



**Key factors influencing the sustained growth of high-tech SMEs in South Korea - the perspectives of founder owner-managers**

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## **Key factors influencing the sustained growth of high-tech SMEs in South Korean - the perspectives of founder owner-managers**

### **Abstract**

#### **Purpose**

This paper explores key factors influencing high performing, sustained growth, high-tech small and medium-sized enterprises (SMEs) in South Korea.

#### **Design/methodology/approach**

A qualitative study is adopted to explore seventeen founder owner-managers of high-tech SMEs who sustained consistent employment growth, greater than the industry average, for 7 years. Within the sample, those with higher (10% or over) employment Compound Annual Growth Rates over this period are also compared to those with lower rates.

#### **Findings**

The study suggests that proactive approaches, such as flexible organization, risk management, fast decision making, and international market entry, are seen as important contributing factors to sustained growth. These findings contribute to a better theoretical and empirical understanding of sustained high-tech SME growth, in a country with a strong entrepreneurial and internationally competitive Information Technology sector. Also, collaboration across the SME was perceived as making an important contribution to staff growth, consistent with stewardship theory.

#### **Research limitations/implications**

The sample is based on successful high-tech SMEs, so there are limitations in extrapolating results to other types of firms, sectors or countries.

#### **Practical implications**

Key factors identified in this study can be considered by entrepreneurs seeking to achieve sustainable business. These also provide improved understanding for policy makers into the complexity of factors related to sustained and high growth of technology-based SMEs, which many countries are keen to foster to aid national economic growth.

#### **Originality/value**

The research provides new evidence exploring the diverse perspectives of founder owner-managers, on the sustained growth and failure in South Korean high-tech SMEs, and how these have changed since the inception of their business.

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3 Key words: sustained growth, founder owner-manager, high-tech SMEs, high-growth,  
4 collaboration, stewardship  
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## 7 **1. Introduction**

8 The contribution of high-growth companies to job creation and economic development has  
9 been widely recognized (Rannikko *et al.*, 2019). However, a neglected aspect of  
10 entrepreneurial growth is how it can be sustained over long time periods and studies are often  
11 related specifically to international rather than domestic factors (Hagen and Zucchella, 2014;  
12 Paul and Rosado-Serrano, 2019). While SMEs may grow rapidly for a period, sustaining this  
13 growth over many years is difficult (Coad *et al.*, 2020). Specifically, high-tech SMEs in the  
14 Information Technology (IT) industrial sector need to focus on open innovation, acquiring  
15 diverse knowledge and developing a suitable business model for sustainable growth (Yun *et*  
16 *al.*, 2015). Different growth rates of such an SME have also been associated with diverse  
17 factors, in particular its size or age (Haltiwanger *et al.*, 2013; Nassar *et al.*, 2014), and  
18 technological innovation abilities (Breheny and McQuaid, 2018; Love and Roper, 2015;  
19 Reynolds *et al.*, 1994; Smallbone *et al.*, 1995). Other important factors noted to influence the  
20 growth of firms include business planning, external funding and partnership with stakeholders  
21 (Coad *et al.*, 2014; Hyder and Lussier, 2016; Birch and Medoff, 2018).  
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33 Despite diverse studies of firm growth factors, research on factors influencing long-  
34 term, sustained growth has been relatively sparse and few have focused on sustained high-  
35 growth firms in particular (Hölzl, 2014; Daunfeldt and Halvarsson, 2015). Mogos *et al.* (2015,  
36 p.5) state that ‘sustainable growth... is the goal of achieving long-term high growth with low  
37 downside’. However, sustainability of high-growth performance is rare (Coad *et al.*, 2020), and  
38 many high-growth firms decline after a period of achieving high growth rates (Daunfeldt and  
39 Halvarsson, 2015). Despite the positive contribution of growing companies to job creation  
40 (Mason *et al.*, 2015), few companies have achieved sustainable growth. In other words, job  
41 creation is hard to sustain, thus many government policies tend to focus on fostering new  
42 ventures and entrepreneurs to create job opportunities (Michael and Pearce, 2009).  
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50 This paper aims to analyze the key factors perceived to influence sustained growth  
51 within high-tech Small- and Medium-sized Enterprises (SMEs) in South Korea to identify the  
52 major drivers enabling sustainable growth of high-tech SMEs. South Korea is of particular  
53 interest as it is a major technology-based economy with a strong, increasing share of the  
54 international IT business over recent decades, and also the South Korean government was aimed at  
55 fostering 280 thousands of new technology-based Startups every year by 2023 given the essential roles  
56 of job creation in high-tech SMEs (Lee, 2021). A characteristic of many high-tech SMEs has been  
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3 employment growth with limited or no sales or profit growth due to the early-stage  
4 development of products that are not yet fully commercialized (Gilbert *et al.*, 2006). Stam *et*  
5 *al.* (2008) pointed out that employment growth is a measure used to describe the growth of  
6 firms in many empirical studies as this is the most comparable indicator. In this paper  
7 employment growth is considered a critical measure to indicate sustained growth of high-tech  
8 SMEs. All 17 firms in our study grew each year over the period 2010 to 2017 and had a higher  
9 employment growth rate than the industrial average, as measured by the Compound Annual  
10 Growth Rate (CAGR)<sup>1</sup>. Within this sample, ten SMEs had at least 10% employment CAGR.  
11 The choice of 10% CAGR partly reflects both a European Union (2014, p.4) definition of high  
12 growth (at least 10% growth over three years and 10 employees at the start, although the OECD  
13 uses a higher rate of 20% for ‘gazelles’) and also an ad-hoc distinctive break in the sample.  
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22 Two research questions are addressed: first, *‘from the perspective of founder owner-*  
23 *managers, what factors influence the sustained growth of high-tech SMEs’*; and secondly, *‘how*  
24 *do these factors differ between higher-growth rate firms and others with growth just above the*  
25 *industry average?’* We use the term ‘sustained growth firm’ for those with above industry  
26 average growth, and no negative annual growth over the seven years of the study period, in  
27 order to reflect long-term growth stages from start-up to maturity.  
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33 **By analyzing critical factors and distinctive approaches by firms with diverse growth**  
34 **rates, this paper contributes to the sustainable growth literature, and corroborates the necessity**  
35 **of a broad investigation of critical factors. It provides empirical insights into the complexity of**  
36 **growth, based on the retrospective reflections of founder owner-managers of high-tech SMEs**  
37 **since the inception of their businesses and contributes to a better understanding of proactive**  
38 **business strategies for entrepreneurs seeking sustained growth. This also has implications for**  
39 **policymakers responsible for fostering sustainable high-tech SMEs.**  
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45 The reminder of the paper discusses theoretical background and literature on the  
46 internal and external factors affecting SME growth. In section 3 the research methods are set  
47 out, followed by the findings and then conclusions.  
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## 51 **2. Theoretical background**

52 SME business growth is a dynamic and heterogeneous process involving various complicated  
53 processes (Leitch *et al.*, 2010), with most start-ups having limited or no growth (Delmar *et al.*,  
54 2013). Garnsey *et al.* (2006) take a dynamic approach to firm growth, based on Penrose (1995),  
55 and use a typology of five different growth paths. They found that in Cambridge UK, most  
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3 surviving start-ups exhibited non-linear growth with a variety of setbacks and interruptions,  
4 although a small group did exhibit continuous growth paths over 10 years. In terms of  
5 technology-based companies, high levels of human resources underpin the survival and growth  
6 of companies despite being faced with uncertainty with financing issues (Martinez *et al.*, 2019).  
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8 In terms of influence and control, most SME founder owner-managers clearly play a principal  
9 role and strongly affect the organization's structure and governance. Jensen and Meckling  
10 (1976) used agency theory to explain the relationship between the principal, who is an owner,  
11 and agents who are bound to the organization. Principals made efforts to reduce business risks  
12 and to get better outcomes through the management of agency costs, verifying the role of agents  
13 (Eisenhardt, 1989). However, while principal-agency behaviour tends to be centred around  
14 individual interests, stewardship behaviour is based on organizational benefits. Stewardship  
15 theory can be argued to give greater recognition to the roles of social relations and psychology  
16 (Fox and Hamilton, 1994). Davis *et al.* (1997) noted that the relationship between managers  
17 and principals is not motivated by individual profits, but that a stewards' motivation is  
18 associated with the principal's objectives. Indeed, Hernandez (2008) has asserted that  
19 leadership is a significant factor in fostering stewardship behavior. Thus, owner-manager  
20 efforts in fostering collaboration between staff members may be more important than in larger  
21 organizations.  
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25 This study explores growth influences identified by founder owner-managers involved  
26 in the SMEs from their start and subsequent development. From the literature, growth factors  
27 can be classified into internal factors relevant to organizational elements and external factors  
28 related to industrial environments (Lumpkin and Dess, 1966).  
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### 30 **2.1. Internal factors**

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32 Owner-managers' industry experience is perceived as a positive influential factor in venture  
33 success (Lee, 2019) and business founders' practical knowledge is useful for creating business  
34 opportunities and stimulating growth (Kor, 2003). Conversely, owner-managers' experience  
35 may lead to biases that can impede the introduction of new technology and affect R&D  
36 investment decisions (Barker and Mueller, 2002). However, founders' contributions in  
37 founder-based firms are perceived as positive influential factors to the internal competitiveness  
38 and growth of companies (Wiklund and Shepherd, 2003; Wasserman, 2006). Indeed, CEO  
39 leadership affects collaboration, open communication and the promotion of cooperation  
40 activities among members (Carmeli *et al.*, 2011). In other words, the role of the CEO in the  
41 organization accounts for a wide range of decision-making processes, including managing  
42 conflicts among members (Edmondson and Smith, 2006). Of course, employees' experience,  
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3 motivation and training are also significant drivers for improving business performance and  
4 corporate growth (Littunen and Virtanen, 2006).

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6 Given the relationship between the owner-manager and employees, organizational  
7 culture can be considered an influence on business performance. For instance, Schjoedt *et al.*  
8 (2013) asserted that organizational membership is necessary for business success and Wolf  
9 (2013) found that employee integration affects the organizational changes necessary to achieve  
10 sustainable business performance. Similarly, psychological ownership of a company leads to  
11 the creation of stewardship behaviors, and vice-versa (Wasserman, 2006), as well as to  
12 fostering individual responsibility in the organization (Hernandez, 2012). In particular, a  
13 collaborative organizational culture positively affects employees' knowledge sharing in the  
14 organization (Ahmed *et al.*, 2016; Brown *et al.*, 2019) and is positively associated with business  
15 performance (Wallace and Mello, 2015). Daghfous (2004) suggests that owner-managers'  
16 actions, such as communication, culture and rewards, enhance employee performance and help  
17 create a collaborative organization. That is, organizational culture influences various aspects  
18 such as management, leadership, decision making, and the sustainability of the  
19 entrepreneurship process (O'Neill *et al.*, 2009).

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21 Alpenberg and Scarbrough (2020) discuss communication and connection between  
22 workers and mention the importance of collaboration to enhance social actions in  
23 organizations. This behavior is also related to the leadership in the organization. Employees'  
24 innovation behaviors are significantly associated with the leadership style of manager groups  
25 in high-tech SMEs and their flexible management is noted to lead to positive explorative  
26 employee behavior (Oluwafemi *et al.*, 2019). The owner-manager's strategic approach and the  
27 culture in SMEs, including improving the knowledge levels of employees, also significantly  
28 affects the sustained growth of sales and profits (Gray, 2006).

## 29 30 **2.2. External factors**

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32 Additionally, the growth of SMEs is affected by external economic conditions such as  
33 legislation and technology changes and macroeconomic factors, such as interest and exchange  
34 rates, inflation and unemployment rates (Ipinnaiye *et al.*, 2017). Hansen and Hamilton (2011)  
35 suggested that owner-managers of growing firms were more proactive and innovative,  
36 international market-oriented, and flexible in response to the business environment compared  
37 to non-growth firms. Given the critical position of technology for high-tech SMEs, innovations  
38 relevant to new activities are positively associated with exports, productivity, and growth (Love  
39 and Roper, 2015). Smallbone *et al.* (1995) pointed out that developing new products and  
40 extending the customer base are key elements to longer-term survival and growth. Various  
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3 social networks actions affect entrepreneurial action in the early stage, as well as further  
4 combinational actions, creation of opportunities, and knowledge articulation (Obstfeld *et al.*,  
5 2020). Hence, business networks make it easier for entrepreneurs to access customers who can  
6 act as sources of knowledge for the business and enhance the commercial success of innovation  
7 (Radicic and Pugh, 2017).  
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12 Regarding innovation, Sussan *et al.* (2017) found in their study of South Korean high-  
13 tech SMEs that balanced exploitative and explorative innovation enable longer-term growth,  
14 whilst biased exploitative innovation can lead to short-term profit. Further, Jun *et al.* (2021)  
15 found that customer-orientation and international expansion tend to be more effective in  
16 promoting innovation and performance than R&D orientation strategy across several  
17 industries.  
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22 R&D actions and commercialization are closely linked with company financing;  
23 growth and financial support of SMEs has a positive effect on capital investment, firm  
24 performance and employment (Kersten *et al.*, 2017). Thus, we can consider financial support  
25 as an underpinning of the growth of SMEs. Finance is particularly important at start-up and  
26 growth phases for SMEs, and much enterprise support policy is aimed at stimulating new firms,  
27 supporting the survival of firms, and fostering the growth of established firms (Reynolds *et*  
28 *al.*, 1994; Breheny and McQuaid, 2018). In this policy context, entrepreneurs, and in particular  
29 high-tech firms, are seen as significant drivers improving weak economic performance as well  
30 as a low levels of job creation (Thurik *et al.*, 2013) and are supported at various stages by  
31 policies such as subsidies and tariff protection, R&D subsidies, training, finance accessibility,  
32 utilization of networks, and developing institutions (Warwick, 2013). Chapman *et al.* (2018)  
33 also found that R&D subsidies stimulated companies to collaborate externally, and indirectly  
34 affected R&D expenditure in external collaborations. In Korea, despite discontinuities in policy  
35 support caused by political changes, the government contributes to R&D subsidy schemes to  
36 stimulate the R&D activities of high-tech SMEs (Kang and Park, 2012; Park *et al.*, 2019).  
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41 Haltiwanger *et al.* (2013) argued that young firms contributed more to creating jobs  
42 than small firms. Likewise, Lawless (2014) in the UK found that younger firms had a more  
43 positive correlation with employment growth than the size of the firm. Indeed, Decker *et al.*  
44 (2013) argued that start-ups and young firms contribute to job creation, but most start-ups failed  
45 within first ten years, and most surviving start-ups still remain small except for a few high-  
46 growth firms contributing to job creation (see Glancey and McQuaid, 2000). That is, young  
47 firms play an important role in job creation but also suffer job losses within a short time. A few  
48 outlying SMEs appear to provide most employment growth.  
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3 South Korea has among the highest share of private sector employment in SMEs among  
4 the OECD economies - 80% in 2016 (OECD, 2018). In 2017, the average number of people  
5 employed by Korean technology-based SMEs was 21.7 people in 2017 compared to 20.8  
6 people in 2016 (South Korean government, 2018, p.5). The ICT industry accounted for over  
7 10% of value added to the national economy in 2015, twice the OECD average (OECD, 2017a).  
8 Both ICT manufacturing and other information services accounted for over 8% of value added  
9 in 2015. As Jones and Lee (2018) suggest, SMEs in the ICT sector are the mainstream of South  
10 Korean SMEs, underpinning manufacturing and parts of ICT services as well as economic  
11 growth and job creation.

12  
13 A range of motivations influence entrepreneurs, such as creating their own career  
14 opportunities, reaching a critical life stage, desiring to grow and develop their own talent, or  
15 'push factors' like leaving an unsuitable position that limits their full creativity (Ray and  
16 Turpin, 1990), all of which may be influenced by business trends and economic conditions. It  
17 is important to consider the founder owner-manager's skills and knowledge (Colombo and  
18 Grilli, 2010), as well as their motivations, strategies, and other internal and external factors  
19 influencing sustained SME growth. Hence, this research explores founder owner-managers'  
20 retrospective accounts of their business' achievements using a qualitative research approach so  
21 as to provide new evidence and understanding of factors enabling sustained growth of high-  
22 tech SMEs. From the literature, this study developed the research framework (Figure 1).  
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[Figure1]

### 43 **3. Research Method**

44 This study focused on founder owner-managers' perspectives on the unique growth patterns  
45 their firms had achieved in the past seven years. Creswell (2014, p. 3) noted that qualitative  
46 research is a useful approach 'for exploring and understanding the meaning individuals or  
47 groups ascribe to a social or human problem' and thus, the qualitative research method is  
48 adopted for the evidence-based research (Rauch *et al.*, 2014). From our analysis of the  
49 empirical evidence, the findings can support theoretical development related to (sustained) firm  
50 growth.  
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56 In-depth semi-structured interviews were conducted with 17 founder owner-managers  
57 of South Korean high-tech SMEs to gather rich data on differing owner-manager perspectives  
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3 on sustained growth over the past seven years. First, the study investigated key factors  
4 **perceived to influence** the firms' sustained growth by exploring the owner-managers' key  
5 motivations for starting and growing the business and their business strategies to achieve  
6 organizational goals. Second, the reasons for the differences in growth rates between firms  
7 within the sample were analyzed, specifically the differences between higher-growth rates  
8 firms (over 10% CAGR) and those with lower growth rates.  
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### 13 **3.1. Sampling and data collection**

15 High-tech firms tend to concentrate on developing products without increasing annual revenue  
16 in the early years of the company, thus there is a lack of evidence related to rapid revenue  
17 growth patterns in SMEs (Gilbert *et al.*, 2006). Also, growth patterns of SMEs differ by various  
18 growth stages and ages, with previous studies identifying long-term growth and start-ups  
19 perform differently (Shepherd and Wiklund, 2009). Therefore, this paper defines sustained  
20 growth SMEs as employment growth over each year of the study period, 2010 and 2017, with  
21 a Compound Annual Growth Rate over the average for the relevant industry, see: (Hong *et al.*,  
22 2016; Côté and Rosa, 2017). **Korean technology-based firms are largely relying on**  
23 **entrepreneurs' decision making at the beginning of the business, thus entrepreneurs'**  
24 **characteristics are a key factor in achieving long-lasting, successful Start-ups and SMEs (Ahn**  
25 **and Kim, 2019). Hence specific research on founder owner-managers is essential to establish**  
26 **which growth factors strongly influence elements to persistent growth.** In consequence, owner-  
27 managers and companies investigated have followed primary characteristics: the current CEO  
28 is the founder owner-manager of the ICT or electronics manufacturing industry; and the  
29 company has the attribute of seven-year period of CAGR employment growth greater than the  
30 industrial average, reflecting long-term growth stages from start-up to maturity (e.g., Shepherd  
31 and Wiklund, 2009; Pickernell *et al.*, 2013; Bianchini *et al.*, 2017).  
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34 Each criterion was **used to identify firms for inclusion in this study using both the**  
35 **database of high-tech SMEs supported by the South Korean government as well as an**  
36 **independent database on registered companies in South Korea<sup>2</sup>. Founders of firms identified**  
37 **were approached using the publicly available contact details (telephone and email).** Given the  
38 criteria and geographical accessibility to businesses, 30 founder-owner-managers operating  
39 businesses in the Seoul Metropolitan area of South Korea, in high-tech industries related to  
40 Informational Communication Technology (ICT) were recruited at the beginning of 2018; 17  
41 participants initially accepted to take part in this research. One member of the research team is  
42 a native Korean speaker and visited in South Korea to hold in-depth, semi-structured face-to-  
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face interviews with participants between April and May in 2018. This resulted in a sample of 17 organizations with their founder owner-managers participating in interviews (Table 1).

### [Table1]

Interview questions were classified according to four main issues: factors influencing growth; organizational culture and management style; growth and business networking; perceptions of external environmental factors and policy support. The Appendix shows a summary of interview questions. Interviews took an average of fifty minutes and all followed the same overarching structure. All were recorded with permission and transcribed; transcripts were 4,500 words on average and anonymized using reference numbers (e.g., Owner-manager 1, and 2) to avoid identification. It is recognized that the sample may exhibit survivor bias (McGrath, 1999), that is those who did not meet the criteria were not interviewed but could hypothetically have made useful contributions. Yet many participants did reflect on historical cases of failure, thus allowing for the exploration of growth juxtaposed with the very real possibility of failure.

### 3.2. Thematic analysis of interview data

Once interview data were collected, they were subjected to thematic analysis with data analyzed and interpreted through a few themes via an iterative process, including coding (Braun and Clarke, 2006). Initial codes, such as teamwork and communication, which have been discussed in previous studies (e.g., Carmeli *et al.*, 2011; Alpenberg and Scarbrough, 2020), elicited the theme 'collaboration'. This procedure consisted of four stages: transcription of interview data; confirmation and familiarization with the interview; selecting, focusing on, simplifying, abstracting and transforming; and coding and interpreting. First transcripts and notes were translated from Korean (by the native speaker author) into English. As well as linguistic translation, a degree of cultural translation was also needed to properly express South Korean business culture and concepts into English and to enable them to be judged in relation to relevant concepts from the English-language academic literature. A process of iterative examination of the transcripts followed. Themes were developed inductively via identification of repetitions, transitions, similarities and differentiations and categorizing (Ryan and Bernard, 2003). After an initial coding of transcripts, these codes were merged into similar categories. Categorized themes were examined and refined as common themes, and, thus, the number of categories was reduced (see Figure 2).

### [Figure 2]

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5 These themes were analyzed by employment growth rates in order to identify elements  
6 aligned to different growth rate (see Table 2 below) as the second step. Therefore, to reflect the  
7 research questions, the findings are in two sections: factors enabling sustained growth of the  
8 whole sample; and distinct approaches of those with relatively high rates of employment  
9 growth. Ethics approval for the research was given by the researchers' institutional Ethics  
10 Committee.  
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#### 17 **4. Findings**

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19 The findings are be presented in two parts: the first section explores research question one  
20 concerning factors influencing the sustained growth of high-tech SMEs. The second section  
21 considers question two on the influences related specifically to those with at least 10% CAGR  
22 employment growth. The results indicate that the entrepreneurs in these exceptional growth  
23 companies emphasized their proactive approaches, such as flexibility and risk management,  
24 compared to those in companies with lower employment growth.  
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#### 31 **[Figure 3]**

#### 32 **4.1. Determinants of the sustained growth of high-tech SMEs**

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35 The narrative interview transcripts on how owner-managers achieved successful business  
36 growth compared with competitors form the basis this section.  
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#### 40 **4.1.1. Owner-managers' competence and employees' contributions**

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42 Owner-managers are observed to rely largely on their own personal experience, knowledge,  
43 and intention to grow at the beginning of the business (e.g., Kor, 2003). The findings endorse  
44 this view (see Annex for an overview of themes). Owner-managers specifically discussed their  
45 prior experience (e.g., setting up their current or earlier businesses) and elaborated on how this  
46 experience had a direct effect on their ambitions for, and actions to achieve, business growth.  
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49 As one owner-manager (OM13) stated:  
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52 *'...I had expertise related to my current business, customers would listen to*  
53 *my opinions, and I seized the chance to promote my [new business] proposal*  
54 *to customers.'* (Owner-manager OM13)  
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59 Many owner-managers had a strong intention to grow from the beginning of their  
60 business, which they suggested is an important entrepreneurial attitude motivating their

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3 creative ideas and business decisions. Owner-managers also highlighted the importance of  
4 sharing long-term business visions with employees to encourage employee motivation and  
5 appropriate contributions to the organization.  
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8 Owner-managers generally pointed to the critical role that employees play in supporting  
9 the achievement of sustained growth, with the discussion often centering on the use of  
10 management practices to encourage employee efficacy and contribution (e.g., financial  
11 rewards, making time to communicate with employees, operation of training programs and  
12 education). Many participants pointed out the importance of employee performance, believing  
13 employees' personalities were a resource for the firm's growth (owner-managers OM1, OM5,  
14 OM8, OM11, OM12, OM13, OM14, OM15, OM16, and OM17).  
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21 *'We annually conduct fifty hours of education for employees...The company*  
22 *is also supporting employees who want to study more at university. I believe*  
23 *employees' education is very important to improving our business quality.'*  
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26 *(Owner-manager OM5)*  
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28 Owner-managers attempted to understand employees' individual characteristics and  
29 managed them with various management skills to enhance business performance. Overall, there  
30 appeared to be no significant difference between owner-managers as to the importance of  
31 employee performance.  
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#### 35 **4.1.2. Collaboration and R&D**

36 All owner-managers felt that they struggled with a lack of human capital when compared to  
37 larger firms and thus spent time and energy trying to rectify this perceived weakness by actively  
38 encouraging collaboration and communication between organizational members. They noted  
39 that this would help achieve not only internal competitive advantages but also allow their firm  
40 to respond to the external business environment, business opportunities and larger competitors  
41 (OM3, OM4, OM7, OM10, OM11, OM12, OM14, and OM17). Good communication was a  
42 critical factor in influencing collaboration between employees for many interviewees (OM1,  
43 OM2, OM6, OM12, OM13, OM15, and OM16). As owner-manager OM14 explained:  
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51 *'...I think making consensus between the company and employees is*  
52 *important to the business and I operate group workshops to encourage*  
53 *communication and collaboration between members.'* *(Owner-manager*  
54 *OM14)*  
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3 The overarching sentiment was that the more employees communicated, the more they  
4 understood what they had to do and how they could contribute to the growth of the firm. For  
5 example, owner-manager OM12 made space and a time to meet employees:  
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9 *'We periodically share our core business values with employees. We have*  
10 *the time to communicate with each other, and I attempt to introduce our*  
11 *changes and systematize organic communication.'* (Owner-manager OM12)  
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14 Overall collaboration and communication were perceived by many owner-managers as the  
15 key element enabling employee retention and their emotional contribution to the company,  
16 and hence achievement of organizational competitiveness.  
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20 Owner-managers of high-tech SMEs did not focus primarily on either financing or  
21 technology, but rather considered them simultaneously in order to respond to the external  
22 business environment. All participants highlighted the importance of continuous R&D  
23 investment, and they strongly argued that the development of R&D capabilities through  
24 training employees and collaboration with business partners is an essential factor to achieve  
25 sustained growth. The R&D subsidy schemes<sup>3</sup> also contributed to the development of new  
26 products by reducing a business' financial risks during the pre-revenue development process.  
27 For example, Owner-manager OM9 could only continue the development of new products  
28 during the early stages of the business thanks to government R&D subsidies:  
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36 *'At the beginning of the company, we didn't have sufficient profits and*  
37 *annual revenue... but we had to develop a new product to survive, as well as*  
38 *to grow. Government R&D subsidy schemes strongly supported our R&D*  
39 *activities...'* (Owner-manager OM9)  
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43 A majority of the owner-managers observed that the R&D subsidy was critical in  
44 preparing the business for future growth (OM 2, OM3, OM4, OM6, OM9, OM10, OM13,  
45 OM14, OM15, and OM16).  
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48 On the other hand, many owner-managers articulated the challenges of engaging with  
49 such subsidies, noting that government policy implementation was generally too complex and  
50 stringent for them to completely abide by the rules (OM1, OM2, OM5, OM6, OM7, OM8,  
51 OM9, OM12, OM13, OM14, OM16, and OM17). Nevertheless, most owner-managers agreed  
52 on the critical role of R&D subsidies for product development and subsequently competitive  
53 market offerings in their high-tech businesses. There were no significant differences between  
54 samples.  
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Overall, owner-managers focused on factors such as employee performance, collaboration, and R&D. On the other hand, each owner-manager experienced different growth patterns.

We now consider why some firms exhibited higher growth rates across the study period.

#### 4.2. What influences higher sustained growth rates?

By analyzing the data, we identified three elements related to employment growth rates (Table 3): organizational management, customer base extension, and business strategy. In each theme, there were similarities as well as some variations between those with different growth rates. For higher-growth rate SMEs (10% and over), owner-managers commonly placed emphasis on having a flexible organization, fast decision-making, international market entry, and risk management, as critical factors enabling sustained growth.

### [Table 2]

#### 4.2.1 Organizational management

Owner-managers commented on various reorganization experiences and attempted to improve organizational performance. Findings showed that owner-managers of companies with growth rates under 10% operated their organization with several divisions divided by specific functions, but owner-managers of higher-growth rates firms (10% and over) managed their organization in more flexible ways. For example, owner-manager OM15 created a task force team to respond to new business demands of customers, and owner-manager OM16 adjusted their organizational structure, by the age band of employees, so as to more explicitly communicate with customers of a similar age. Owner-manager OM10 achieved rapid growth through active acquisition-based private investor capital, whilst owner-manager OM3 divided his company into a sales company and a manufacturing company to respond to the clients' demands.

*'... I reorganized divisions to improve organizational performance, in particular, I made a team of young-aged employees, and a team leader of this team is also a young man. I expect cohesive collaboration between them...' (Owner-manager OM15, growth rate 13.62 per cent)*

Conversely, owner-manager OM17 with a growth rate of below 10% considered that employees have to concentrate on improving their distinct expertise and thus he operates divisions in the way of encouraging internal competition between them. Owner-manager OM5

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3 and OM6 of companies with growth rates below 10% also focused on organizations divided by  
4 products.  
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6 Overall, owner-managers of companies with a growth rate of 10%and over were  
7 managing their organizations with a high level of flexibility compared to others those with  
8 lower growth rates. The findings confirmed one interesting point which three companies, 7+  
9 years and with over 100 employees, had growth rates under 3% and their owner-managers were  
10 managing the organization focused on functional management, including multiple layers and  
11 diverse divisions. Although the sample size is quite small, this finding is important as the  
12 evidence suggests the necessity of additional research into owner-managers' management of  
13 changes by the age and size of organizations.  
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#### 20 **4.2.2 Customer base extension**

21 Owner-managers thought that understanding customers' needs is the fundamental issue of  
22 business, and thus they prioritized the gathering of market information and industry trends in  
23 order to ascertain market demand as well as the likely receptiveness of markets to new  
24 offerings. The literature notes the importance of timing for successful product/service launches  
25 based on knowledge gathering from customers (Radicic and Pugh, 2017) and this issue was  
26 raised by several owner-managers. For example, Owner-manager OM1 attempted to read  
27 international market trends through frequent business trips across the globe. Owner-manager  
28 OM16 commented that timing is essential in business growth. If a company introduces a  
29 product in the market too early, customers may not realize the necessity of this product to their  
30 business or lives. On the other hand, if a new product is introduced too late, customers may  
31 end up using other alternatives. As owner-manager OM1 elaborated:  
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41 *'When I travel in many countries, I feel the past and the present of the*  
42 *industry because underdeveloped countries reflect the pattern of developed*  
43 *countries in their industry. It looks like time travel. I anticipate the future of*  
44 *our business from business trips in the USA.'* (Owner-manager OM1)  
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49 In addition to timing, owner-managers raised the concept of trust. Linked to the concept  
50 of trust, several owner-managers identified that trustworthiness (and reputation) in national and  
51 international markets can be strengthened by evidence of firm longevity and sustained  
52 performance. A number noted that they took part in domestic and international exhibitions to  
53 demonstrate their business continuity to potential clients, so as to act as a key differentiator  
54 from other less established organizations (OM5, OM6, OM9, OM11, and OM14). In particular,  
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3 most higher-growth owner-managers were more willingly to enter international markets  
4 compared to owner-managers of lower-growth firms.  
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6 The findings show the importance of market analysis and customer demands for  
7 sustained growth. Although all the owner-managers recognized the importance of customer  
8 base extension, they used different approaches to respond to the market. Companies with  
9 employment growth rate of 10% and over used mainly international business-oriented  
10 strategies, whilst those with a growth rate of under 10% often focused on maintaining an  
11 established domestic market.  
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#### 16 17 **4.2.3 Business strategy and risk**

18 Owner-managers of higher-growth companies were willing to undertake business risks, and  
19 they tended to prefer fast-decision making compared to lower growth companies (OM1, OM2,  
20 OM4, OM9, OM10, and OM15). For example, Owner-manager OM10 had twice decided on  
21 Merger and Acquisition (M&A) with external investors, finally achieving great success in  
22 growing ten-fold in seven years. He said;  
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28 *'... if I did not make decisions quickly, I could not grow my business.. If I*  
29 *didn't persuade investors to get external funding, I was not able to achieve*  
30 *this successful business growth in seven years... (Owner-manager OM 10)*  
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34 Owner-manager OM15 pointed out that considerations of the worst-case scenario in  
35 developing new business ideas was the most important approach in preparing for potential  
36 risks and challenges to sustained growth for the company. Whereas owner-managers of  
37 companies with a growth rate of below 10% thought maintaining established products was the  
38 driver of creating a new business opportunity; their companies also exhibited multi-layered  
39 decision-making processes, thus causing comparatively slower decision-making (OM5, OM6,  
40 OM12, OM16, and OM17). Risk attitudes varied over time, with owner-manager OM16  
41 suggesting that risk-taking was a primary driver when he found the company, but afterwards  
42 he re-organized the company to operate effectively with established products rather than  
43 taking risks to create new businesses.  
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51 Given the fast changes of the ICT industrial sector, timing in business is a critical factor  
52 (e.g., Radicic and Pugh, 2017). We can thus consider that a focus on the speed of decision-  
53 making and risk-taking may lead to differences in growth rates between companies`.  
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## 5. Discussion

Within this sample of firms, we found that smaller and younger companies showed higher growth. This was consistent with previous studies (e.g.: Decker *et al.*, 2014; Nassar *et al.*, 2014), although our findings also identified a considerable diversity of high growth performance across different ages and sizes. This exploratory research allowed us to increase understanding of the research questions: ‘from the perspective of owner-managers, what factors influence the sustained growth of high-tech SMEs’ and secondly, ‘how do these factors differ between higher-growth rate firms and others with growth just above the industry average?’

### 5.1. Factors influencing sustained growth high-tech SMEs

The findings suggest that self-perceived **owner-manager competence** and the critical role of employees, or **employee contributions**, act as primary influences on sustaining growth, triggering various strategies and actions in the company (Figure 2). Owner-managers sought to effectively use the company’s internal human capital to respond to external business environmental changes. They highlighted the importance of training employees and actively sought the various perspectives of senior staff when making decisions. These findings are consistent with studies discussing the importance of utilizing the owner-managers’ industry experience (Lee, 2019), business founders’ practical knowledge (Kor, 2003), and employees’ experience (Littunen and Virtanen, 2006).

Many owner-managers focused considerably on how to motivate and reward employees, including forms of communication to encourage participation and foster good relationships. They introduced and developed various management skills to increase voluntary employee contributions. Communication, sharing knowledge, training programs, and group activities were used to motivate emotional contributions from employees (e.g., Daghfous, 2004; Gray, 2006; Oluwafemi *et al.*, 2019). All owner-managers in this study asserted the importance of a positive relationship with employees, including shared visions and business strategies with their employees. These efforts affected employees’ psychological ownership (e.g., Fox and Hamilton, 1994; Davis *et al.*, 1997; Wasserman, 2006; Hernandez, 2008), even though the owner-managers’ position is technically that of a principal (e.g., Jensen and Meckling, 1976). In consequence, owner-managers elicited a strong commitment to the growth from employees. This research illustrates how psychological ownership by employees, and their psychological contract with the firm, is associated with stewardship behavior (Wasserman, 2006) and influences business performance and growth. Further studies are also required through a broad investigation of both groups.

Intra-organizational collaboration and R&D actions were presented as essential components in achieving competitive advantages and enabling sustained growth of sample companies across all the firms in this research. This strongly supports studies on the importance of collaboration within organizations (Daghfous, 2004; Alpenberg and Scarbrough, 2020) and R&D activities (Love and Roper, 2018; Park *et al.*, 2019). Owner-managers believed an essential role of communication was to improve collaboration between firm members and that it also supported employees' skills development, in turn supporting technological competitiveness and enabling effective internal development and application of R&D.

All of the owner-managers used government R&D subsidy schemes to improve R&D capabilities and acknowledged that they were crucial to the firms' higher sustained growth. In return their company achievements supported the public policy purpose of R&D subsidy schemes in stimulating R&D actions (Kang and Park, 2012) and reflected the benefit of government support at various stages of the development of the organization (Warwick, 2013). Chapman *et al.* (2018) also argued that collaboration between experienced companies supported by R&D subsidies magnified the indirect impacts such as R&D expenditure, but the centrality of their role was rarely identified. This raises the need for further studies on the contributions of R&D subsidy schemes to SME growth.

## 5.2. Factors differentiating employment growth between SMEs

The findings suggest that business stability was provided by functional management, strength in the domestic market, and established products, but exceptional sustained growth was more associated with proactive responses to issues, such as flexible organization, international market entry, flexible, risk-taking, and fast decision-making, to the various business environments.

With the intention of improving organizational performance, owner-managers continued developing and reorganizing their organizational structure. The findings suggest that **flexible organizational performance** positively affects the growth of companies compared to functional organizational structures, supporting work by Oluwafemi *et al.* (2019). Three relatively large organizations' owner-managers in this sample applied very structured and bureaucratic organizations in their companies and their growth rates were relatively low. This suggests a potential impact of bureaucratic organizational structure and the size of company. However, it is not possible to generalize the impact of size to the bureaucratic organization and another relatively large company's owner-manager often reorganized his company to respond to the external business environments but achieved a high growth rate. This finding suggests

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3 the necessity of exploring flexible organizational structures in declining or steady-state  
4 companies, regardless of company size.

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6 The importance of international markets is consistent with the owner-managers of  
7 higher-growth companies seeking **international market entry** as a stage of business  
8 expansion and growth in the international customer base (Hansen and Hamilton, 2011; Hagen  
9 and Zucchella, 2014). In contrast, owner-managers of relatively low growth companies focused  
10 more on the domestic market and used established customer networks to extend domestic  
11 customer base (e.g., Smallbone *et al.*, 1995).

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17 Owner-managers of higher growth companies appeared to use **rapid decision making**  
18 **and proactive risk management** to enhance competitive advantages, while relatively low  
19 growth companies highlighted the maintenance established businesses (e.g., Love and Roper,  
20 2015). On this basis, entrepreneurs experiencing lower growth or declining should consider  
21 reorganizing decision-making processes and focusing on proactive strategies. These elements  
22 may not be suitable for all organizations but would be worth considering for many companies  
23 which are experiencing difficulties in decision-making between staff members.

## 30 31 **6. Conclusions and future research**

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33 This paper identified a number of key factors that owner-managers considered as enabling the  
34 sustained growth of high-tech SMEs (i.e. they grew at rates above the industry average and  
35 showed continuous growth over 7 years). These included: owner-manager competence and  
36 employee contributions, collaboration, R&D actions, organizational structure, customer base,  
37 and business strategy to changes on the external environment. For faster growth firms in the  
38 sample (with an employment growth CAGR of 10% or over) greater emphasis was also placed  
39 on having a flexible organization, fast decision-making, international market entry, and risk  
40 management, as critical factors enabling sustained growth.

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46 **The study illustrates entrepreneurial behaviors, as well as owner-managers' strong**  
47 **intentions to grow through following specific strategies.** Thus, by analyzing critical factors and  
48 distinctive approaches by firms with diverse growth rates, this study contributes to the  
49 sustainable growth literature, and corroborates the necessity of a broad investigation of critical  
50 factors. Sustained growth of high-tech SMEs is rare and those high-tech SMEs need to  
51 constructively incorporate innovation and change (e.g., Coad *et al.*, 2020; Yun *et al.*, 2015).  
52 The results help indicate how these owner-managers achieved continuous and relatively high  
53 CAGR employment growth compared to others in the markets. In particular, this study is the  
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3 first focusing on founder owner-managers of high-tech SMEs in South Korea. Although many  
4 studies have investigated SME owner-managers, those involving founders have been less well  
5 represented. This study of founders supports the important role of SME business owner  
6 behavioral and personality, as well as other, factors in achieving sustained growth of high-tech  
7 SMEs since the inception of their businesses.  
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11 From investigating various perspectives of these founder owner-managers, this paper  
12 suggests two main theoretical areas for development: attributes of founders' leadership in  
13 higher performing companies; and the impact of relationships between owner-managers and  
14 employees on the growth of companies. Founder owner-managers in this study acted as the  
15 organization's CEO, and their strategies reflected their personal experiences and expertise.  
16 They attempted to make a wide range of connections with employees, and their leadership  
17 strongly affected collaboration and communication between all employees (e.g., Carmeli *et al.*,  
18 2011). They also dealt with complicated internal relationships between employees based on an  
19 understanding of previous strategies and actions in their companies (e.g., Edmondson and  
20 Smith, 2006). Therefore, this study suggests that the role of leadership in SME growth may  
21 vary according to the leaders' personal expertise and characteristics. At the same time, the  
22 results provide a better understanding of how SME founders motivate employees to improve  
23 their contribution to the organization. Founder owner-managers focused on fostering a more  
24 collectivistic organizational culture enabling increased stewardship of employees, based on  
25 employees' psychological ownership, and enhancing organizational performance (e.g., O'Neill  
26 *et al.*, 2009; Hernandez, 2012). The result broadly elicits the potential benefits of engaging  
27 stewardship behavior with employees, given the strong evidence of employee contributions to  
28 sustained growth in the these organizations. Employee activities to improve business  
29 performance were also connected to fostering collaboration (e.g., Ahmed *et al.*, 2016; Wallace  
30 and Mello, 2015; Brown *et al.*, 2019). Hence, greater consideration of the relationship between  
31 members' stewardship and the long-term growth of SMEs is needed.  
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48 This study also suggests practical implications for entrepreneurs and policymakers.  
49 Whilst many governments have focused on high-growth firms underpinning job creation and  
50 the large numbers of high-tech start-ups in recent decades, only a few of these firms have  
51 achieved sustained business growth (e.g., Coad *et al.*, 2020; Daunfledt and Halvarsson, 2015).  
52 Indeed, many studies overlook how much entrepreneurs want to grow their business. This study  
53 provided evidence on founder owner-managers' enormous efforts to survive and grow through  
54 exploring their retrospective reflection and experiences, and suggests factors useful in  
55 improving business competitiveness of high-tech SMEs. Entrepreneurs need to consider  
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3 proactive approaches to their businesses, while policymakers should focus on supporting  
4 sustainable businesses, balancing between firm creation and firm growth. Policymakers also  
5 need to consider flexibility in R&D subsidy schemes because owner-managers perceived that  
6 too stringent contracts for such schemes impeded R&D and firm performance. They considered  
7 government policy to be useful in expanding their technological abilities, as well as developing  
8 new products, thus, policymakers should consider greater policy flexibility to improve policy  
9 efficacy underpinning job creation, which is a priority of many governments (e.g., Michael and  
10 Pearce, 2009). Beyond the impacts of SME size and age on growth (e.g., Haltiwanger, *et al.*,  
11 2013), these findings also contribute to distinguishing those factors influencing growth rates  
12 regardless of age and size of companies, and suggest not only the necessity of enhancing R&D  
13 and collaboration in high-tech companies but also how critical factors may be considered at  
14 different growth steps (e.g. Love and Roper, 2015).

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24 The research illustrates the nuanced, multi-faceted nature of sustained growth and the  
25 need for further in-depth studies. It does have some limitations including the specific nature of  
26 the industrial sector chosen. Although recent industrial trends tend to focus on high-tech  
27 businesses and innovation which contribute considerably to the national economy, we suggest  
28 that some similar factors may apply to other key industrial sectors such as retail, travel, and  
29 transport. Nevertheless, the paper explores and contributes to a better understanding of the  
30 factors supporting the sustained employment growth of high-tech SMEs in South Korea and  
31 the findings suggest there is no 'one size fits all'. Thus, greater investigation using diverse  
32 perspectives is required to uncover a range of essential factors that owner-managers and policy  
33 practitioners should consider in different circumstances. Further research is also needed to  
34 establish comparators across a broad range of industrial sectors across different countries,  
35 together with the role, views and perspectives of a range of stakeholders in growing SMEs.

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9 <sup>1</sup> Compound Annual Growth Rate (CAGR) (The consecutive annual growth rate between two different years.) =

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$$\left( \sqrt[n]{\frac{\text{Value } \in \text{ the present}}{\text{Value } \in \text{ the past}}} - 1 \right) \times 100. \text{ n: number of years.}$$
  
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13 <sup>2</sup> The South Korean government issues a technology innovation certificate for high-tech SMEs (<https://www.innobiz.net>) and  
14 labor statistics are supported by the South Korean government (<http://laborstat.moel.go.kr>). The independent business database  
15 (called by KISVALUE) is operated by the NICE (National Information and Credit Evaluation) group, and this database  
16 supplies reliable credit information and business information on every company, and many public institutes  
17 (<https://kisvalue.com>).  
18

19 <sup>3</sup> The South Korean government set its R&D budget for SMEs at US\$1,287million (₩1.4trillion) in 2020 ([www.mss.go.kr](http://www.mss.go.kr)).  
20 The amount of South Korean government support for R&D was ranked as the highest rate as a share of GDP in OECD  
21 countries in 2016 (OECD 2017a). These subsidy schemes explicitly encourage both internal and collaborative research.  
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**Table 1. Owner-managers and sustained growth high-tech SMEs**

ID	Owner-manager expertise	Main business product	Age (2010) A: 0-7 B: 8-14 years	Size (2010)	Size (2016)	CAGR (2010-2016)	Industry (KSIC 2017*)	Industry av. CAGR (2010-16)
1	Engineer	Scanning electron microscope	A	2	10	30.77%	Electronics, communication, medical, optical, and watch (ICT Manufacturer)	0.64%
2	Engineer/Marketer	Business model/ kiosk device	A	4	15	24.64%		
3	Manager/Marketer	Protection film for mobile device	B	12	14	2.60%		
4	Engineer/Marketer	Electric lighting fixtures for exhibition	B	18	70	25.40%		
5	Engineer	Fluid power equipment	B	75	115	7.38%		
6	Engineer	Smart cards with magnetic stripe or chip	B	263	274	0.69%		
7	Engineer/Marketer	Product design services	A	7	16	14.77%	Software development and provider (Software developer)	1.46%
8	Engineer	Mobile game software publishing	A	7	10	6.12%		
9	Engineer	System software publishing	A	12	174	56.16%		
10	Engineer	Security software development	A	13	131	46.97%		
11	Engineer	Security software development	A	45	88	11.83%		
12	Manager/Marketer	User Interface development, graphic design	A	49	75	7.35%		
13	Engineer	Security software development	B	22	45	12.67%		
14	Manager/Marketer	Application software publishing	B	25	49	11.87%		
15	Engineer	System software publishing	B	79	170	13.62%		
16	Manager/Engineer	Application software publishing	B	130	148	2.18%		
17	Manager/Marketer	Application software publishing	B	148	163	1.62%		

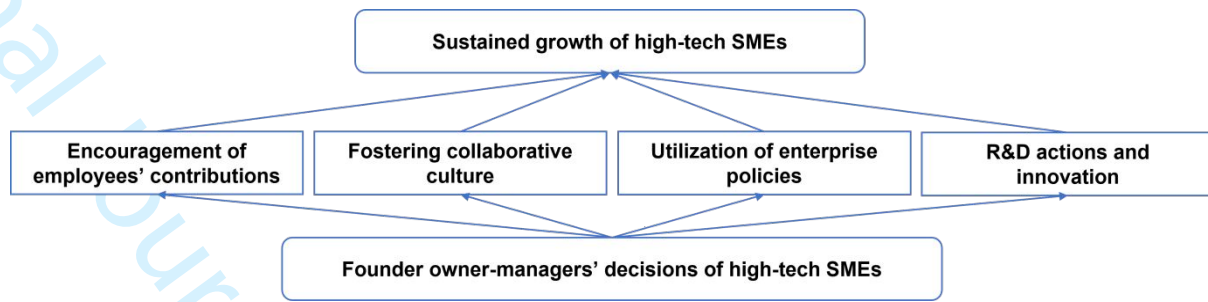
Note: Age (age of the company), Size (No. of employees), CAGR (CAGR of employment growth)

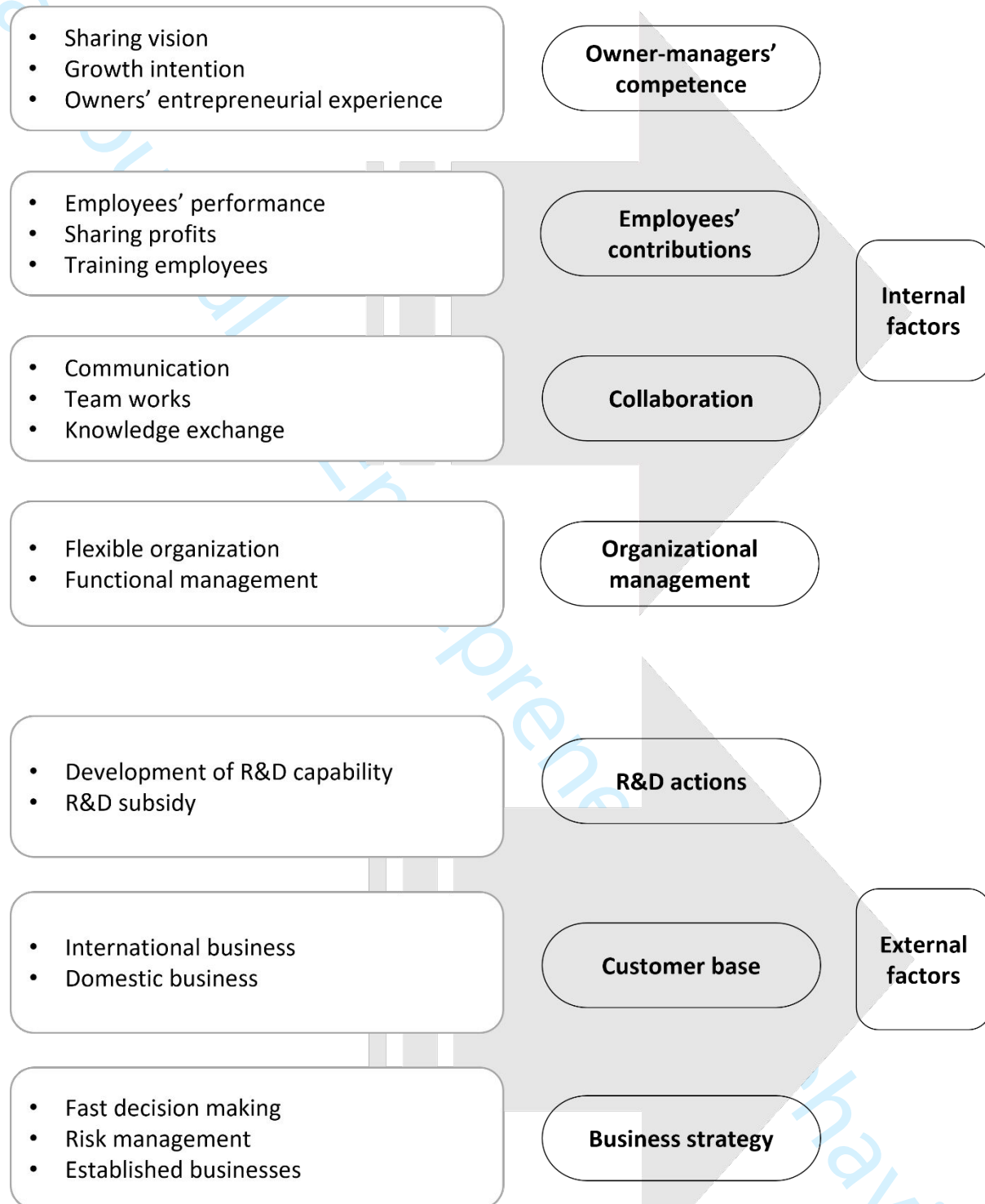
\*KSIC: Korean Standard Industrial Classification 2017 (KSIC 2017)

**Table 2. Cross analysis of findings by rate of sustained growth, size, and age**

<b>Employment Growth Rate</b> (CAGR, 2010 to 2017)	<b>20% and over</b>	<b>10% to 19%</b>	<b>Less than 10%</b>
<b>[Age in 2010]</b> <i>A: 0-7 years, B: 8-14 years</i> <b>[Employment Size in 2010]</b> <i>W: less than 20, X: 21-49,</i> <i>Y: 50-99, Z: 100 and over</i> *( ): Number of companies	<b>Aged Group:</b> A (4), B (1) <b>Size Group:</b> W (5), X (0), Y (0), Z (0)	<b>Aged Group:</b> A (2), B (3) <b>Size Group:</b> W (1), X (3), Y (1), Z (0)	<b>Aged Group:</b> A (1), B (6) <b>Size Group:</b> W (2), X (1), Y (1), Z (3)
<b>Themes</b>	<b>Categories by different employment growth rate</b>		
Owner-managers' competence	Sharing vision, Growth intention, Owners' entrepreneurial experience		
Employees' contributions	Employees' performance, Sharing profits, Training employees		
Collaboration	Communication, Team works, Knowledge exchange		
R&D actions	Development of R&D capability, R&D subsidy		
Organizational structure	Flexible organization	Functional management	
Customer base	International business	Domestic business	
Business strategy	Fast decision making, Risk management	Established business	

**Figure 1. Research framework**

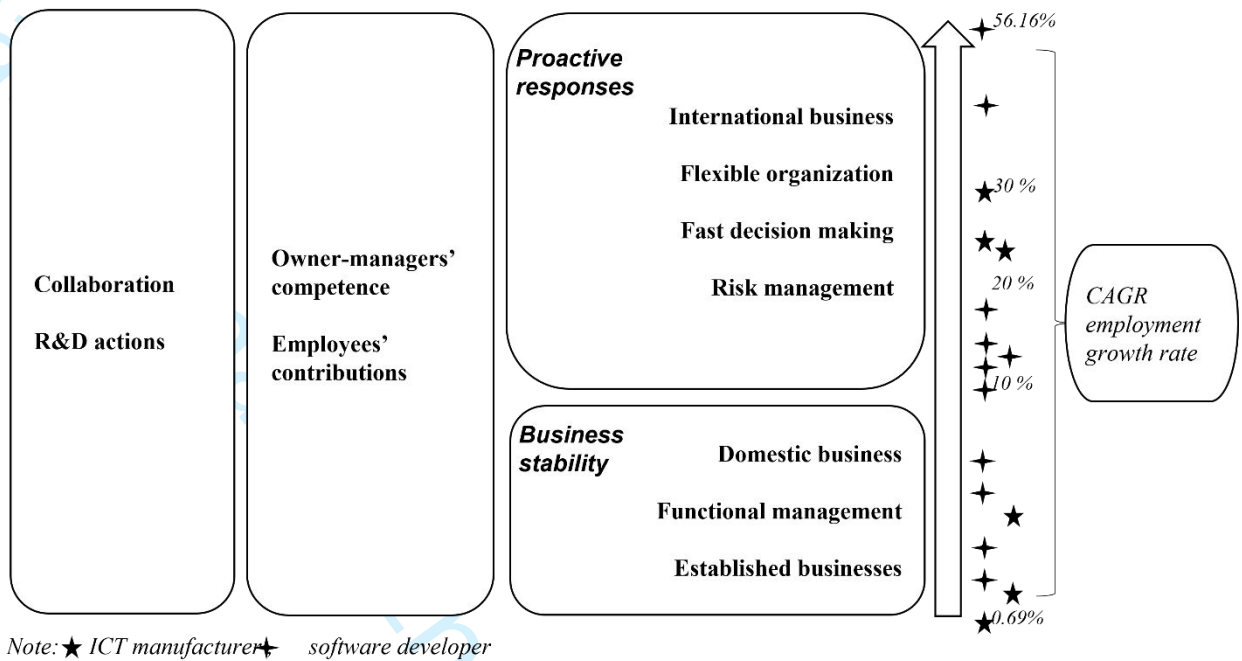


**Figure 2. Thematic analysis of interview data**

*Categories developed from initial codes initialized by interviews with seventeen founder owner-managers*

*Themes developed by categories*

Figure 3. Factors enabling the sustained growth of high-tech SMEs





### Appendix. A summary of interview questions

Main issues of semi-structured interview questions	Examples of questions
Factors influencing growth	<ul style="list-style-type: none"> <li>• <i>What was your motivation for firm creation?</i></li> <li>• <i>How did you achieve the survival/growth of your business?</i></li> </ul>
Organizational culture and management	<ul style="list-style-type: none"> <li>• <i>To what extent employees' contributions influence on the growth of business?</i></li> <li>• <i>How to deal with the relationship between employees?</i></li> </ul>
Growth and business networking	<ul style="list-style-type: none"> <li>• <i>What was your primary strategy to grow the business? Why did you adopt it as your primary strategy?</i></li> <li>• <i>How do you manage business partners and customers?</i></li> </ul>
Perceptions of external environmental factors and policy support	<ul style="list-style-type: none"> <li>• <i>How do you respond to the external environments such as policies and competitors?</i></li> <li>• <i>What primary needs do you consider available to get from the policy supports?</i></li> </ul>