weighed in on the collaborative organisational culture and proper management.

To sum up, the opinions of sixteen employees are described and, in the survey, they delivered their opinions about the contributions they considered effective for the growth of the company. Some employees' opinions are similar to the survey results, while other opinions contrast with the mainstream survey results. However, employees' contributions and performances are consistently considered to be essential.

7.6 Conclusion

The survey questionnaires investigated various employees' opinions of the factors relevant to motivation, organisational culture and the management style of owner-

managers as they influence the growth of the company. The demographic personality of respondents was used as independent variables to confirm how an employee's personality affects the various attitudes towards the various business components. After analysing this relationship, both variables of *allgrw* (the growth of the company by all members) and *pergrw* (contribution of personal performance to the growth of the company) were used as other dependent variables to examine the impact of the employees' attitudes towards company growth. All models in this survey – but not all variables – are statistically significant. In the analysis, employees' responsibilities represent the most significant pointer for determining their attitudes to the factors influencing the growth of the company.

In other words, hypotheses **H1** to **H3** are partly supported by some variables tested in each sub-hypothesis. With respect to hypothesis **H1**, sub-hypothesis **H1a** is partly supported as having a significant association between *loyalty* (loyalty to the organisation) and *res* (responsibility of employees) and **H1b** is also partly supported as a significant association between *selest* (the employee's own contribution to the company growth) and the variables of *age* (age band of the employee) and *res*. In the case of hypothesis **H2**, sub-hypothesis **H2a** is partly supported as a significant association between *collab* (collaboration between members) and *res*. **H2b** is partly supported as a significant association between *shavlue* (value-sharing between members) and both variables *res* and *first* (whether or not the current job was their first). **H2c** is also partly supported as a significant association between *particip* (participation in decision making) and variables *res* and *reten* (the period the employee has worked for the organisation). Hypothesis **H3** is partly supported as a significant relationship between *funcmng* (functional management of the owner-manager) and the variable *res*.

Sub-hypotheses **H4a** and **H4b** tested hypothesis **H4**. Some variables partly supported both sub-hypotheses: sub-hypothesis **H4a** is supported by motivation (*selest*, *loyal*), the collaborative organisational culture (*collab*, *shvalue*), and the management style of the owner-manager (*funcmng*); sub-hypothesis **H4b** is supported by motivation (*selest*), the collaborative organisational culture (*collab*, *particip*), and the management style of the owner-manager (*funcmng*).

Finally, the description of text-based opinions regarding the open-ended questionnaire provides evidence that employees believe in the significance of their performance and contribution to the growth of the company, even though they have various perceptions of the relationships between the company and its staff.

Employees can have different perspectives according their characteristics, but they also can have many similarities where they share many information and business purposes in the same organisation. This survey results showed employees' attitudes to various factors related to the business and their company. The current study examined other stakeholders such as owner-managers and policymakers, and their perspectives need to be discussed with another key stakeholder, the employees. Therefore, the next chapter discusses three findings (Chapters 5, 6, and 7) in the context of the previous studies discussed in Chapters 2 and 3.

CHAPTER 8 DISCUSSION

8.1 Introduction

This chapter integrates and discusses the findings from the data analysis of the interviews with the owner-managers and policymakers and the online survey of the employees in chapters 5, 6, and 7. The various perspectives of these three business stakeholders on the factors influencing the sustained growth of high-tech SMEs were identified in Chapter 2 as internal factors, external factors, policy impacts and governance structure.

This chapter discusses the various perspectives of the stakeholders, underpinning the comparison with the literature to elicit the critical influential factors enabling the sustained growth of high-tech SMEs. To get an answer to the main research question, ***What factors underpin the sustained growth of high-tech SMEs?*** this chapter focuses on the four research sub-questions stated in section 4.1. The research sub-questions 1 and 2 are answered and discussed by a comparison of the three findings (Chapters 5, 6, and 7) for the internal factors and external factors in sections 8.2 and 8.3, respectively. The research sub-question 3 relates to the impact of the public policies discussed within the perspectives of the owner-managers and policymakers in section 8.4. Regarding the impacts of public policy on SME-sustained growth, as discussed in section 8.4, the employee findings were excluded as the employees generally lacked awareness of public policy issues compared to policymaker issues.

All stakeholders in this study belonged to different organisations with varying characteristics. Given the various contexts and structures of each organisation, the corporate governance structure appears to be associated with the performance of the organisation. Therefore, in a theoretical test, this study examined and discussed corporate governance structures in research sub-question 4 to find their impacts on business performance in section 8.5.

8.2 Perceived internal factors in achieving sustained growth of high-tech SMEs

The internal factors influencing the sustained growth of high-tech SMEs can be recognised in the various standpoints of the business stakeholders. Therefore, this study interviewed the owner-managers and the policymakers, and surveyed employees' perceptions to find the answer to the research sub-question: ***What do owner-managers, policymakers and employees consider to be the major internal factors influencing the sustained growth of high-tech SMEs?*** Based on the findings, this section discusses the owner-managers' competences, employees' contributions and a collaborative organisational culture.

8.2.1 Owner-managers' competences enabling the growth of the company

The owner-manager of a company makes strategic decisions to develop their business, as well as managing employees. Hence, the owner-manager's competence can be perceived as a critical element to achieving the growth of the company. This owner-manager's competence can be changed by their knowledge, experiences, intention to grow and the ownership structure of the company. The current study found that owner-managers' strategic decisions, such as timing for an IPO (initial public offering), restructuring the organisation and the volume of investment were significantly associated with their competence. This finding significantly supports the study by Baum et al. (2011)

In other words, many participants thought that the owner-manager's various experiences and expertise acted as a driver to create business opportunities and this accords with prior studies (Kor 2003; Baum et al. 2011; Burns 2016). In particular, all participants in this study agreed that owner-managers' experiences were the foundation of their competence, as well as the decisive characteristics deciding their business direction. Many interviewed owner-managers had experiences in engineering, and thus they tended to show engineering-biased investment. Conversely, they experienced a lack of knowledge of marketing and faced difficulties at the beginning of their business. This characteristic shows the importance of a balanced knowledge of marketing and engineering, as Simon (1996) asserted. Policymakers also recognised the

lack of experience of owner-managers with sales and marketing, except for R&D actions in high-tech SMEs. These side effects of biased experiences have been confirmed in prior studies regarding the delayed introduction of new technology (Sam et al. 2012) and relatively biased R&D investment (Barker and Mueller 2002).

Despite the issue of owner-managers' biased expertise, many participants thought that owner-managers' competence formed the core of significant decision-making. Policymakers asserted that owner-managers needed to respond to government policies related to human resource management to improve employees' performance. Although a few owner-managers decided critical business decisions by themselves without any external help, many owner-managers attempted to improve their employees' performance through training programmes and external help, and, thus, the conflicts between members could be reduced. Also, policymakers thought owner-managers' functional management of employees could improve business performance. That is, this finding reflected studies regarding the disadvantages of autocratic leadership (De Cremer 2006; Lobonțiu and Lobonțiu 2014) and provides evidence which is in line with the study by Edmondson and Smith (2006).

In the employees' survey, their attitudes toward the functional management of their owner-manager were changed by their various characteristics, such as age, job experiences and their level of responsibilities. In particular, employees' responsibilities were the most significant factor enabling a positive attitude towards owner-managers' functional management. Also, employees with higher responsibilities believed they made a greater contribution to the growth of the company than others with lower responsibilities. That is, the survey illustrated the relationship between employees' responsibilities and the growth of the company. Given that employees' responsibilities are decided by owner-managers' management, owner-managers' functional management of employees can be described as one of the key elements for the growth of the company. The study by Breugst et al. (2015) supports this result. In the open-ended questions to employees, some employees also pointed to the importance of the owner-managers' roles for improving employees' performance in terms of company growth.

Hence, given these findings and prior studies, the owner-managers' competences across the various decision-making processes can be perceived as one of the decisive factors for achieving the sustained growth of high-tech SMEs. As the actors operating in the company, the employees are discussed in the next section.

8.2.2 Employees' contributions influencing the sustained growth of high-tech SMEs

The findings of the interview with owner-managers showed that employees' commitments are a critical factor for achieving the sustained growth of high-tech SMEs. Thus, owner-managers pointed to the importance of communication and training programmes to improve employees' performances through enhancing employees' knowledge, as discussed in the study by Daghfous (2004). Likewise, policymakers believed that various training and management skills caused an improvement in the performance of employees. Also, owner-managers attempted to understand employees' demands through communication to retain skilled people. Owner-managers perceived the crucial relationship between employees' performance and the growth of the company, in line with studies done in this area (Cooney 2005; Littunen and Virtanen 2006; Hambrick 2007; Carmeli et al. 2011b; Knockaert et al. 2011). Similarly, the policymakers interviewed thought that the commitment of employees made it possible for businesses to expand, as well as facilitating the decision-making of the owner-manager.

Furthermore, both the owner-managers and the policymakers emphasised that the contribution of skilled people is a decisive factor for influencing R&D actions. They considered the critical roles of senior members in developing new products, and these results seem to be consistent with other research which underlines the importance of senior members, such as members of the top management team and the entrepreneurial team for improving business performance (Cooney 2005; Beckman and Burton 2008; Knockaert et al. 2011). Therefore, both groups stressed the introduction of various management policies to improve employees' job satisfaction, which enables job retention and achieves sustainable internal human power. This finding confirmed the importance of job satisfaction for retaining people (Hausknecht et al. 2008; Schjoedt

et al. 2013). Consequently, there was a consensus among the interviewee groups that key members need to be retained to maintain a competitive advantage. In other words, SME entrepreneurs who wanted to achieve sustained growth have to consider various ways to retain high-skilled employees, as well as to improve job satisfaction. In the survey of the employees, the result showed that employees tend to have a positive attitude toward their contribution to the growth of the company, correlating with their position in the organisation. That is, employees' attitudes regarding their significance in their company varied according their positions but they also agreed with the importance of employees' contributions to organisational performance.

On the other hand, there was a difference between the owner-managers' perspectives on the members and employees' perspectives on themselves in the companies, as per the study by Moy and Lee (2002). Owner-managers tended to trust employees who had been working for a long time compared to other members, regardless of their present level of responsibility. In contrast, employees had a positive attitude towards the growth of their company according to their current level of responsibility. In a comparison of perspectives between the owner-managers and the employees, asymmetric views were given on the contribution of employees related to their responsibility and the length of time in their particular company. This relationship is described in Figure 8.1.

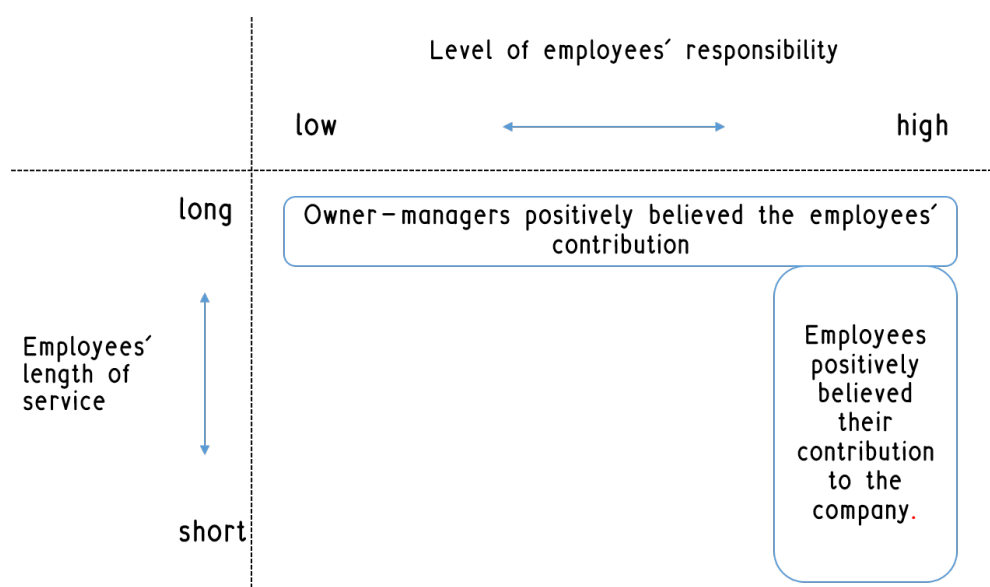


Figure 8.1 The relationship between owner-managers and employees regarding employees' contributions to the company
(Source: Author)

Despite some of the different views discussed, the perspectives of all three stakeholders in this study were in agreement on the significant role of employees' contributions to achieving the sustained growth of high-tech SMEs. Employees had a role as members and their behaviours could be affected by the organisational culture. Therefore, the next section discusses the organisational culture.

8.2.3 Collaborative organisational culture enhancing the performance of owner-managers and employees

Owner-managers and policymakers in this study thought that collaboration and communication acted as a driver for improving business performance, as well as enhancing internal competitive advantages. These efforts are perceived as a way to foster a collaborative organisational culture, enhancing internal human power. Therefore, a collaborative organisational culture is significantly associated with business performance and this finding shows the similarity with the results of many prior studies (Choe 1993; Deshpandé and Farley 1999; Roodt et al. 2002; Rashid et al. 2003; Sokro 2012; Wallace and Mello 2015; Ahmed et al. 2016). In particular, owner-managers believed in the importance of sharing their business vision with employees through communication to achieve the growth of the company, and this finding supports the study by Hemmert (2008). That is, this result explains the communication and collaboration may work as strong internal factors enabling the sustained growth of high-tech Korean SMEs. From the findings, we can see Korean companies are hierarchically structured (Chen 2004) and they also have a strong internal coherence influencing the communication and collaboration. Although cultural factors differ by the country (e.g. Walsh and Winsor 2018; Gaganis et al. 2019), this result could suggest some critical element boosting trust and collaboration between members. In consequence, entrepreneurs having an intention to achieve the sustainable growth need to consider the positive impact of collaborative organisational culture on the growth of the company.

In the survey of the employees, some of them thought that empowerment caused employees' performance and commitment to improve. Employees displayed positive behaviours through their empowerment and their attitudes proved the findings of

Carmeli et al. (2011b). Employees also showed that their positive attitudes towards collaboration and value-sharing between members were significantly associated with the perception that company growth was the responsibility of all members. In particular, employees with a high level of responsibility displayed relatively positive perspectives on the role of all members to the growth of the company. Employees' perspectives changed by their responsibility, and we can consider this as the impact of organisational culture, which demands more duties by the level of responsibility.

In other words, participants commonly recognised the importance of collaboration to achieve the growth of the company, as a result, sample companies in this study achieved the sustained growth. From this finding, the collaborative organisational culture could be perceived as one of the critical factors influencing the sustained growth of high-tech SMEs in South Korea.

8.2.4 Summary of internal factors

This study confirms that internal factors are significantly associated with the growth of the company. Each factor is also related to the other, and the contribution of all members influenced the sustained growth of high-tech SMEs. Therefore, for the research sub-question of internal factors, the study notes that that common denominators of internal factors, as exemplified by participants, can be identified according to three main components: the owner-manager's competence, the employees' contributions and a collaborative organisational culture. In particular, participants highlighted the role of collaboration enhancing overall organisational performance to achieve the growth of the company and the growth record of sample companies proved the positive impact of collaboration between members. These findings are also similar to many previous studies. In many cases, entrepreneurs enhanced their internal resources so that they then could respond to external business environments. These external factors will be discussed in the next section.

8.3 Perceived external factors in achieving sustained growth of high-tech SMEs

Participants pointed out the importance of technology and appropriate responses to external business environments. They also thought that technology could be developed with consideration of business environments. Technology and business environments are identified as external factors (Chapter 2). This section stated the research sub-question of examining various perspectives on external factors as: ***What do owner-managers, policymakers and employees consider to be the major external factors influencing the sustained growth of high-tech SMEs?*** This section comprises two parts – on technology and on business environments.

8.3.1 Technology acquisition and financing capability to achieve growth

Studies on the relationship between technology and the growth of the company have been discussed by many commentators (e.g. Hölzl 2009; Rhee et al. 2010; Ismail et al. 2011; Love and Roper 2015). Owner-managers and policymakers who participated in this study agreed about the important role of technology for achieving sustained growth, similarly to these previous studies. However, they have slightly different views of the financing linked to R&D actions.

Owner-managers attempted to get external funding through various networks and R&D subsidy schemes, enabling them to enhance their technological abilities, as the study by Lee et al. (2010) shows. Owner-managers perceived external funding to be one of the alternatives to covering a company's lack of financing capability and, thus, they achieved growth in their company. Owner-managers' perspectives backed up the results of some previous studies (Beck and Demirgüç-Kunt 2006; Moreira 2016). All owner-managers in this study applied and used the government's R&D subsidy schemes as well as financing from external sources to develop their products. Their actions in getting external funding also can be interpreted in line with previous studies about the negative effects of the difficulties of access to finance for the growth of the company (Beck and Demirgüç-Kunt 2006; Ayyagari et al. 2008; Klonowski 2012; Banerjee 2014).

Policymakers have both positive and negative views on the impact of external financing on improving business performance and growth because of the possibility of losing future business opportunities due to debt. Some policymakers discussed the importance of external financing for reducing business risks and this perspective is in line with previous studies (Beck and Demirgüç-Kunt 2006; Kersten et al. 2017). In contrast, they also noticed the possibility of an adverse effect from external loans because of limited funding periods. This view is similar to one owner-manager's view. Some policymakers in this study stressed the importance of having one's own capital to reduce their financial burden and believed that balanced financing was important for achieving sustained growth. This finding confirms the critical role of own capital, as previous studies have discussed (Petersen and Rajan 1997; García-Teruel and Martínez-Solano 2007).

In the survey of the employees, the results of the survey on employees' attitudes did not show the perspectives on the importance of R&D and financing for the growth of the company. However, in the individual narrative opinions on the growth of the company, some employees mentioned that retaining key R&D members was a significant factor for achieving the growth of the company.

In the end, all participant groups perceived the critical role of technology for the growth of the company even though they had various views on how to proceed to achieve technological competitiveness. In other words, the owner-managers and the policymakers in this study were focused on considering the acquisition of technology with a balanced financing capability, which is different from some previous studies, where financing and technology are treated separately (e.g. Beck et al. 2005; Bhamra and Dani 2011; Mateev and Anastasov 2011; Ipinnaie et al. 2017).

Given the contributions of technology and financing as a response to the external environment, it is necessary to consider how to meet the challenge of external business environments. Therefore, in the next section, how participants think about the external business changes is discussed.

8.3.2 Active response to the external business environmental changes

Previous studies have argued the positives and the negatives of various external economic conditions, such as inflation, legislation, technology changes and the national financial system (e.g. Beck et al. 2005; Bhamra and Dani 2011; Mateev and Anastasov 2011; Ipinnaiye et al. 2017). Similarly, owner-managers in this study perceived the external economic environmental changes as the issue which they have to overcome to achieve the growth of the company. Owner-managers used various alternatives, such as new market entry, technology innovation and restructuring the organisation to respond to the business crises created by external environments. Prior studies also suggest the necessity of preparation and responses to external economic changes (Marinova and Phillimore 2003; Bourletidis and Triantafyllopoulos 2014). Policymakers also emphasised an understanding of external business environments to respond to business crises and to expand their market share.

To expand market share, some owner-managers and policymakers asserted the importance of a business network to get various market information. They believed an exact analysis of the market can be conducted based on a plethora of market information. Prior studies on various actions with business networks, external knowledge sources and new technology information have been discussed as examples of responses to external market changes (e.g. Van de Vrande et al. 2009; Ganotakis 2012; Kang et al. 2013; Belderbos et al. 2015). Owner-managers in this study also used various ways to increase understanding of the market, as well as to meet customers. In particular, some owner-managers used their individual networks and senior members' performance to expand their market information. Some owner-managers encouraged members to meet customers face to face in order to gain practical opinions on their products and services. A wide range of business networks gave the opportunity to gauge what various customers' demands for the products were. This result shows the relevance of previous studies by Marinova and Phillimore (2003) and Radicic and Pugh (2017). In other words, the perspectives of owner-managers and policymakers showed the importance of business networks for accessing customers as knowledge sources of a business, as shown in the study by Radicic and Pugh (2017).

Based on a market analysis with plenty of information, owner-managers who participated in this study recognised market entry barriers and decided the appropriate time to enter the market in a competitive way, nationally and internationally. Therefore, owner-managers stressed correct market analysis based on plenty of market information to prepare for their next business venture. Most of all, they thought that all business processes and responses to external changes could be improved upon by considering customer base expansion. Also, policymakers stressed the importance of the customer base for achieving the sustained growth of high-tech SMEs. That is, both groups asserted the importance of the customer base through understanding customers' needs. Their opinions support the study by Boer et al. (2005).

In the survey, the analysis of employees' attitudes did not show the relevant perspectives on the market and customers. However, some employees, in narrative answers to the open-ended questions, mentioned the importance of marketing and excellent products for the growth of the company. Although there were relatively few mentions, their comments describe perspectives on the importance of the external business actions carried out by employees.

Ultimately, owner-managers and policymakers believed an understanding of external business environments was the beginning of customer base expansion, and all three business stakeholders recognised the importance of market analysis for the growth of the company. Owner-managers who want to achieve sustained growth might have to consider various strategies through business environment analysis, networking and new market entry.

8.3.3 Summary of external factors

The external factors were identified by technology, financing and business environment changes. Based on the responses to these factors, high-tech SMEs in this study achieved sustained growth through their customer base expansion. In answering the research sub-question on the external factors, this study finds that all participants mentioned technology acquisition with balanced financing capability and customer base expansion with precise market analysis through various routes (e.g. owner-managers' networks, members' networks and efforts, and customer feedbacks). This answer is relatively

similar to the results of previous studies but participants highlighted the financial capability of being able to manage the financial burden of external R&D finance, such as bank loans and venture capital. Given the impact of policy support for business, the next section discusses policy influence on the sustained growth of high-tech SMEs.

8.4 Strategic application of policy support and the improvement of policy efficacy

Government policymakers have designed various policy schemes to support pre-entrepreneurs and SMEs. Owner-managers in this study had experiences adopting government policy schemes to develop their own products. Policymakers are positioned to develop and implement government policies for SMEs. Given these different positions of the owner-manager and the policymaker, this section discusses the extent to which the perspectives of owner-managers and policymakers for the policy support are similar to find the answers to the research question stated: ***What do owner-managers and policymakers consider the impact of policy implementation and intervention to be on the sustained growth of high-tech SMEs?*** This section comprises two parts – looking at the application of policy support and the policy actions to improve the efficacy of policy support.

8.4.1 Application of policy support to improving business performance

The growth of SMEs is perceived as a driver for job creation, innovation and national economic growth by the public sector (Michael and Pearce 2009), and the contribution of the policy was linked with company growth and survival (Hansen et al. 2009). The government cannot support one policy to fit all consumers' demands and, therefore, there are various schemes to cover the needs of entrepreneurs. Policymakers in this study worked in central government to support SMEs with various policy schemes and also introduced various policies such as those mentioned in the study by Warwick (2013).

Owner-managers in this study used government R&D subsidy schemes to develop products and they perceived the R&D subsidy as a significant driver for encouraging R&D actions. The findings in this study mirror those of previous studies, where R&D subsidies

worked as a critical policy for technology-based firms to create new products and new markets (Kang and Park 2012; Bogliacino et al. 2014; Liu and Rammer 2016).

However, one owner-manager thought that it was difficult to commercialise established products with R&D subsidies due to the limitation of the supports. This finding is in agreement with findings of previous studies in which subsidised innovation outcomes were criticised for a lack of commercialisation (Moretti and Wilson 2014; Bronzini and Piselli 2016) whereas, some policymakers were concerned at the dependent attitudes of some entrepreneurs who rely on the government R&D subsidy only rather than their internal resources. This rather contradictory result may be due to the different positions of each group as suppliers and consumers of the policy.

Furthermore, policymakers thought job creation was the main purpose of policy support for SMEs and job creation can be linked to the improvement of business performance. For that reason, there was indirect policy support, such as taxation and labour subsidies, depending on the proportion of R&D investment made by the SME. Policymakers said that taxation was effective for increasing and maintaining R&D engineers in SMEs. This perspective has a similarity with the finding of the previous study (Guceri 2018).

Government support tends to be focused on job creation but some owner-managers who participated in this study had difficulties establishing their infrastructures (e.g. factory and office space), technology acquisition at the prototype stage, and compliance with the regulatory regime. As a result, the South Korean government has encouraged collaboration with universities and incumbent industrial sectors. The policy implementation of this collaboration is in line with the research by Dada and Fogg (2016). Policymakers interviewed in this thesis thought that high-tech SMEs could save operating costs by using government supports such as the government-funded incubators in the universities, government-private funded spaces for entrepreneurs, and industrial cluster areas. The impact of this policy support for entrepreneurs is verified by previous studies (Ketels 2003; Carayannis and von Zedtwits 2005; Chatterji et al. 2014). In prior studies, although procurement policy are discussed as a way of supporting the entry of new firms into the market (Kidalov and Snider 2011; Pickernell et al. 2013; Flynn and Davis 2016; Orser et al. 2019), participants in this study did not mention this policy. This result can be extrapolated from the fact that participants

discussed the growth stage of the company rather than the new entry of emergent firms. In the survey, employees did not mention policy impacts on their contribution because they faced indirect policy support from the owner-manager or the company management.

Consequently, both the owner-managers and policymakers agreed with the value of the R&D subsidy schemes to make extra opportunities to develop their products for future business. Also, they perceived various government policy schemes as enabling job creation, reducing tax and supporting infrastructure related to the improvement of business performance.

In other words, owner-managers used R&D subsidy schemes, public financing, and other indirect policy supports for the growth of the company. Policymakers have a clear policy purpose fostering SMEs as the main policy of the country. Although both group placed in different positions, they commonly have a positive perspective for the role of policy support in achieving the continuous growth of high-tech SMEs.

Furthermore, both groups perceived the characteristic of strict policy implementation and the necessity of flexible policy support, and they considered the improvement of policy effectiveness for the growth of high-tech SMEs as discussed in the next section.

8.4.2 Improving policy effectiveness

As mentioned in previous studies, various government policy schemes are implemented for SMEs. The responsibility for policy development, delivery and implementation lies with by policymakers and policy practitioners. Therefore, enterprise policy exists at a macro-level and is implemented in a top-down approach by the policymakers. The delivery of the policy is represented at the micro-level in a bottom-up approach by the practitioners (Arshed et al. 2016). This structure was found to be the same for the South Korean government. Prior studies have discussed these front-line workers as ‘street-level bureaucrats’ (Lipsky 1971). Meanwhile, Meyer and Vorsanger (2003) have discussed their roles for improving policy implementation. Owner-managers and policymakers in this study had similar perspectives on the role policy-practitioners in the regional offices.

In the policy process, owner-managers who participated in this study perceived policy implementation to be an incoherent and stringent process due to regime change and the limited duties of policymakers. In particular, owner-managers complained about increasing the operating costs due to the stringent policy implementation of government schemes such as the R&D subsidy and public guaranteed loans. The attributes of policy implementation may result in the inefficiency of policy support for SMEs. Grilli and Murtinu (2014) provide an example of inefficient policy implementation. Although the reasons for policy inefficiency may differ, previous studies and the current study show a lack of policy efficacy.

Policymakers attempted to improve policy efficacy by reflecting various opinions, such as those of politicians and entrepreneurs. Some policymakers in this study stressed the importance of policy delivery to SMEs because effective policy delivery causes policy efficacy to improve. They stressed the importance of feedback on and validation of the policy implementation. These results are in line with the findings of other studies. Arshed et al. (2016) discussed the negative factors of policy efficacy, such as a lack of guidance from policymakers and them having limited duties. Policymakers pointed to the importance of the evaluation process after implementing the policy to improve the impact of the policy support, similarly to the study by Arshed et al. (2016).

Furthermore, policy intervention can create a new market, as well as shrink an established market. In particular, government regulation impedes new entry in specific regulated industries, such as health and medicine (Kitching et al. 2015). In a similar way, some owner-managers in this study used policy intervention to enter a new security market. However, some owner-managers felt the economic burden of retaining employees due to a rapidly increasing minimum wage and stringent labour regulations. This rapidly changing labour policy operated as an inhibitor to growth in the employment rate, and this finding shows the negative effect of business-unfriendly regulations.

Thus, it would be valuable to consider the various perspectives of owner-managers and policymakers on the desired aspects of policy implementation. In the current study, owner-managers wished that government schemes would allow SMEs to flexibly avail of them. They thought that they would have to spend extra to abide by the regulation

and government support schemes due to fixed and stringent policy implementation. The issue of policy efficacy can be influenced by the different viewpoints of policy stakeholders. Owner-managers and policy implementers often have opposite perspectives, as the study of Niska and Vesala (2013) discussed. Some policymakers who participated in this study mentioned the necessity of strict regulations for supporting SMEs to treat all entrepreneurs fairly. These policymakers emphasised fair delivery and policy implementation rather than efficient implementation. However, some policymakers experienced better outcomes of policy implementation with empowerment and flexibility than stringent policy implementation even though they also had a passive attitude to the flexibility of policy implementation. Similarly, previous studies have discussed the impact of a bottom-up approach in policy implementation by practitioners through being empowered to improve policy efficacy (e.g. Deleon and Deleon 2002; Hill and Hupe 2009; Tummers and Bekkers 2014).

Furthermore, owner-managers of high-tech SMEs wished continuous government support for established firms beyond the start-up stage because they felt the government focused too much on start-ups and firm creation. They were also concerned about the discontinuity of policy support because government change ended some established R&D schemes. As the study of Thompson et al. (2012) shows, policy support demonstrates different patterns according to government change and, thus, policy users can be disappointed by policy programmes.

In the end, owner-managers and policymakers not only identified the necessity for policy support to enhance business performance but also confirmed the inefficiency of policy implementation. Both groups have perspectives of positive roles of policy support for the continuous growth of high-tech SMEs. Owner-managers and policymakers viewed the policy support in a position of relevant stakeholders in their interests. Although both groups interviewed were in different positions, they believed that the flexibility in the policy implementation process (e.g. flexible application of rules and empowering policymakers) is required to improve policy efficacy.

8.4.3 Summary of policy impact

Owner-managers and policymakers commonly highlighted the importance of government R&D schemes to improve the competitive advantages of high-tech SMEs. Also, participants were not only concerned about inefficient policy implementation but also believed that efficient policy implementation was required for the growth of SMEs. Therefore, to the research sub-question of policy support, this study's response is that the R&D subsidy, flexible policy implementation and policy continuity are the required factors for achieving the sustained growth of high-tech SMEs. Previous studies, meanwhile, have discussed the empowerment of implementers, but there are relatively few studies on the issue relevant to the flexibility and continuity of policy.

This study has discussed the various opinions of stakeholders related to the growth of the company. Their perspectives can be affected by corporate governance and hence, organisational performance can be changed. Therefore, in the next section, this study discusses the impact of corporate governance on the business stakeholders' behaviours and business performance.

8.5 Corporate governance influencing on the business productivity of the organisation

The organisational foundation and members' relationships can be formed by the corporate governance and many owner-managers who participated in this research considered adopting an appropriate management skills to fit with interests of internal and external stakeholders. In this point of view, this study examined stakeholders' perspectives on organisational governance, with the research question asking, ***How do perceptions of the influence of corporate governance and culture on organisational performance vary between owner-managers, policymakers and employees?*** This section comprises two categories in a discussion on the impact of two corporate governance, which are relevant to principal-agency theory and stewardship theory, on organisational performance. Also, the discussion discusses the perspectives of owner-managers and employees.

8.5.1 Principal-agent relationship impeding organisational performance

Previous studies on corporate governance discuss it in terms of various theories on the organisation. The relationship between members in the same organisation can be made according to organisational purposes and the intention of management. In agency theory, the owner is the principal and the agents are the members with the contract in the organisation (Jensen and Meckling 1976). Business owners want to increase their profits, and, therefore, principals tend to focus on saving on agency costs to increase profits (Eisenhardt 1989). With the same perspectives as these studies, owner-managers thought their responsibility was to achieve the growth of the company, and their employees played an important role in growing the company. That is, they had a perspective on the principal-agency governance relationship. Some owner-managers interviewed in this thesis gave decision-making powers to senior members to increase business performance, but many employees with few responsibilities thought their duties were limited to these responsibilities. These attitudes are in line with the study by Gomez-Mejia et al. (2005) in which they describe agents doing their contracted jobs by just focusing on their individual interests. In particular, many employees thought their current work was not related to the decision-making process whereas senior members have a relatively big responsibility, and, thus, they make an emotional contribution to the company.

In this study, owner-managers were the actors monitoring and managing employees, and employees were the actors following owner-managers' orders and doing their contracted jobs in the company. Their behaviour is close to principal-agency behaviour but the owner-managers recognised the inefficiency of these behaviours for the performance of their companies. Thus, owner-managers wanted to see employees' active commitment and participation to improve business performance. Consequently, some owner-managers reorganised their companies to manage and control them efficiently. Previous studies have commented on the inefficiency of monitoring and controlling agents (Arthurs and Busenitz 2003; Bonazzi and Islam 2007). Similarly, some owner-managers understood the inefficiency of monitoring and controlling people, and, thus, they were willing to create an organisational climate that enhanced trust between members. Policymakers also thought a typical organisation with a conventional

structure impedes communication between members, and identified the necessity of fostering an organisational culture capable of communicating with owner-managers.

To sum up, owner-managers and policymakers considered the relationship between the owner-manager and employees as the factor influencing the sustained growth, and this relationship could be related to the members' attitudes affected by the corporate governance. Owner-managers managed the organisation based on the principal-agent relationship, but also they attempted to lead employees' emotional commitment. As a result, given the perspectives of employees and policymakers regarding to the corporate governance, the principal-agent relationship would be considered as the impeding factor for the sustained growth of high-tech SMEs. Thus, the next section discusses the impact of stewardship behaviours on organisational performance as an opposite view to principal-agency behaviours.

8.5.2 Stewardship behaviours enhancing the organisation's operational effectiveness and performance

Owner-managers wanted to motivate their employees' commitment and their efforts are close to actions fostering the stewardship behaviour of employees. They attempted to form a good relationship with employees, and their leadership showed the importance of fostering the stewardship behaviours of members, as per findings of Hernandez (2008). Owner-managers in this study believed that various efforts to contact employees contributed to motivating employees' commitment to company growth. Some owner-managers divided their company into more than two companies when they thought their companies would become a big company that was too difficult to control. Owner-managers wanted to create an organisational culture that facilitated communication between members. Owner-managers believed that employees could be motivated based on developing an understanding of each other. Wasserman (2006) discussed how executives with psychological ownership are more likely to behave in ways related to stewardship behaviour. That is, owner-managers attempted to give their employees' psychological ownership so that they would form stewardship behaviour. Likewise, Hernandez (2008) suggested that social exchanges between a leader and followers improved stewardship behaviour, and this can be carried out by

efforts at understanding each other through the communication. In the same way as previous studies, owner-managers in this study attempted to create social exchanges to understand each other through communication.

Furthermore, some owner-managers empowered some employees who had a responsibility to manage small groups in their companies. Therefore, their responsibility and sense of psychological ownership increased, and owner-managers expected to improve business performance. This result confirms that stewardship behaviours that are empowered result in more significant responsibilities being taken on compared to principal-agency behaviours in which the owners retain control (Donaldson and Davis 1991). Also, employees with responsibilities represented stewardship behaviours associated with positive attitudes to factors such as collaboration between members, value-sharing and participation in decision making. These employees had more positive perceptions of the growth of the company by all members in proportion to their level of responsibility in the company. Employees' positive attitudes toward various business factors showed the relevance of formulating a collaborative organisational culture, which the owner-managers wanted to create in their companies to improve business performance. Policymakers also discussed that owner-managers need to make an effort to understand employees, as well as to treat them as colleagues. Policymakers believed these efforts improved organisational performance and elicit employees' commitment.

In other words, all participant groups discussed the positive impact of stewardship behaviours on the organisational performance. Most of all, communication between members is perceived as the key point to motivate members' emotional commitment to the growth of the company. These efforts formulated the collaborative organisational culture. In consequence, we can conclude that stewardship behaviours affected by the collaborative organisational culture contributed for the possibility of achieving the sustained growth of sample companies.

8.5.3 Summary of influence of corporate governance

Many studies have confirmed that corporate governance affects the behaviours of members in an organisation, and, thus, organisational performance is changed by members' attitudes. As a result, in answering the research sub-question of corporate

governance, this study finds the following: owner-managers wanted to foster a collaborative organisational culture underpinning employees' stewardship behaviours; employees' attitudes were relatively closed to stewardship behaviours based on greater responsibility; policymakers believed the necessity of stewardship behaviours, being able to understand employees, to the growth of the company. These answers are similar to the findings in the literature, and the impact of responsibility on forming stewardship behaviours strongly supports studies by many authors. As a result, this study confirms that a corporate governance enhancing stewardship behaviours is more useful for motivating members' contributions and for the sustained growth of high-tech SMEs compared to having a principal-agency relationship.

8.6 Conclusion

This study explored the perspectives of three sets of stakeholder, owner-managers, policymakers and employees, on the growth of the company to find the factors influencing the sustained growth of high-tech SMEs. All the sample companies were sustained growth, high-tech SMEs, as defined in section 2.2.3. Owner-managers and employees described their experiences and perspectives on the procedures which their companies need for sustained growth. Policymakers showed their perspectives for the critical factors enabling the sustained growth of high-tech SMEs in terms of the view of the public sector.

To answer the main research question, ***What factors underpin the sustained growth of high-tech SMEs?***, this chapter provided four categories: owner-managers' competences, employees' contributions and collaborative organisational culture as the internal factors; R&D actions with financing capability and market analysis through various strategies were provided as the external factors; R&D subsidy schemes, policy flexibility and policy continuity were provided as the factors for policy impacts; and fostering stewardship behaviour to improve business performance was provided as an influential corporate governance.

Given the characteristics of high-tech SMEs, this study confirms the significant role of R&D actions for achieving the sustained growth of high-tech SMEs. In particular, owner-managers and employees agreed on the importance of high-skilled people.

Policymakers recognised not only the critical contribution of R&D subsidy schemes for SME growth but also were concerned at the dependence of high-tech SMEs on the government R&D subsidy. Furthermore, participants' perspectives differ in some points. Indeed, owner-managers and employees represented asymmetric views on the performance of employees (Fig 8.2).

To sum up, the answers to the research questions show supportive evidence to prior studies overall. In particular, the findings show a wide range of knowledge about what owner-managers consider achieving the sustained growth and how employees think themselves for the role in the growth of the company. Furthermore, we can see the policy implementation gap between owner-managers and policymakers for the enterprise policy. From these results, this study could additional evidence to prove and support broadly previous studies related to the issue of SME growth in terms of various stakeholders' perspectives. As a result, all three parts of study illustrated critical view point for the factors of sustained growth, which is defined with a new definition in this thesis, and can consider the necessity of further studies in this specific issue. Chapter 9: Conclusion revisits the research framework and reviews the results. It also discusses the contributions, the implications for owner-managers and policymakers, the research limitations and future research directions.

CHAPTER 9 CONCLUSIONS

9.1 Introduction

SME growth is an important part of policy and research in many countries (Birch 1987; Delmar et al. 2003; Mason and Brown 2013; Mogos et al. 2015; Pereira and Temouri 2018). High-tech SMEs, in particular, contribute to job creation in many OECD countries (OECD 2018a). While there are few studies specifically looking at technology-based firm growth and the growth of high-tech industries (e.g. Coccia 2009; Coad and Hözl 2010; Love and Roper 2015; Colombelli et al. 2016), most mainly focus on specific factors such as employment growth, job satisfaction, revenue growth, financing, R&D actions and their relevancy to job creation and firm growth, as reviewed in Chapter 2. Also, given the contribution of sustainable growth to job creation and economic growth, this study defined sustained growth in section 2.2.3, referencing previous studies (e.g. Hall et al. 1987; Davidsson et al. 2005; Gilbert et al. 2006; Littunen and Virtanen 2006; Kefale and Chinnan 2012).

In a different way to previous studies, the current study adopts a novel approach to explore the perspectives of various key stakeholders' in relation to the various internal and external factors influencing the sustained growth of high-tech SMEs, including policy and corporate governance issues. This chapter revisits the answers to the research questions and discusses the contribution and research implications. Finally, the issues around future research and a personal reflection on the various experiences in developing this PhD research are discussed.

9.2 Factors influencing the sustained growth of high-tech SMEs

This study was aimed at exploring the various factors affecting the sustained growth of high-tech SMEs. Despite the different contexts of the participants' organisations (i.e. in terms of the high-tech sector, size and age of the firm, and policymakers), all were stakeholders in sustained growth high-tech SMEs, as defined in this study (Section 2.2.3). Using interview and investigative survey methodologies, this thesis explored participants' various perspectives on the main research question: **What factors underpin the sustained growth of high-tech SMEs?**

The examination of rich empirical data used four research sub-questions, as introduced in section 4.1 and summarised in figure 9.1. The answer to the research question is represented in figure 9.2.

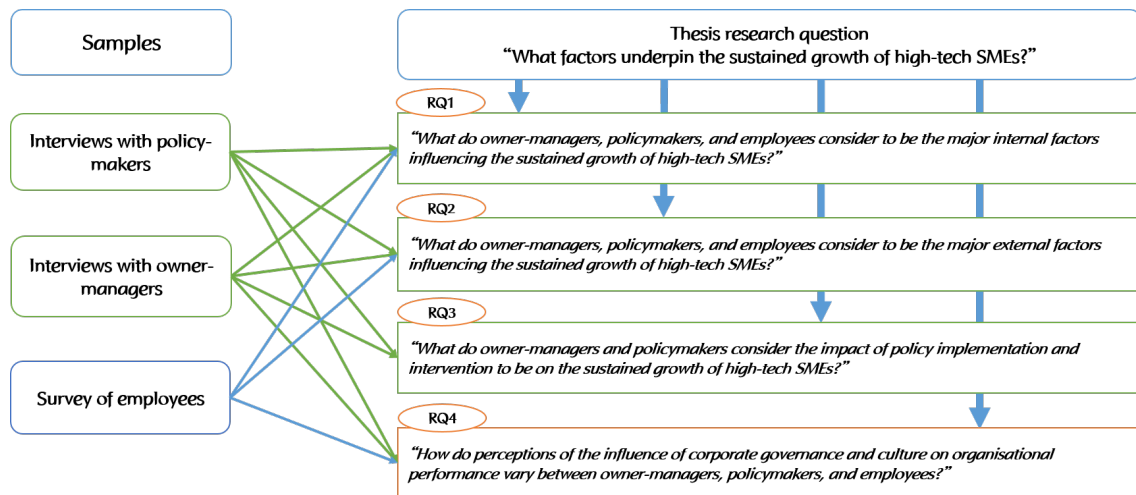


Figure 9.1 Samples and research questions

Source: Author

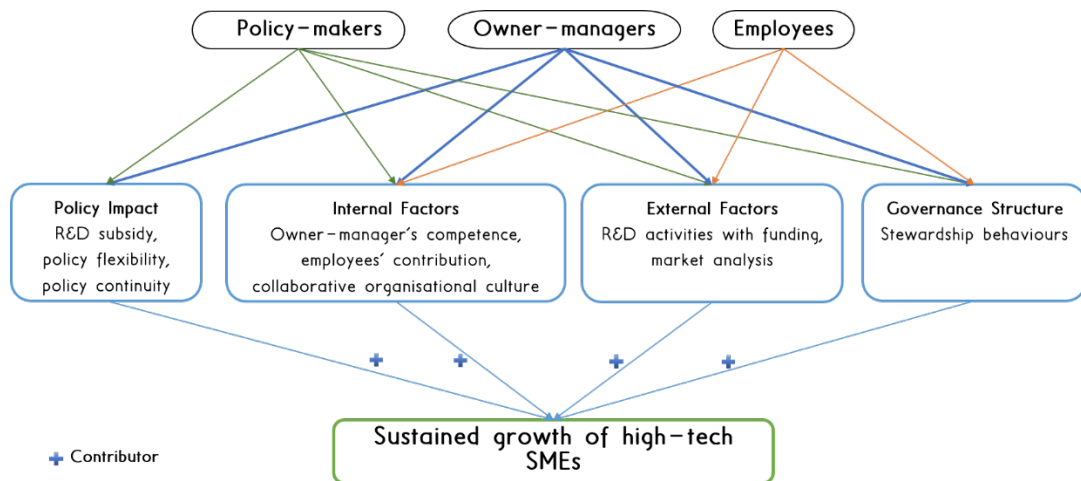


Figure 9.2 Factors influencing sustained growth

Source: Author

Investigations of relevant stakeholders to sustained growth high-tech SMEs

This thesis explored perspectives of various stakeholders relevant to the sustained growth of high-tech SMEs in South Korea. Owner-managers, who are a main sample group in this study, are founders as well as current CEOs, and could give exact information on the records of sustained growth of their companies. Employees, who belong to these main sample companies, shared many business successes and failures

with owner-managers in this study, and therefore, the thesis could more focus on their perspectives in the same organisations. Different from other studies, this study of also focused on those policymakers significantly associated with the enterprise policy of SMEs. In other words, this combination of exploring relevant stakeholders' perspectives for the sustained growth has not been reported in previous studies, such as discussions about growth factors (e.g. Wolf 2013; Lobonțiu and Lobonțiu 2014), and investigations about aspects of growth (e.g. Stam et al. 2008; Bishop et al. 2009; Gabrielsson et al. 2014).

From the findings of these three stakeholder investigations, this study showed some evidence related to the factors influencing this sustained growth of high-tech SMEs in South Korea.

RQ1. What do owner-managers, policymakers and employees consider to be the major internal factors influencing the sustained growth of high-tech SMEs?

RA1. Contributions of owner-managers and employees, and a collaborative organisational culture

The findings represent the important role of collaborative organisational culture, as well as the critical impact of members' performance on achieving the sustained growth of high-tech SMEs. In particular, owner-managers' competences were found to be a key component of the sustained growth. Moreover, employees valued owner-managers' functional management skills related to retaining high-skilled employees, and policymakers shed light on the owner-managers' management for improving employees' performance. Overall, all participant groups mentioned the necessity of communication to understand and collaborate with each other. As a result, they believed this collaborative organisational culture is one of the primary factors of sustained growth.

RQ2. What do owner-managers, policymakers and employees consider to be the major external factors influencing the sustained growth of high-tech SMEs?

RA2. R&D actions through financing capability and market analysis

The result confirmed that high-tech SMEs have to concentrate on R&D actions through financing capabilities, such as external funding and government subsidies. Findings also identify that the sustained growth of high-tech SMEs had been achieved through various

strategic decisions, such as extending business network and new market entry, based on market analysis. In particular, the interviews and the survey resulted in significant insights into the process of R&D actions for the sustained growth of high-tech SMEs. Owner-managers focused on financing to strengthen R&D competitiveness and employees wanted to see high-quality management skills from owner-managers in managing people to promote R&D actions. Policymakers perceived the critical role of R&D actions for the sustained growth of high-tech SMEs while they also worried about the propensity of SMEs to rely on R&D subsidies.

To sum up, owner-managers experienced of sustained growth enterprises stressed R&D actions and adopting various strategies based on market analysis; while policymakers and employees also emphasised the critical roles of R&D actions to achieve sustained growth of high-tech SMEs.

RQ3. What do owner-managers and policymakers consider the impact of policy implementation and intervention to be on the sustained growth of high-tech SMEs?

RA3. R&D subsidy, policy flexibility and continuity as a means to improve policy efficacy

In terms of the impact of policy support on the sustained growth of high-tech SMEs, owner-managers and policymakers agreed with the critical role of R&D subsidy schemes for active R&D actions and the growth of the company. Although there were some issues related to policy flexibility and continuity, these issues were also perceived as necessary factors, being able to improve the probability of sustained growth, by both owner-managers and policymakers. For instance, owner-managers used R&D subsidy to develop new products, as well as to save the operating cost of the company. Also, policymakers said that the purpose of R&D subsidy for SMEs is to encourage the R&D actions of SMEs, which faced disadvantage in competing in R&D investment levels compared to larger companies. In other words, R&D subsidy and flexible implementation with continuity are the key aspects of policy support for high-tech SMEs.

RQ4. How do perceptions of the influence of corporate governance and culture on organisational performance vary between owner-managers, policymakers and employees?

RA4. Positive contributions of stewardship behaviour on the organisational performance

Investigated results show positive perspectives toward stewardship behaviour for the sustained growth of high-tech SMEs. Corporate governance of SMEs influenced employees' contributions, and owner-managers and policymakers recognised the importance of corporate governance for the success of the business. In particular, owner-managers and policymakers believed that empowerment, participation, and communication could lead to extra employee effort for the company. Employees also thought the stewardship behaviour of organisational members was positively associated with the growth of the company. Overall, all participants perceived principal-agent relationship as an aspect of the conventional organisation, and they also agreed with the critical role of stewardship behaviour for achieving successful growth of the company.

What factors underpin the sustained growth of high-tech SMEs?

To sum up, participants discussed many critical factors and thus, the answer to the research question cannot be defined by only one factor. However, of those factors investigated in this thesis, participants put relatively more stress on R&D actions and the collaborative organisational culture in promoting the sustained growth of high-tech SMEs. Given the impact of organisational culture on the members' contribution to the company, a collaborative organisational culture represents a primary internal factor. R&D actions are the foundation of product competitiveness and thus, it was perceived as a key element for the growth of high-tech SMEs.

9.3 Limitations

This thesis focused on exploring various perspectives of stakeholders, related to sustained growth of high-tech SMEs, through the investigation of rich empirical data. That is, all participants are involved in specific successful businesses and thus, the study may have survivor bias and success bias. Despite this issue, this thesis complemented it

with a discussion of owner-managers' experiences for failed cases since the inception of their companies.

Furthermore, this study focused on the high-tech industries of South Korea and this was a constraining context considering other industries or national characteristics. These samples reflect one of the most active industrial regions in the world economy, but it is difficult to discuss the cultural background influencing the business growth of SMEs, as discussed in previous studies (e.g. Tayeb 1995; Haake 2002; Chung 2011). That is, consideration of regional and cultural contexts was limited in this study, and it needed to consider a wider range of industrial contexts to strengthen the reliability of the findings.

The online survey was carried out with owner-managers' help, and this approach could raise employees' concerns about anonymity because employees who participated in the survey were involved in the owner-managers' companies. In the research process, although information about the secure online survey tool was explained in detail to the participants, employees' trust in the anonymity of the research could affect the response rate because they are relatively vulnerable people compared to the owner-managers.

Given the characteristics of the samples, the sample size of the policymakers was relatively small for comparing each of the groups in the head office and the regional offices. Policymakers in the headquarters office and the policy practitioners in the regional offices have distinct roles in the policy implementation process. Although both views were compared in Chapter 6, there was a limitation to finding the apparent differences because 70% of the interviewees of each group had experiences as both policymakers and policy practitioners.

Despite some limitations, this study attempted a novel approach for exploring various stakeholders' perspectives and contributed new knowledge and found that there were some implications that may inform researchers, owner-managers, entrepreneurs and policymakers. These contributions and implications will be discussed in the next section.

9.4 Contributions and implications

This thesis explored a fruitful research area exploring how owner-managers consider improving their business performance, as well as overcoming external business difficulties. Also, we can see what employees want from their organisation and how they contribute for the growth of the company. In particular, the thesis represents policymakers' contributions and their perspectives based on their experiences related to the growth of SMEs. Each finding is discussed separately but converge to one point, which is the sustainable business of SMEs. From this empirical study, we can see critical contributions and implications for entrepreneurs, employees, and policymakers.

9.4.1 Contributions

Perspectives for the sustained growth of high-tech SMEs

The persistent growth of SMEs remains of significant interest to researchers, policymakers and practitioners. However, our understanding of this phenomenon remains underdeveloped, particularly when considering different stakeholder groups within growing organisations. Many studies separately discussed specific factors, such as industrial environments, internal relationship, leadership, and financial environment, that influence the growth of the company (e.g. O'Gorman 2001; Alvrez and Barney 2007; Eccles et al. 2012; Hyder and Lussier 2016). Previous studies also had limited analysis of other perspectives of closely related stakeholders.

However, this research has empirically examined various perspectives of stakeholder groups in relation to the factors influencing the sustained growth of high-tech SMEs in South Korea. This novel approach uncovered important insights which increased understanding of what activities may help firms to sustain their growth and performance based on an understanding of the perspectives of stakeholders relevant to the sustained growth of high-tech SMEs. In particular, the findings contribute to the encouragement of owner-managers' understanding of their employees, as a result, entrepreneurs could consider various strategies to motivate employees' commitment for the growth of the company, as well as to foster a collaborative organisational culture for improvement of the organisational performance.

Furthermore, policymakers discussed the importance of understanding each other between the owner-manager and employees to improve organisational performance as critical factors for the sustained growth of high-tech SMEs in terms of the observer and the supporter for SMEs. That is, policymakers also thought the collaborative organisational culture would underpin achieving the sustained growth of high-tech SMEs through making the collaboration between members stronger than before.

In overall, although participants discussed many critical factors influencing the sustained growth of high-tech SMEs, the collaborative organisational culture was perceived as the convergent point by all participants. This thesis discussed the critical factors of sustained growth of high-tech SMEs and confirmed each stakeholder has similar perspectives for the factors enhancing the organisational performance. Thus, the result may help many SME owner-managers to make decision for the growth of high-tech companies.

Evolution of enterprise policy through exploring various perspectives for policy support

This thesis investigated a specific group of policymakers, relevant to the development and implementation of enterprise policy for SMEs only. Therefore, the thesis could represent the comparison of what owner-managers wanted to get benefits from the policy support and how policymakers responded to owner-managers' demands. Although many studies about policies discussed the impact of policy support, the discussion of specific policies for SMEs remains underdeveloped. The thesis contributes to policymakers as they have to show positive evolution of the enterprise policies for achieving policy purposes nationally and regionally.

Concerning policy support, this thesis introduced new knowledge of how owner-managers think about the usefulness of policy support related to their business growth, and what objectives policymakers consider for policy implementation. From this finding, policymakers could find a way of reducing policy implementation gap between the government and SME owner-managers, and thus, owner-managers could adopt improved policies for the growth of their business.

The consideration of critical factors influencing on the growth of high-tech SMEs

This thesis shows the critical factors various stakeholders considered to be major elements for the achievement of sustained growth of high-tech SMEs. Although

previous studies discussed various determinants as to the growth of the company, there was a limited discussion about the case of high-tech SMEs. Based on this gap between previous studies and current research, the findings introduced what factors are worth considering for high-tech SME owner-managers having an intention to grow their business.

Furthermore, the thesis makes an important empirical contribution to the sustained growth factors literature and corporate governance theory. Also, the findings in this thesis have implications for entrepreneurs developing strategies for the sustainable growth of their business and for policymakers developing enterprise policy.

9.4.2 Theoretical implications

Corporate governance theory has often discussed the process and structure by ownership and factors influencing corporate governance, rather than an internal relationship between members influencing the organisational performance (e.g. Ching et al. 2006; Abdullah and Valentine 2009). However, this thesis examined the impact of corporate governance on organisational performance through a comparison study between members' behaviours with principal-agency theory and stewardship theory.

Through this discussion with corporate governance, the findings suggest that stewardship behaviours positively influence on the growth of the company even though the aspect of organisations is closely tied to the principal-agent relationship. In particular, the thesis confirmed some evidence on which factors that formulate collaborative organisational culture affected stewardship behaviours of employees, enabling the sustained growth of high-tech SMEs. Communications, sharing vision, and management skills to understand members' perspectives are perceived as the factors positively influencing to the sustained growth of high-tech SMEs. These factors are discussed as the elements enabling stewardship behaviours, as well as fostering collaborative organisational culture. Participants realised strict principal-agency relationship could limit emotional contributions between members because owner-managers would focus on the profit of shareholders rather than organisational vision being able to share with employees.

There are many theories related to the organisation but not all theories discuss the linkage between the theory and organisational performance. Given the relationship between the organisational culture and corporate governance, studies about the impact of corporate governance on organisational culture and performance may be a necessary subject for further firm growth studies.

9.4.3 Entrepreneurial implications

Factors influencing the growth of the company have been formed by a very complicated process as discussed in this study. Thus, entrepreneurs need to consider wider viewpoints for their decision-making rather than focusing on specific factors, such as employees' contributions and customer base (e.g. Van de Vrande et al. 2009; Carmeli et al. 2011a; Hsu et al. 2013). From the rich empirical studies, this thesis shows various factors which entrepreneurs have to consider to achieve sustained growth of their business in terms of various perspectives of stakeholders. That is, this novel approach makes owner-managers consider about what key factors they should adopt to respond to the internal and external business issues.

In particular, previous studies have discussed the factors affecting the growth of the company. They mainly concentrate on investigating the roles of owner-managers, employees and external advisers in contributing to the company (e.g. Robson and Bennett 2000; Martínez-Román and Romero 2013; López Fernández et al. 2016) whereas this study explores rich retrospective empirical data from the interviews with the owner-managers (founders). This process makes it possible to confirm some crucial insights into advice for owner-managers and also pre-entrepreneurs: awareness of owner-managers' expertise, understanding employees, maintaining networks and communication with customers. On the other hand, the perspective in relation to the collaborative organisational culture suggests important implications which entrepreneurs have to consider to avoid impeding sustainable growth due to unexpected conflicts between members, when they face with the stage of rapid growth. As a result, SME owner-managers may be helped in achieving sustained growth, when they consider this wider range of factors depending on their growth stages and members' behaviours.

9.4.4 Policy implications

Policymakers tended to do their jobs based on the regulation and administration process, but they also considered the necessity of flexible policy implementation to improve policy efficacy based on their partially empowered decision-making. This point is in line with owner-managers' requests for the policy implementation. Thus, this thesis suggests the necessity of flexible policy implementation to improve the policy efficacy for the enterprise policy supporting the growth of high-tech SMEs through understanding what entrepreneurs and policymakers may consider as key for the policy support.

In particular, the high-tech SMEs in this thesis used R&D subsidy schemes for their R&D activities, and they commonly identified a lack of flexibility for the policy implementation process when they used R&D subsidy for the development of their products. Although a few policymakers worried about the moral hazard of SMEs in adopting R&D subsidy for their R&D activities, SME owner-managers complained inflexible policy implementation without considering various situations SMEs have. They believed that flexible policy implementation improves R&D efficacy. Given the positive relationship between policy efficacy and the impact of policy support for the growth of high-tech SMEs, perspectives on policy flexibility are worthy of critical consideration for reducing policy implementation gap between entrepreneurs and policymakers, developing enterprise policy.

9.5 Directions for future research

This study used a different approach to getting the various perspectives of business stakeholders on the sustained growth of high-tech SMEs. However, there were some limitations, as mentioned in section 9.3. Future research may have to consider these limitations, and it will be necessary to widen the sample size and go beyond regional restrictions.

The research aim was to find the factors influencing the sustained growth of high-tech SMEs, but it might be better to use a wider wide focus that goes beyond the considerations of technology-oriented issues to improve the reliability of the research. In the discussion in Chapter 8, the results also confirmed that there is an asymmetric

distinction between the views of owner-managers and employees on the latter's contribution to the company. Therefore, any future study should discuss the differences between owner-managers and employees.

Policymakers tended to show positive attitudes towards policy support; at the same time, they could understand how the efficacy of policies has been reduced. In the results, some policymakers were aware of the discontinuity of policy support and some issues related to overly strict regulations. In this point of view, a study of the negative impact of policy support on SME business could be considered as a further opportunity for research on owner-managers' views.

Furthermore, given the regional limitation of this research, it is also useful to suggest that a comparative study could be made across different countries to explore commonalities and differences. From this process, the validity of research could be improved and also the result would be able to inform alternatives for responding to varying dynamic business environments.

Concerning the industrial contexts, this study explored the specific cases of high-tech SMEs in investigating various perspectives on the significant factors enabling sustained growth. However, there are many essential industries contributing job creation and national economic growth. Thus, it would be worthwhile to examine other influential industries in the economy to generate new insights to enhance the competitive advantages of many entrepreneurs.

9.6 Personal reflections

The doctoral research project can be regarded as challenging and fulfilling in investigating various aspects of social phenomena. If the author had not experienced this process, exploring the fascinating social actions between stakeholders would have remained an unknown area. The in-depth analysis of interviews with owner-managers and policymakers made the author consider the factors that contribute to the sustained growth of high-tech SMEs. In particular, the survey of employees was a sensitive process in securing the respondents' anonymity from their employers. While carrying out doctoral research, the author absorbed new knowledge and also expanded his view on

the world. A continuous literature review also helped to design the theoretical research framework, enabling discussion of perspectives between sample groups.

In undertaking the research questions, the author had a chance to consider many existing factors influencing businesses and filtered relatively significant factors to owner-managers. Through the data collection and analysis, the author was able to compare investigated factors with the results of this study. The process of data collection was divided into two stages: the face-to-face interviews with the owner-managers and the survey of employees was carried out over two months; the interviews with the policymakers were conducted for one month via electronic-based tools. The author attempted to get a wide range of information from the interviewees, and the period of the online survey was expanded to give more time to employees. The meeting with policymakers was carried out by videoconferencing, online-based text messages and e-mail because of the physical limitations and time issues involved. Although it was impossible to see their emotional attitudes in the same way as when conducting face-to-face interviews, the author used pilot interview questions to avoid moving away from the interview focus due to the interviews being online based. These various research steps critically influenced the careful consideration of various characteristics of the participants, and, thus, the author feels the perspectives garnered were improved for analysing and discussing the result of the thesis.

9.7 Closing comments

The PhD journey is not only long but has deep valleys and high peaks in reviewing previous studies and also seeking the development of a creative approach. The process of studying for this PhD enhanced the author's perspectives on the world, society and the people around us. Understanding social actions in this way would not have been possible without completing a PhD in Stirling Management School's Division of Management, Work, and Organisation. The author has an engineering background and found it difficult to quantify social actions in a qualitative milieu. In the end, the author understood the social context of members' interchangeable relationships. In terms of an engineer's viewpoint, social actions seem to be more complicated than electronic devices because there are no precise definitions or order. In terms of a social mechanism,

each social actor's behaviour influences all other social actions, and, thus, a diverse consideration of responses is worthwhile for making research stronger.

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Appendices

Appendix 1

Interview topic guide and interview questions for owner-managers

INTERVIEW BACKGROUND

The issues of firms' survival and firms' growth had been discussed by many studies before. There is statistical evidence why these issues are significant in South Korea. According to the South Korea national statistics, the overall survival ratio of firms dropped to about 38.8% in three years and around 27.3% in five years since the first year of entrepreneurs. Researchers and policy makers have been discussing the reasons and proposing diverse alternatives for these entrepreneurs' success. However, the survival rate of entrepreneurs had not been improved recently. Furthermore, there is a lack of studies which have discussed the reasons for survival with stakeholders such as owner-managers and policy-makers. Therefore, this study will focus on incumbent company owner-managers' retrospective stories and policy-makers' experiences in order to find the significant factors to lead the survival and growth of SMEs. Additionally, this study will discuss both views above on the causes of survival through growing, and also measure employees' views through online surveys.

(Characteristics of SMEs)

- (1) When did you start your business?
- (2) Where did you establish your company? (Did you move? Or not?)
- (3) Who were the founders?
- (4) How many people share ownership? (Private company?, Family ownership company? Or Public company on stock market?)

A. Influence of entrepreneurs' perceptions on the business (*Analysis of entrepreneurs*)

- A1. What was your motivation to start your own business?
- A2. How did your previous experience help you to start your business?
- A3. What division was the most important part in your organization during the period of start-up? (Examples: Marketing, R&D, and Exporting)
- A4. What was your competitive advantage during the period of start-up?
- A5. What do you consider are the contributions of entrepreneurship to society? (Examples: Social works, dividing of wealth, and job creation)

A6. What was the most helpful external factor during the period of start-up?
(Examples: Consultant, government support, investor, etc.) (What was the reason for that?)

B. Owner-managers' Changes depending on

Recent Business year (B1 to b4) (Within past three years)

B1. What was the biggest change in your business during the last three years?

B2. What did you identify in terms of opportunities and risks? (*common questions to find the change of opportunities and risks*)

B3. How did you prepare for external business influences? (Examples: Customers, policies, international factors, and environmental changes)

B4. How did you resolve internal issues? (Examples: Coordination, training, and expansion of organization)

Present Business (B5 to B7)

B5. How do you analyse the change of business environments compared to the past?

B6. What do you identify in terms of opportunities and risks? (*common questions to find the change of opportunities and risks*)

B7. What process do you have to carry out short-term and long-term business planning?

The period of High Growth (Employment growth) (B8 to B12) (*The definition of HGFs will be explained prior to interview in terms of growth pattern in OECD definition.*)

B8. When did you experience in high growth?

B9. What did you concentrate on in your business during that period? (Example: Marketing, R&D, export etc.)

B10. For how long a period did you have high growth?

B11. What do you think were the reasons that high growth continued or stopped?

B12. What strategy was the most efficient one for high growth?

C. Aspect of Growth (C1 to C5)

C1. Do you have some criteria to define company growth?

C2. Which measure of growth do you think is most effective in causing the sustainability of the company? (Examples: Employment growth and revenue growth)

C3. What do you think about the impact of high growth for sustainable business?

C4. What kinds of growth has the company experienced in the past? (Examples: Expanding markets, employment growth, and profit growth)

C5. What do you think is the relationship between the survival and the growth?

D. Internal influences for the sustained growth

Owner-managers (D1 to D4)

D1. How have you supported the skill development of employees in the organization?

D2. What do you think is the role of team managers and ordinary employees in order to achieve the best performance in the organization?

D3. What is necessary to gain employees' voluntary commitment?

D4. What do you think is the most desirable personal quality in owner-managers for the management?

Employees (D5 to D8)

D5. What organizational changes have you experienced after sustained growth?

D6. What do you think was the employees' contribution to sustained growth?

D7. To what extent do the employees understand the requirement of sustainable growth?

D8. What do you think is the impact of developing employees' skills on sustained growth?

Collaboration among members (D9 to 10)

D9. How influential was sharing business information with members of the company for sustained growth?

D10. What do you think is the impact of the trust between owner-managers and employees on sustained growth?

E. External influences for the sustained growth

Innovation (E1 to E2)

E1. How influential was innovation for sustained growth?

E2. What strategies do you have for innovation? (Examples: Government funding, joint research with higher educational facilities , hiring high skilled people, etc.)

External advice (E3 to E4)

E3. What else did you gain from external sources for sustained growth? (Examples: Finance, policy, consulting, etc.)

E4. To what extent did external sources such as consulting and investing have the effect you expected?

Policy supports (E5 to E8)

E5. How did you get the policy information relevant to the business?

E6. What do you think about the merits of government policy for SME growth?

E7. What do you think about the contribution of government policy to innovation and the employment?

E8. If you have experiences of using a policy for your business, could you tell me which policy you have used before? (Examples: R&D, Marketing, Export, Employment)

Appendix 2

Interview topic guide and interview questions for policymakers

INTERVIEW BACKGROUND

The issues of firms survival and firms growth had been discussed by many studies before. There is statistical evidence why these issues are significant in South Korea. According to the South Korea national statistics, the overall survival ratio of firms dropped to about 38.8% in three years and around 27.3% in five years since the first year of entrepreneurs. Researchers and policy makers have been discussing the reasons and proposing diverse alternatives for these entrepreneurs' success. However, the survival rate of entrepreneurs had not been improved recently. Furthermore, there is a lack of studies which have discussed the reasons for survival with stakeholders such as owner-managers and policy-makers. Therefore, this study will focus on incumbent company owner-managers' retrospective stories and policy-makers' experiences in order to find the significant factors to lead the survival and growth of SMEs. Additionally, this study will discuss both views above on the causes of survival through growing, and also measure employees' views through online surveys.

Government policies cover wide range of parts over through whole business regions. In this interview, important factors to grow high-tech SMEs will discuss.

Q1. What do you think are the important factors for the sustained growth of high-tech SMEs in terms of business level? (Examples: Employment's contribution, owner-manager's experiences, entrepreneurship, factors of production (labour, technology, other), etc.)

Q2. What do you think about pros and cons for the national and local policies to support the sustained growth of high-tech SMEs? (Examples: Firm survival, firm growth, job creation, etc.)

Government needs to enact inexistent policies which are required to help SME business.

Q3. To what extent do the national policies have effects to the sustained growth of high-tech SMEs?

Q4. What outcomes does the government want to get from implementing policies for supporting high-tech SMEs? (Examples: Employment, export, and turnover growth, etc.)

The process of policy implementation would be classified into four steps such as policy development, policy delivery, policy implementation, and policy evaluation. These are processed by policy makers and national policy makers have different responsibilities depending on hierarchy positions.

Q5. To what extent do you use external stakeholders' opinions to develop (implement) policies? And how do you use those opinions to develop (implement) policies?

Q6. When the new policy is developed, how do both policy makers and practitioners affect to develop policies?

Q7. In terms of your experiences, what step of above policy stages should be considered mainly to improve efficacy of policy? Why do you think so?

There is no owner in the public sector. Not only the government may possible to be principals but also ordinary people would be principals. SME owners also could be principals in the view of the department of SME supporting.

Q8. What do you think about your identification for your roles to support SMEs by policies? (Examples (Multiple choice): Creators, mediators, supporters, governors, deliverers, and managers, etc.) Why do you think so?

Q9. Would you mind telling me about key stakeholders for policy implementation (development) policies?

Q10. To what extent do your efforts (Examples: Expertise, experiences, and additional idea) contribute for SMEs in terms of development (implementation) of policies?

Q11. What motivation do you have for supporting SMEs? (Examples: Contractual working process, obligation, and labour donation)

Appendix 3

Information, consent form, and survey questionnaire for employees

The purpose of this research project is to explore employees' opinions about the factors that influence the growth of your company. This research project is conducted as part of his PhD research by Chongryol Park at the University of Stirling, UK. You are invited to participate in this research project because you are an employee of one of the survey companies.

Your participation in this research study is voluntary. You may choose not to participate. If you decide to participate in this research survey, you may withdraw at any time. If you decide not to participate in this study or if you withdraw from participating at any time, you will not be penalized. Your employer will not know if you participated in this survey or not.

The procedure involves completing an online survey that will take approximately 15 minutes. Your responses will be confidential and we do not collect identifying information such as your name, email address or IP address. The survey questions will be about your individual opinions concerning innovation and stable employment related to the firm growth. All data will be stored securely. To help protect your confidentiality, the surveys will not contain information that will personally identify you. The results of this study will be used for scholarly purposes and will not be shared with someone else.

If you have any comments or queries, then you can contact me at <<chongryol.park1@stir.ac.uk>> or my supervisors <<Prof Ronald McQuaid at ronald.mcquaid@stir.ac.uk>>,<< Dr Suzanne Mawson at suzanne.mawson@stir.ac.uk>>.

ELECTRONIC CONSENT : Please select your choice below.

Clicking on the "agree" button below indicates that :

- I have understood the above information
- I voluntarily agree to participate
- I am at least 18 years of age

If you do not wish to participate in the research study, please decline participation by clicking on the "disagree" button.

Agree ☐

Disagree ☐

A. ABOUT YOURSELF

Gender: Male ☐ Female ☐ I prefer not to say ☐

Age: 20 to 29 ☐, 31 to 40 ☐, 41 to 49 ☐, 50 and over ☐, I do not wish to answer ☐

Highest Education level: High School Undergraduate ☐, Postgraduate ☐, Others ☐

Division in company: Administration ☐ Marketing ☐ Research and Development ☐
others ☐

Which of the phrases below best describes your job here?

Permanent ☐ Temporary-with no agreed end date ☐

Fixed period-with an agreed end date ☐

Responsibility: Manager ☐ Leader(Supervisor) ☐ Employee ☐

(Description of job role:)

Career:

1. Is this your first main job in your life? Yes ☐, No ☐

2. (if you answer "No" for the question 1)

Have you ever worked in same industry as your present job? Yes ☐, No ☐

B. YOUR JOB

1. How many years in total have you been working at this workplace ?

Less than 2 years ☐, 2 to less than 4 years ☐, 4 to less than 7years ☐,

7 years or more ☐, I do not wish to answer ☐

2. Do you agree or disagree with the following statements about your job?

Strongly Disagree ☐ Disagree ☐ Slightly Disagree ☐ Slightly Agree ☐ Agree ☐ Strongly Agree ☐

– I think the amount of salary was definitely an important criterion for choosing my job

- I chose my job in order to follow my dream
- I think I have many chances to improve my skills in my job
- I have opportunities to be promoted due to my commitments
- I think my job is fit with my aptitude

C. ORGANIZATION AND YOURSELF

1. To what extent do you agree or disagree with the following statements about the organization?

Strongly Disagree ☐ Disagree ☐ Slightly Disagree ☐ Slightly Agree ☐ Agree ☐ Strongly Agree ☐

- I share many of the values of my organization
- I feel loyal to my organization
- I coordinate with my colleagues to develop my organization
- I play an important role in my organization
- My previous experiences help to improve the performance of my organization

D. OWNER MANAGER AND YOURSELF

1. Do you agree or disagree with the following statements about your owner-manager (or managers)?

Strongly Disagree ☐ Disagree ☐ Slightly Disagree ☐ Slightly Agree ☐ Agree ☐ Strongly Agree ☐

- The owner-manager (or managers) knows about my skills and organizes my job according to my level of skills.
- The owner-manager attempts to understand employees' views.
- The owner-manager(or managers) understands my individual problems and help to resolve those.
- The owner-manager treats employees fairly.

2. Overall, how good would you say the owner-manager at this workplace is at..?

Very Poor ☐ Poor ☐ Slightly Poor ☐ Slightly Good ☐ Good ☐ Strongly Good ☐

- Seeking the views of employees
- Responding to suggestions from employees
- Allowing employees to influence final decisions
- Other opinions for owner-managers ()

3. Overall, how satisfied are you with the amount of involvement you have in decision-making at this workplace?

Very dissatisfied ☐ Dissatisfied ☐ Slightly Dissatisfied ☐ Slightly Satisfied ☐ Satisfied ☐ Strongly Satisfied ☐

4. How much influence do you think you have?

Very Poor ☐ Poor ☐ Slightly Poor ☐ Slightly Good ☐ Good ☐ Strongly Good ☐

E. FIRM GROWTH AND YOURSELF

1. To what extent do you agree or disagree with the following statements about the firm's growth and survival?

Strongly Disagree ☐ Disagree ☐ Slightly Disagree ☐ Slightly Agree ☐ Agree ☐ Strongly Agree ☐

- I see that the firm is growing in terms of revenue.
- I see the firm's growth in terms of the employment growth
- I think my salary has grown according to the revenue growth
- I think the number of employees will grow depending on revenue growth
- I believe the firms' survival is the responsibility of the owner-manager
- I believe the firms' survival is the responsibility of all members in the organization
- I believe the firm's growth is the responsibility of the owner-manager
- I believe the firm's growth is the responsibility of all members in the organization
- I believe I can personally help the firm to achieve growth and the survival

Appendix 4

Multicollinearity of the model for the survey of employees

Tables A and B describe the result of the calculation and exhibit that there is no multicollinearity between variables in the mean VIF of 1.4 and 1.66, respectively.

Table A Multicollinearity calculation for employees' characteristics

<i>Variable</i>	<i>VIF</i>	<i>1/VIF</i>
<i>age</i>	<i>1.75</i>	<i>0.573044</i>
<i>res</i>	<i>1.43</i>	<i>0.696905</i>
<i>reten</i>	<i>1.35</i>	<i>0.740752</i>
<i>first</i>	<i>1.08</i>	<i>0.927696</i>
<i>Mean VIF</i>	<i>1.4</i>	

Table B Multicollinearity calculation for employees' attitudes

<i>Variable</i>	<i>VIF</i>	<i>1/VIF</i>
<i>shvalue</i>	<i>1.89</i>	<i>0.529484</i>
<i>loyal</i>	<i>1.84</i>	<i>0.542736</i>
<i>collab</i>	<i>1.81</i>	<i>0.554014</i>
<i>funcmng</i>	<i>1.57</i>	<i>0.635946</i>
<i>particip</i>	<i>1.47</i>	<i>0.680494</i>
<i>selest</i>	<i>1.36</i>	<i>0.734453</i>
<i>Mean VIF</i>	<i>1.66</i>	

Appendix 5

Calculation of Compound Annual Growth Rate (CAGR¹⁵) for the employment growth of sample companies and the industrial average employment growth

Identification (KSIC 2017)/ Codes of sample companies	Number of positive growth year during the study period	Starting Date	Ending date	CAGR(%)
		31-Dec-10	31-Dec-16	
The number of employees in the industries: electronics, communication, medical, precision, optical, and watch		225,175	234,021	0.64%
A (SE)	6	75	115	7.38%
F (SE)	6	18	70	25.40%
J (SE)	6	2	10	30.77%
K (SG)	3	4	15	24.64%
L (SG)	2	12	14	2.60%
O (SG)	3	263	274	0.69%
The number of employees in the industries: Software development and provider		106,115	115,786	1.46%
B (SE)	6	79	170	13.62%
C (SE)	6	7	16	14.77%
D (SE)	6	22	45	12.67%
E (SE)	6	25	49	11.87%
G (SE)	6	12	174	56.16%
H (SE)	6	45	88	11.83%
I (SE)	6	13	131	46.97%
M (SG)	3	130	148	2.18%
N (SG)	2	148	163	1.62%
P (SG)	2	7	10	6.12%
Q (SG)	5	49	75	7.35%

SG: Sustained growth firms (having employment growth of a higher CAGR than the average for the industry)

SE: Sustained growth firms having employment growth of six consecutive years

(Source: Author adapted from Number of Korean SMEs & Employees by Industry (2011, 2017) (South Korean government (2018e) and investigated companies)

¹⁵ Compound Annual Growth Rate (CAGR): the mean annual growth rate over a specified period of time. Starting with the first value in any series and applying this rate for each of the time intervals yields the amount in the final value of the series.

Appendix 6

Codebook of variables used in the analysis of the online survey

```
. codebook gen           the gender of the respondent

type:      numeric      (byte)
label:      gen
range:      [0,2]
units:      1

unique
values:      3          missing :      0/330

tabulation:  Freq.      Numeric      Label
              63          0 female
              265         1 male
              2           2 no answer
```

```
. codebook age           the age of the respondent

type:      numeric      (byte)
label:      age
range:      [1,4]
units:      1

unique
values:      4          missing :      0/330

tabulation:  Freq.      Numeric      Label
              55          1 20~29
              174         2 30~39
              91          3 40~49
              10          4 50~
```

```
.codebook res           the responsibility of the respondent
```


label: select

range: [1,6] units: 1

unique values: 6 missing : 0/330

tabulation:	Freq.	Numeric	Label
	3		1 strongly disagree
	11		2 disagree
	24		3 slightly disagree
	106		4 slightly agree
	150		5 agree
	36		6 strongly agree

. codebook **collab** *I coordinate with my colleagues to the company growth*

type: numeric (byte)

label: collab

range: [1,6] units: 1

unique values: 6 missing: 0/330

tabulation:	Freq.	Numeric	Label
	2		1 strongly disagree
	5		2 disagree
	9		3 slightly disagree
	65		4 slightly agree
	206		5 agree
	43		6 strongly agree

codebook **shvalue** *I do value-sharing with members in the organisation*

type: numeric (byte)

label: shvalue

range: [1,6] units: 1

unique values: 6 missing : 0/330

tabulation:

Freq.	Numeric	Label
3		1 strongly disagree
18		2 disagree
26		3 slightly disagree
94		4 slightly agree
159		5 agree
30		6 strongly agree

. codebook **particip** *The owner-manager allows to participate in decision-making*

type: numeric (byte)

label: particip

range: [1,6] units: 1

unique values: 6 missing : 0/330

tabulation:

Freq.	Numeric	Label
26		1 strongly disagree
64		2 disagree
63		3 slightly disagree
73		4 slightly agree
90		5 agree
14		6 strongly agree

. codebook **funcmng** *The owner-manager organises my job by validation of my skills*

type: numeric (byte)

label: funcmng

range: [1,6] units: 1

unique values: 6 missing : 0/330

tabulation:	Freq.	Numeric	Label
	5		1 strongly disagree
	28		2 disagree
	40		3 slightly disagree
	80		4 slightly agree
	154		5 agree
	23		6 strongly agree

. codebook **allgrw** *The growth of the company is the responsibility of all members*

type: numeric (byte)

label: allgrw

range: [2,6] units: 1

unique values: 5 missing : 0/330

tabulation:	Freq.	Numeric	Label
	0		1 strongly disagree
	4		2 disagree
	10		3 slightly disagree
	69		4 slightly agree
	166		5 agree
	81		6 strongly agree

codebook **pergrw** *I believe that my personal performance helps to achieve the growth of the company*

type: numeric (byte)

label: pergrw

range:	[2,6]	units:	1
unique values:	5	missing :	0/330
tabulation:	Freq.	Numeric	Label
	0		1 strongly disagree
	6		2 disagree
	13		3 slightly disagree
	97		4 slightly agree
	180		5 agree
	34		6 strongly agree