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New Venture Growth: Current Findings and Future Challenges

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Introduction

Everybody seems to be interested in growth. Politicians and policymakers love growth because it brings new jobs and helps economic development. Startup founders want advice on growing their ventures into multi-billion dollar companies. Academics want to understand growth in order to help entrepreneurs and politicians achieve it. From a practice point of view, the recently established Future 50 program backed by the UK government to accelerate the growth of a selected group of high-growth digital startups represents a case in point. A thorough understanding of new venture growth is therefore critical when establishing these kinds of programs.

New venture growth is one of the founding topics of entrepreneurship research. Growth is a multidimensional and complex phenomenon (Davidsson, Achtenhagen, & Naldi, 2010; Delmar, Davidsson, & Gartner, 2003). It can be viewed as the development of the firm or simply as quantitative change in the size of the firm (Penrose, 1959). Growth is also one of the most frequently used measures of firm performance. A number of studies, whose explicit aim was not to study firm growth, have used growth as a measure of firm performance. This chapter focuses on new venture growth and is organized in two sections.

First, we review the state-of-the-art of the literature on new venture growth and classify this into three perspectives: the research on high-growth firms, which comes mainly from an economic perspective; the research on factors driving firm growth (i.e., antecedents of growth), which represents the entrepreneurial perspective; and research on the growth process. Research on high-growth firms primarily utilizes large-scale secondary databases to research stylized facts about populations of high-growth new ventures and their effect on the wider economy, mainly in relation to GDP growth and the employment rate. The second perspective uses quantitative and qualitative methods to investigate questions relating to how different factors (e.g., human capital, social capital, finance, and strategy) influence new venture growth levels. Finally, the third perspective investigates

the process of new venture growth. Process research comes primarily in the form of stages-of-growth models (e.g., Churchill & Lewis, 1983; Hanks et al., 1993; Kazanjian, 1988). These models have, however, been heavily criticized as overly deterministic (Levie & Lichtenstein, 2010) and are thus less diffused in contemporary research. Arguably, new research approaches are needed to reinvigorate this latter stream, which is also likely to be most useful to entrepreneurs in practice.

Finally, we outline our suggestions for moving the research agenda forward. We summarize the suggestions of previous major reviews and discuss methodological and measurement challenges in designing growth studies. Further, we argue that the extant research is not sufficiently useful to policymakers and entrepreneurs and thus pay specific attention to proposing future research directions that might address this gap.

New venture growth research is a vast and fragmented landscape that is impossible to cover in-depth in one chapter. We focused on summarizing the core contributions, but space constraints have meant the exclusion of some nuanced discussions. We will therefore occasionally point the reader to more extensive discussions of specific subject matter.

New venture growth: Current findings

This section summarizes current findings in firm growth research. We divide the literature into three sections: (1) research on high-growth firms; (2) antecedents of growth (the most thoroughly researched area with the largest number of studies); and (3) growth process. We conclude by examining how growth is measured. Our visualization of the landscape of new venture growth research is presented in Figure 1.

Insert Figure 1 about here

(What we know about) High-growth firms

Interest in high-growth firms (HGFs) is driven by the recognition that the bulk of job creation is the consequence of the fast growth of a small number of firms while the average firm's contribution is negligible (Coad et al., 2014). The HGF literature is empirical, largely atheoretical, and emerged as a large distinct research stream only weakly connected to other literature on firm growth (Zupic & Drnovsek, 2014). Research on HGFs usually comes from an economic perspective, is mostly conducted on large-scale secondary databases, and tends to be published in journals like *Small Business Economics* and *Industrial and Corporate Change*.

High-growth firms are most often defined in one of the following two ways: (1) as a percentage of firms recording the highest growth (e.g., the top 5% of the fastest growing firms) or (2) as all firms surpassing an annual predetermined level (e.g., all firms growing at least 20% annually in a three-year period) (Coad, Daunfeldt, Hölzl, Johansson, & Nightingale, 2014). The OECD and Eurostat's recommended definition of HGFs is that annual growth (measured in sales or number of employees) should exceed 20% for a period of three years and that the firm should have at least ten employees in the starting year (Eurostat-OECD, 2007). There are significant differences in how firms grow, and different growth measures are weakly correlated. This suggests that firms are often considered high growth only according to one measurement criterion. The consequence of the choice of growth measure is that different firms will be classified as high growth.

The literature on HGFs has mostly been guided by these firms' supposed *outsized contribution to job creation*. As most small firms do not have the capability or even motivation to grow, there is a small minority of firms that create most new jobs, which seems to be confirmed by the literature.

Henrekson and Johansson (2010) performed an analysis of recent studies and found that gazelles are indeed outstanding job creators. The term "gazelles" should be used only for young high-growth firms, specifically those that are less than five years old. Since Birch (1979), small firms have been identified as creating the majority of new jobs. Recent studies, however, seem to imply that the relationship between the age of the firm and growth is more important than the relationship between size and growth (Haltiwanger, Jarmin, & Miranda, 2013). Therefore, young firms, not small ones, create the majority of jobs (Lawless, 2014).

Gibrat's law (Gibrat, 1931; Sutton, 1997) – the law of proportionate effect – states that firm size and growth rate are independent and that growth has no correlation through time. This represents the most researched issue in the HGF literature. HGFs tend to be smaller in size, which runs contrary to Gibrat's law (Moreno & Casillas, 2007). Most empirical studies now tend to reject Gibrat's law for smaller firms. However, the law appears to hold for larger firms. The law is a good first approximation of growth rate distribution, indicating that growth in HGFs has a large random component (Coad et al., 2014). Firms' growth rate distributions tend to be tent-shaped, meaning that the majority of firms do not grow at all while a small number of firms experience high-growth episodes.

It seems to be that high-growth firms are *one-hit wonders* (Daunfeldt & Halvarsson, 2015) as most are unable to sustain high growth beyond a brief period. Coad and Hölzl (2009) found a negative autocorrelation of annual growth in small growing firms, which means that sustained fast growth is a

very rare occurrence. Furthermore, the R^2 values of studies that aim to explain high growth are very low; the explained variation by these models is usually below 10% (Coad et al., 2014).

HGFs are not necessarily high-tech. The often assumed association between high-growth firms and high-tech industries is not empirically supported. HGFs come from all sectors (Henrekson & Johansson, 2010). Technology-based firms are represented roughly equally in high-growth as in all firms. However, service sectors seem to have a slightly larger proportion of HGFs. High-growth SMEs in countries closer to the technological frontier have a higher R&D intensity than others while, in other countries, there is no difference in R&D intensity between high-growth SMEs and others (Hölzl, 2009). Hölzl investigated the connection between investment and R&D on European-wide data from a CIS survey and concluded that R&D seems to be important only for high-growth SMEs in countries close to the technological frontier.

It is difficult to conclude from the HGF literature what policymakers should do to spur economic growth and increase employment. As noted earlier, HGFs cannot be reliably predicted; high growth is not usually a persistent phenomenon; and there is a significant random component in growth rates. The explanatory power of models is low. Young small firms do create the majority of jobs but also have the highest rates of churn (Anyadike-Danes, Hart, & Du, 2015). Furthermore, Nightingale and Coad (2014) listed several methodological and political biases in the research on entrepreneurial firms, which resulted in positive bias in assessments of the impact of startups on the economy. This leads us to the conclusion that although research on HGFs has produced several important stylized facts, its lessons for policy are mostly in relation to “what not to do” and that “it’s complicated” as opposed to concrete advice on specific policies that work.

This section briefly summarized the research on HGFs (for an in-depth treatment of the HGF literature, see Coad; 2009; for other recent reviews and summaries, see Coad et al., 2014; Henrekson & Johansson, 2010; Moreno & Coad, 2015).

Antecedents of growth

This section reviews research into various factors that drive firm growth: founders and the entrepreneurial team, resources, strategy, the external environment, barriers to growth, and other considerations. Most of the studies in this section examine the effects of antecedents on growth rates and are sometimes labeled as the “change of amount” research stream. Growth is viewed here as the dependent variable. This research tends to be published in general management or specialty entrepreneurship and strategy journals.

Founder and entrepreneurial team factors

Motivation and ambition are important drivers of firm growth (Baum, Locke, & Smith, 2001). Entrepreneurs with higher growth ambitions are more likely to create a high-growth venture. However, it is inaccurate to assume that most entrepreneurs have high-growth ambitions. On the contrary, the majority of small business founders have limited intentions to grow their ventures and are motivated by other goals (e.g., to provide for family or to enable certain lifestyles). Starting a new venture with the motivation of financial success is significantly connected with future growth (Cassar, 2007). However, growth motivation can be both a growth predictor and an acquired taste as the managers of firms that have experienced past episodes of high growth are more likely to be motivated by future high growth (Delmar & Wiklund, 2008).

A number of studies have examined the connection between entrepreneurial teams and growth. One issue in this regard is the association between leadership behavior and growth. Ensley, Hmieleski, and Pearce (2006) found that shared leadership (stemming from within a team by emergent formal and informal leaders) is more strongly associated with growth than vertical leadership (from an appointed formal leader as commander). Transformational and empowering dimensions of vertical leadership are even negatively associated with growth.

Founding top management team (TMT) characteristics have important consequences for a venture's subsequent growth. Previous experience in the same industry seems to be strongly associated with growth (Colombo & Grilli, 2005; Cooper, Gimeno-Gascon, & Woo, 1994). For instance, a content analysis of company narratives found that 76% of high-growth companies had founders with previous industry experience compared with just 24% of slow-growth firms (Barringer, Jones, & Neubaum, 2005). Specific competences and technical skills are linked to growth while general competences (e.g., organizing and managerial skills) appear not to be (Baum et al., 2001).

Colombo and Grilli (2005) found that founders with previous management experience gained easier access to private equity investment but that having that experience, on average, did not positively affect growth. However, obtaining private equity itself has a positive effect on future growth. Does this mean that venture capitalists are misguided by betting on ex-managers? Founders' education in economics or business fields positively affects growth. Their past joint work experience and heterogeneity in industry experience (founders with experience from both within and outside the new venture industry) have been linked to higher growth (Eisenhardt & Schoonhoven, 1990; Vissa & Chacar, 2009). University-based high-tech startups have been found to be slower growing than their independent counterparts (Ensley & Hmieleski, 2005).

Company founders can have common prior company affiliation (e.g., an entrepreneurial team working together before founding the firm) or diverse prior company affiliation (founders worked for different companies). Companies whose founding team has both common and diverse company affiliation are more likely to grow (Beckman, 2006). This finding suggests that shared understanding following common history encourages exploitation strategies (efficiency and speed of implementation) while creativity associated with diverse prior company affiliations encourages exploration behavior (innovation and change). Both of these contribute toward making firms more ambidextrous (i.e., able to handle both exploration and exploitation simultaneously) (Raisch & Birkinshaw, 2008). Similarly, Beckman, Burton, and O'Reilly (2007) found that diverse prior company affiliation and diverse functional experiences lead to a higher probability of venture capital investment, which is one of the predictors of growth. Adding experienced top-management team members when developing a venture is also associated with higher growth.

High growth in itself can lead to top-management team change because different managerial capabilities are needed to handle the increased complexity of managing the venture (Boeker & Wiltbank, 2005). This need can be counterbalanced by TMT functional diversity to ensure that the capabilities needed for growth are already present in the team. However, low growth can also lead to management team change as it is often perceived as a failure on the part of management.

Resources

The founding work of resource-based explanations of firm growth is *The Theory of the Growth of the Firm* (Penrose, 1959). Penrose suggested that there are managerial limits to firm growth.

Experienced managers need to train new managers, thus diverting time and attention away from their work, suggesting that there are adjustment costs to growth. The availability of experienced managers puts an upper limit on the rate a firm is able to grow, the so-called "Penrose effect." The second central tenet of Penrose's theory is the productive opportunity set (POS) facing the firm. The identification and exploitation of growth opportunities is dependent on managers' subjective evaluation of POS. The POS is influenced by a firm's current resources and knowledge and the ways in which managers can recombine them to develop new products and services. The legacy of Penrose's work was later further developed within the resource-based view (RBV) (Barney, 1991; Wernerfelt, 1984). Resources that are valuable, rare, inimitable, and non-substitutable (VRIN) are considered to be sources of competitive advantage. Acquiring and orchestrating the right resources is thus crucial for firm success.

Capabilities are firm-level constructs that reflect a firm's ability to use its resources. Growth-related capabilities can be divided into substantive growth capabilities (those that enable the firm to

compete and grow, e.g., new product development) and dynamic capabilities (those that extend, change, or create new substantive capabilities) (Koryak et al., 2015). For instance, one study found that marketing and financial capabilities can be associated with market expansion and innovation as two ways of achieving high growth (Barbero, Casillas, & Feldman, 2011). Another study based on 212 young technology firms established that technology and marketing management competences are linked to higher development speed (Salomo, Brinckmann, & Talke, 2008). Developed capabilities are a key growth enabler as high levels of resources cannot compensate for weak capabilities (O’Cass & Sok, 2014).

The most researched resources in the growth literature are human, financial, and social capital (i.e., networks). The performance of new ventures is often dependent on the initial human and financial resource base at startup (Cooper et al., 1994). *Human capital* includes both the human capital of the founders (covered in the previous section) and employee capabilities that help founders achieve their goals. A meta-analysis of human capital studies showed that the outcomes of human capital (e.g., knowledge, skills) are more strongly connected to entrepreneurial success than human capital investments (e.g., education, experience) (Unger, Rauch, Frese, & Rosenbusch, 2011). The connection between human capital and success is also stronger for young businesses but not for high-tech firms. Human capital thus seems to be important for both technology and non-technology new ventures.

Another highly researched topic is the importance of *networks* in firm growth. Two different kinds of networks are examined: entrepreneurs’ personal networks and firm networks. Personal networks refer to the social capital of the entrepreneurial team while firm networks are strategic alliances that small firms have with other firms. Social capital can also be a way for entrepreneurs to compensate for the lack of other forms of resources (e.g., human, financial), and social networks can also be a source of advice and emotional support. Networks allow entrepreneurs to access resources and capabilities they do not possess. Moreover, they can enhance the effectiveness of existing financial and human resources (Florin, Lubatkin, & Schulze, 2003). A variety of weak ties that bridge otherwise disconnected groups (Burt, 1992; Granovetter, 1973) make it more likely for entrepreneurs to acquire new information and knowledge.

It is mostly acknowledged that the *social capital of entrepreneurs* has a positive effect on growth. In their longitudinal study, Davidsson and Honig (2003) found that bridging and bonding social capital consisting of both strong and weak ties play an important role in new venture development. Lechner and Dowling (2003) also found that both strong and weak ties are positively associated with firm growth. Indeed, as Pirolo and Presutti (2010) suggested, finding the optimal configuration of strong

and weak ties is one of the major challenges for startups. Structural holes in entrepreneurial teams' external networks are positively correlated with new venture performance (Vissa & Chacar, 2009). Additionally, specific human capital in the form of domain knowledge seems to enable entrepreneurs to leverage bridging ties (i.e., connecting otherwise separate networks) for growth (Scholten, Omta, Kemp, & Elfring, 2015). The combination of network centrality and extra-industry bridging ties in entrepreneurial teams with high entrepreneurial orientation has also been found to enhance new venture performance (Stam & Elfring, 2008).

Khaire (2010) showed that new ventures can overcome lack of legitimacy and status by mimicking the structures and ceremonial activities of established players and becoming affiliated with them. In this way, new ventures can grow and overcome their lack of resources. Notwithstanding, some studies have found that social networks at founding seem to have a negative effect on sales in subsequent years (Lechner, Dowling, & Welppe, 2006).

While the majority of network studies are based on data from developed economies, several have explored *networks and institutions in emerging economies*. Batjargal's (2010) survey of software entrepreneurs in China and Russia discovered a negative effect of structural holes on the profit growth of new ventures. Somewhat conflictingly, a study of 637 entrepreneurs in four developed and emerging economies linked structural holes with revenue growth (Batjargal et al., 2013). This link was stronger in the presence of weak and inefficient institutions. Another study (based on the same data collection) investigated how the proportion of family ties in different types of networks (business advice, emotional support, or business resources) helps or undermines firm growth (Arregle et al., 2015). Network capabilities can also strengthen the relationship between entrepreneurial orientation and growth performance (Walter, Auer, & Ritter, 2006). Finally, strategic alliances are another form of network (this is discussed in the strategy section).

Another extensively researched predictor of growth is finance. Fast growth usually requires increasing amounts of capital that can be sourced from venture capitalists, banks, or customers. Finance studies on growth have examined how startups use various types of financing (Cassar, 2004), credit constraints faced by new technology-based firms (Colombo & Grilli, 2006), growth-cycle theory of small business financing (Gregory, Rutherford, Oswald, & Gardiner, 2005), and how bootstrapping new ventures affects their growth (Vanacker, Manigart, Meuleman, & Sels, 2011). The role of venture capitalists has been thoroughly examined, and several studies have found that firms supported by venture capital investment experience higher growth (Inderst & Mueller, 2009). However, a recent meta-analysis challenged this view (Rosenbusch, Brinckmann, & Müller, 2013) and, after controlling for industry selection, found that the venture capital effect on growth is small.

Nevertheless, the working venture capital industry is considered to be one of the cornerstones of the successful technology entrepreneurial ecosystem (Grilli, 2014).

Nason and Wiklund (2015), in their meta-analysis of growth studies, made the distinction between VRIN resources characteristic of RBV (Barney, 1991) and Penrosean versatile resources. VRIN resources enable firms to distinguish themselves from competitors that do not possess such resources as a way of facilitating sustained growth. Conversely, resource versatility allows managers to use them in a variety of ways to develop a broad range of new products and services, thus increasing a firm's productive opportunity set and enabling its managers to take broader strategic actions. A meta-analysis of 113 studies showed that VRIN resources have no effect on growth while more versatile resources can be linked to higher growth (Nason & Wiklund, 2015). This spells bad news for RBV-based growth explanations. The authors thus recommend that future studies build on Penrose's theory instead.

Strategy

A sub-stream of the growth literature examines the connection between firm strategy and growth. Studies on the effects of competitive strategies on growth have been subject of conflicting findings. Some studies have shown that higher levels of competitive strategy (focus, low-cost, or differentiation) are positively associated with higher growth (Lechner & Gudmundsson, 2014). Others have found that the differentiation strategy has a positive effect on growth while focus or low-cost strategies have no effect on growth (Baum et al., 2001), that no single generic competitive strategy can be linked to higher growth (Leitner & Güldenbergl, 2009), and that combined strategies perform better.

Strategic decision speed has been connected with higher growth, an effect that has been especially pronounced in dynamic environments (Baum & Wally, 2003). This finding might encourage managers to follow the strategy of simple rules (Sull & Eisenhardt, 2012), but in dynamic industries, higher growth is also associated with higher strategic variety (Larrañeta, Zahra, & Galán González, 2014).

Entrepreneurship orientation (EO) (Miller, 1983) has also been shown to be one of the most robust predictors of growth (Wiklund, Patzelt, & Shepherd, 2009). EO captures the entrepreneurial aspects of firms' operations (Lumpkin & Dess, 1996) and is usually defined as a multidimensional construct that includes risk-taking, proactiveness, and innovativeness. Managers of firms with high EO tend to more frequently engage in entrepreneurially uncertain activities (Wales, 2016). Nonetheless, EO cannot be expected to be universally beneficial as its effects might be contextually dependent, and different dimensions of EO might generate different effects on firm performance. In particular, innovativeness has been independently examined as a possible factor influencing growth.

Business models have emerged as an important new perspective in strategy (Aversa, Haefliger, Rossi, & Baden-Fuller, 2015; Baden-Fuller & Haefliger, 2013; Teece, 2010). However, the role of business models in new venture growth remains largely uncharted territory, with the exception of one study. High-growth firms in declining industries have been shown to have different value propositions (a central component of a business model) than incumbent firms (Chandler, Broberg, & Allison, 2014). High-growth firms are able to grow in spite of adverse conditions by creating one of the three unique value propositions: meeting the needs of an underserved market segment, identifying a new market segment by focusing on product/service characteristics that appeal to that segment, or providing a total customer solution.

Alliances are one way in which new ventures can access strategic resources (Gulati, 1998). They are specifically attractive to entrepreneurs who do not want to cede control over their ventures. Complementary resources from partners can compensate for the lack of internal resources and enable market access, and endorsements from well-known established firms can signal quality and help overcome legitimacy barriers faced by new ventures. Alliances can predict growth and seem to be the vehicle through which venture capital investment can promote growth (Mohr, Garnsey, & Theyel, 2013). They can mitigate the negative effects of bootstrapping on new venture growth as bootstrapping has been found to have an inverted-U relationship with new venture performance (Patel, Fiet, & Sohl, 2011). Collaborating with big firms might also impact new ventures negatively as external partnerships can influence the link between internal capabilities and growth. Having too many partnerships can limit growth as partners' resources, rather than complement, can act as substitutes for internal resources and capabilities (Vandaie & Zaheer, 2014). Power relations between partners can also be asymmetric. New ventures thus need to be selective and cautious when entering strategic alliances.

The question of mode of growth – whether it is internal (i.e., organic) or external (i.e., acquisitive) – is a strategic issue (McKelvie & Wiklund, 2010). Acquisitive growth enables firms to grow more quickly and can – under certain conditions – even spur subsequent organic growth (Lockett & Wild, 2013). Acquisitive growth can also enable firms to embark on new development paths that might not be available organically from these firms' current resource base and POS. This is a consequence of path dependency as a firm's future market opportunities depend on current opportunities, and acquisitions might be a way of breaking that limit to growth. This proposition seemed to be confirmed by a study on a 10-year panel of Swedish firms, which found that previous organic growth acts as a limit on current growth (Lockett, Wiklund, Davidsson, & Girma, 2011). Previous acquisitive growth, however, has a positive influence on current organic growth.

Moreover, exportation and internationalization are another frequently used mode of growth. This topic is generally well covered within the international business literature and does not merit further discussion here (for a recent review of the internationalization process literature, see Welch & Paavilainen-Mäntymäki, 2014).

External factors

The characteristics of the organizational environment substantially influence the amount and modes of firm growth. Dess and Beard (1984) proposed three dimensions of the organizational environment: munificence, complexity, and dynamism. The munificence concept states that organizations seek environments that enable them to grow and generate slack resources that allow them to survive periods of scarcity (Cyert & March, 1963). Dynamism represents both environmental turbulence and the stability-instability axis. Highly dynamic environments are characterized by unpredictable change and heightened uncertainty. Environmental complexity refers to the heterogeneity and range of activities that organizations need to perform (Child, 1972).

Some studies have conducted thorough investigations of strategic decision speed and firm performance under different combinations of organizational and environmental characteristics (Baum & Wally, 2003). They examined entrepreneurs' growth intentions as they change through time under different competitive conditions (Dutta & Thornhill, 2008). Other studies have also scrutinized the moderating influence of environmental dynamism on the relationship between leadership behavior and venture performance (Ensley, Pearce, & Hmieleski, 2006), entry modes when internationalizing (Rasheed, 2005), and opportunity exploitation under conditions of risk and uncertainty (Hmieleski & Baron, 2008). Clarysse, Bruneel, and Wright (2011) examined how firms develop and structure their portfolios of resources in different kinds of environments.

Barriers to growth

Barriers to growth are factors that constrain growth in new ventures. Although barriers can be viewed as mirror images of drivers of growth, some factors are more frequently discussed as constraints and limiters of growth (Davidsson et al., 2010). Several studies found that financial constraints (e.g., lack of access to credit) are the most common impediments to growth (Pissarides, 1999). Institutional barriers like taxation and regulation are also often considered as important impediments. Andersson (2003) found that rules and taxation make it difficult to attract foreign talent to Sweden. Budak and Rajh (2014) examined how the business sector is dealing with corruption in seven Western Balkans countries. They found that some entrepreneurs understand corruption as "greasing the wheels" and that a key component in fighting corruption was to raise anti-corruption awareness. Interestingly, some studies reported (Xheneti & Bartlett, 2012) that firms

with a greater awareness of corruption grew faster. Aidis (2005) implemented a study on 332 Lithuanian SMEs and found interrelations between formal and informal barriers.

A considerable amount of barriers to growth research is geographically focused on Eastern European transitional countries. Barriers to growth have been researched in the context of Lithuania (Aidis, 2005), Albania (Hashi, 2001; Xheneti & Bartlett, 2012), Kosovo (Hoxha & Capelleras, 2010), Slovenia (Bartlett & Bukvič, 2001), Russia (Doern, 2009), Bulgaria (Pissarides, Singer, & Svejnar, 2003), developing countries (Coad & Tamvada, 2012; Das & Das, 2014; Robson & Obeng, 2008), as well as specific contexts in developed countries (e.g., Lee & Cowling, 2013). However, the barriers to growth literature is fragmented and theoretically under-developed (Doern, 2009). Extant studies are based on quantitative surveys with theoretically weakly founded questionnaires. A shift from prediction towards understanding is thus needed to advance knowledge on barriers to growth.

Other considerations

Some growth-related studies cannot be easily classified into the abovementioned categories. This section briefly reviews these studies. Formal human resource management practices have been linked to higher performance in SMEs (Sheehan, 2014). High-performance work systems (HPWS) are usually referred to as a set of practices designed to improve employees' skills and effort. These practices include recruitment and selection, monetary performance incentives, performance appraisal processes, and employee training processes. HPWS have been found to improve growth prospects in young firms that also exhibit high entrepreneurial orientation (EO) (Messersmith & Wales, 2013). Opportunity spin-offs (initiated by the former employees of incumbents to exploit an opportunity) have been found to grow faster than incumbent-backed and necessity spin-offs (Bruneel, Van de Velde, & Clarysse, 2013). In a comparative case study, Hansen and Hamilton (2011) isolated factors that distinguish growing from non-growing firms.

Some studies suggest that there is a significant random component to the growth process. The proposition that firm growth is best approximated by a random walk and that its survival depends on the stock of resources at startup or that accumulated thereafter is part of Gambler's ruin theory (Coad, Frankish, Roberts, & Storey, 2013). Firms are here compared to gamblers whose wins are based on chance, but they must stop playing when they run out of money. Coad and colleagues tested this theory on a sample of 6,247 new ventures and found its explanations superior to resource-based predictions. They also found that each growth path in the observed four-year period occurs with roughly equal probability and that growth has a positive effect on subsequent survival. Growth rates are nearly random, but survival is not. Therefore, according to this study, even though firm growth is not a pure random walk, chance is the most dominant component.

This account was disputed by Derbyshire and Garnsey (2014) who wrote that Coad and colleagues' result was an artefact of measurement and that comparing entrepreneurship to indeterminate processes such as gambling was incorrect and counterproductive. The concept of deterministic chaos in complexity science provides an explanation for the failure to identify factors that are closely linked to firm performance. Therefore, while it might seem like the growth process is largely indeterministic (i.e., it has no cause and is random), there is an underlying process that involves iterative matching of a firm's resources to external opportunities. Firm growth is thus not a random process, but entrepreneurial skill and a firm's resources affect its growth. Viewing firms as complex adaptive systems would explain the failure of decades of entrepreneurship research on firm growth and would offer new lens for further research (Derbyshire & Garnsey, 2015).

Growth process

While the previous research streams reviewed in this chapter are primarily concerned with the "amount" of growth, studies in this section adopt a processual view of growth. The main focus of this literature is on how firms grow, the problems caused by growth, and how to solve them.

New venture growth process research is dominated by *stage models of growth* that first appeared in the early 1970s and dominated the growth discussion throughout the 1980s and early 1990s (e.g., Churchill & Lewis, 1983; Greiner, 1972; Hanks et al., 1993; Kazanjian, 1988). The stages-of-growth models assume that there are a certain number of stages in the development of a company and that all firms move through these stages. The development of a biological organism is used as a metaphor for growing organizations, so these models are sometimes also called organizational life-cycle models.

For example, in Greiner's model (1972), the organization develops in a successive series of interchanging evolutions (periods of steady growth and stability) and revolutions (periods of substantial organizational turmoil and change). Revolutionary periods are characterized by crisis and practices that no longer work for a larger organization. Management thus needs to establish a new set of management practices and organizational structures that will become the basis for the next period of evolutionary growth. Greiner's model features five stages of evolutionary growth (creativity, direction, delegation, coordination, and collaboration) punctuated by revolutionary leadership crises, autonomy, control, and red tape. If organizations wish to move to the next stage, they need to undergo some kind of revolutionary transformation and solve the crisis at hand.

One reason for the popularity of stage models among practitioners is their high face validity. The majority of entrepreneurs can identify the stage their company is in at a certain point in time (Eggers,

Leahy, & Churchill, 1994). The problems discussed in the stages literature are real-world organizational challenges that are relevant to founders and managers of growing firms.

Few contemporary studies still utilize the stages-of-growth paradigm. It has been criticized as overly deterministic (Phelps, Adams, & Bessant, 2007). New ventures are supposed to linearly advance through different stages, and there is supposed to be an optimal configuration for each stage, which is an obviously unrealistic assumption considering the significant differences between individual firms. Levie and Lichtenstein (2010) assessed 104 stages-of-growth models published between 1962 and 2006 and reached worrying conclusions. There is no agreement in the literature of what exactly is a stage, and every definition was used only by a handful of authors without wide-reaching consensus. The number of stages in these models varies a great deal, and three to six stages are usually proposed. There is no consensus on the number of stages and the relationships between stages. The theoretical foundations and conceptual origins of the models are weak. Furthermore, all stage models assumed that organizations have a growth imperative, which is contrary to empirical findings that many organizations have no desire or capabilities to grow. The proliferation of models continued even though half of them were presented as “universal,” supposedly covering all kinds of firms. The assessment concluded that stage models do not accurately represent the growth and development of new ventures and should “no longer be used by scholars of entrepreneurship, for they act as a barrier to advancement of research on the growth of entrepreneurial organizations” (Levie & Lichtenstein, 2010, p. 336).

This judgement is pretty harsh; how therefore do we get out of this conundrum? Levie and Lichtenstein (2010) proposed a *dynamic states model* that builds on stage models but modifies two unrealistic assumptions: that businesses develop like organisms through a specific number of stages and that these stages represent a fixed program of development. The authors define a dynamic state as “a network of beliefs, relationships, systems, and structures that convert opportunity tension into tangible value for an organization’s customers/clients.” Opportunity tension, in this context, means the tension between the perceived untapped market potential and the commitment to act on that potential. Dynamic states thus represent the best perceived match between a firm’s business model and the market potential. In an organization’s existence, there can be any number of dynamic states in any sequence. Levie and Lichtenstein (2010) laid the foundations for the dynamic states approach in a very abstract and general way. Further work should thus focus on elaborating on these and specifying the details in particular contexts.

Phelps, Adams, and Bessant (2007) proposed an alternative model by discarding stages and introducing six tipping points that characterize qualitative changes in developing organizations: (1)

people management (developing the skills to encourage delegation, communication, and teamwork); (2) strategic orientation (moving away from an opportunistic to a more deliberate strategy); (3) formalized systems (when existing informal systems fail to adequately cope with changed environmental conditions); (4) new market entry (replicating existing business models in new markets or developing new products for existing customers requires stronger customer awareness and is constrained by the lack of marketing and sales skills); (5) obtaining finance (growing firms need to move to external capital providers); and (6) operational improvement (moving towards a better understanding of process capabilities and the implementation of best practices for efficiency gains). These tipping points are the consequence of growth and need to be overcome by developing and applying new knowledge to resolve the challenges posed. Absorptive capacity (Cohen & Levinthal, 1990) is a critical capability in this regard.

Studies examining the growth process outside of the stage models paradigm are few and far between. Prashantham and Dhanaraj (2010) used a process lens within the grounded theory approach to study a three-year evolution of social capital in four internationalizing Indian software firms. They found that initial social capital rapidly diminishes and that when that happens, a broad variety of searches for new network relationships becomes necessary for growth. Raisch (2008) examined the organizational design challenges of growing firms and inductively developed a process model of balanced structural designs that enable firms to pursue profitable growth while simultaneously balancing exploration and exploitation activities in different situations. Rindova, Yeow, Martins, and Faraj (2012) examined how Google and Yahoo utilized their partnering portfolios in their distinct approaches to growth. Clarysse et al. (2011) analyzed the growth paths of young technology firms and showed that different growth paths result from firms' attempts to structure resource portfolios in accordance with environmental demands.

Measurement of growth

Different indicators can be used to measure growth: sales growth, employment growth, asset growth, profit growth, among others. The two most utilized indicators in the extant research are sales (or turnover) growth and growth in the number of employees. Low concurrent validity has been found among different growth indicators (Shepherd & Wiklund, 2009; Weinzimmer, Nystrom, & Freeman, 1998). For instance, sales and employment growth are only modestly correlated. It is thus questionable whether the universal theory of growth can be achieved. It would need to explain several measures of growth that are not necessarily correlated (Shepherd & Wiklund, 2009).

Most studies do not explain why a particular indicator was used. Indicator choice needs to be substantiated by the theoretical focus of the investigation. Greater attention to the context

specificity of both measures and theories is warranted. Entrepreneurs, for example, are interested in developing their business, not necessarily employing more people, so measures of most use to them would be sales or profit growth. An additional measure of interest specifically in high-tech startups would be the value of the firm (Achtenhagen, Naldi, & Melin, 2010). However, generating higher employment is one of the major objectives of policymakers; therefore, research that aims to inform policy would tend to use employment growth measures.

A multiple-year time window is usually used for measuring growth. This reduces the amount of noise and one-off growth events. Another dilemma is to choose between absolute and relative growth indicators. Relative growth is most frequently measured as a percentage or log change. Absolute growth is a raw number change of selected indicators in the measured time period. Relative measures tend to be biased towards smaller firms (i.e., small firms seem to grow faster when relative measures are used) while absolute measures favor larger firms. This dilemma has led to the construction of compound indexes, such as the Birch Index, that include both relative and absolute measures of growth. These indicators have, however, been criticized as conceptually empty (Davidsson, Delmar, & Wiklund, 2006) since it is difficult to determine exactly what they measure. Furthermore, the Birch Index is driven by absolute growth in large firms, so it cannot resolve the issue of absolute or relative measure selection (Coad, Daunfeldt, Hözl, Johansson, & Nightingale, 2014). Developing absolute growth hypotheses based on the findings of studies using relative growth (and vice versa) is thus not recommended (Shepherd & Wiklund, 2009).

A further complication is that most measures of growth (and entrepreneurship in general) are not normally distributed but exhibit highly skewed power law distributions (Crawford, Aguinis, Lichtenstein, Davidsson, & McKelvey, 2015). For instance, most of the central constructs in resource-based explanations of performance – human, social, and financial capital – are found to be power law distributed. As a consequence, the workhorses of Gaussian statistics – means and standard deviations – are relatively meaningless in many cases and do not provide apt descriptions of the variables. Thus, the results of studies relying on unjustified normality assumptions often have little relevance for policymakers and practitioners. A greater focus should be on the outliers (e.g., fast-growing firms), which are usually thought of as exceptions to be squeezed by transformations into normal distributions in the traditional approach.

The measurement of organizational growth is a significant topic in itself, and space considerations do not allow us to do justice to it (readers may wish to consult several excellent reviews of growth measurement (cf. Delmar, 2006; Shepherd & Wiklund, 2009; Weinzimmer, Nystrom, & Freeman,

1998) as well as extensive treatments of measurement issues in Davidsson et al., 2010; Coad et al., 2014).

Summary of current findings

We have divided the new venture growth literature into three sections: research on high-growth firms (HGFs), antecedents of growth, and growth process.

The research on HGFs is guided by their important contribution to job creation. It examines the characteristics of fast growing firms and has so far established the following stylized facts: (1) young firms, not small ones, create the majority of jobs; (2) Gibrat's law (growth rate is independent of size) holds for large firms but not for small ones; (3) the majority of firms do not grow at all; (4) HGFs are often one-hit wonders as high growth is extremely difficult to sustain; (5) HGFs are often young but not necessarily small; (6) HGFs are not necessarily high-tech; (7) concrete policy advice remains thin.

Antecedents of growth represents the largest research stream among the three examined. It investigates the effects that various factors have on the rate of growth. This literature is dominated by resource-based explanations of growth that were first established by Penrose (1959) and thereafter elaborated within the RBV. The most researched factors are the founding team characteristics; human, social, and financial resources; strategy; and the external environment. A recent meta-analysis found that Penrosean versatile resources are more useful for growth than the RBV's VRIN resources (Nason & Wiklund, 2015). The outsized attention on the amount of growth suggests that other aspects of growth remain neglected (Davidsson et al., 2010).

The growth process research has been dominated by the stages-of-growth models. These models assume that firms move linearly through a specific number of stages that are punctuated by crises. Firms need to overcome crises at certain stages of development if they want to continue on the growth path. These models have high face validity among entrepreneurs but have received only scant empirical support. A recent review (Levie & Lichtenstein, 2010) concluded that these models are not appropriate for further research. However, lessons from the stages literature can be used in the dynamic states approach, which discards the unsupported assumptions of the stages literature. Studies that examine the growth process outside of the stages paradigm are very rare.

There are two major deficiencies of the extant literature. First, there is not enough accumulation of knowledge, which is partly a consequence of an insufficient number of replications are being conducted (Shepherd & Wiklund, 2009). The exception is research on HGFs, where issues are typically examined across multiple datasets in different studies. Although some direct effects of major factors on growth are well researched, more nuanced findings are typically one-off. This is not

characteristic only of the growth field; it is a problem that plagues much of management research. The academic incentives and publication preferences of the top outlets are structured so that they seek novel findings and theoretical contributions. Replication and confirmations of past findings are thus being neglected. However, a single study, regardless of how well executed, cannot provide final and conclusive resolutions to any issue (Davidsson, 2015).

Second, the explained variance of growth studies is typically low. Firm growth is a complex phenomenon, and it is perhaps a bit naïve to expect that a small number of factors at founding or later stages can significantly impact growth paths. Although firm growth is not a completely random process, it has a significant stochastic component.

The following section outline a future research program aimed at alleviating these shortcomings.

New venture growth: Future challenges

At the start of the discussion on future research relating to firm growth, we examined the research suggestions of previous major reviews in the firm growth literature. The findings of this meta-review of reviews published between 2006 and 2015 are summarized in Table 1.

Insert Table 1 about here

Several previous reviews found that the research on growth is fragmented and that findings are often conflicting. Our effort largely confirms that this is still the case. A comprehensive universal theory of growth might not be possible, or at least, we are very far from it. Our better bet would be to produce a variety of context-dependent mid-range theories that work for certain types of firms.

Here, we outline a strategy for the further development of new venture growth research. We suggest three strategies to improve the field: (1) reorient the focus of research from “change in amount” to the process of firm growth; (2) use less questionnaire-based quantitative studies and more qualitative, in-depth studies as well as studies that leverage big data; and (3) pay more attention to the usefulness of growth research for other stakeholders: entrepreneurs and policymakers.

Several authors suggested that the mode of growth should be the focus of future studies (e.g., McKelvie & Wiklund, 2010). They argued that growth research has focused predominantly on “how much” questions while neglecting “how” questions. Future focus should thus be on examining how firms grow – whether organically or by acquisition. However, with the exception of a few examples (Clarysse et al., 2011; Lockett et al., 2011; Naldi & Davidsson, 2014), these studies are yet to materialize. The reason might be the scarcity of secondary data, including modes of growth, and the

difficulty of gathering new data on this topic. Of necessity therefore are longitudinal research designs that require significant time and resource investments. It is easy to observe the dearth of longitudinal designs in the literature review; however, it is considerably more difficult, time-consuming, and expensive to rigorously implement them in real-world research.

A major part of firm growth research is dominated by the RBV perspective. We suggest that future firm growth researchers should aim to bring more diversity in their research questions so that the foundations of other theoretical perspectives, such as behavioral theory (Cyert & March, 1963), that have proven their utility in prior management research can be utilized. An important aspect of behavioral theory underscores an orientation toward processes rather than outcomes of organizational growth. Cyert and March (1963), in their initial contribution, emphasized the actual process of making business decisions so that imperfectly rationalized organizational goals, which can be seen as consequences of different coalitions within firms, can be attained.

Human resource management (HRM) is another topic that has so far been neglected within the firm growth literature and should be given greater credence in the future. Most of the existing studies on the role of people in firm growth focus on the role of human capital (of the individual/entrepreneur) and the impact that this personal capability has on firm growth. While managing and motivating employees, finding new talent, and recruiting the right people are widely discussed themes among practitioners, entrepreneurs, and investors of high-potential firms, there is a lack of scholarly discourse on these questions in the particular context of high-growth firms. Some of these questions consider how HRM practices and different HR systems (e.g., high-performance work systems) at the firm level change during the process of growth. Further research is needed to investigate the specifics of these issues. When focusing on the outcomes of different modes of growth (McKelvie & Wiklund, 2010), researchers could explore how and why the productivity of human resource practices differ across organic, acquisition, and hybrid modes of growth.

Finally, by “over-focusing” on RBV arguments, the existing research on firm growth has neglected the role of customers as sources of growth (Zander & Zander, 2005). The role of customers was already noted in Penrose's (1959) concept of “inside track,” which allows firms to sense and capture value from existing customers. The underestimation of demand-side arguments is visible not only in the context of firm growth research but also in the broader management literature (Priem, Li, & Carr, 2012). There are future research opportunities associated with using demand-side theoretical foundations and exploring firm growth from the business model viewpoint. Indeed, the concept of business model (Baden-Fuller & Morgan, 2010) is an integrative perspective that combines both supply- and demand-side arguments. Firm growth research from the business model perspective

(Baden-Fuller & Mangematin, 2013) could explore the role of the institutional environment and opportunity co-creation (George & Bock, 2011) in the context of firm growth. By using institutional theory in entrepreneurship and sense-making (Daft & Weick, 1984), institutional pressures on the business models that shape firm growth could be analyzed. Business models may be an important component in the co-evolution of stories that determine legitimacy as a necessary component of firm survival (George & Bock, 2011; Lounsbury & Glynn, 2001).

Measurement and methods

Cross-sectional studies of the influence of various factors on firm growth explain only a limited amount of the variance in growth rates. These factors are assumed to be stable and context-free. It is questionable whether a comprehensive model of firm growth based on these factors can be developed (Dobbs & Hamilton, 2007). Factors that vary over time would have a better chance of explaining differences in growth rates. Moreover, cross-sectional studies are only able to identify the factors that accompany growth spurts, which are not necessarily those generating the growth.

As the saying goes, “not everything that counts can be counted.” We are not the first to suggest that the field needs more case studies (c.f. Davidsson et al., 2010; Leitch, Hill, & Neergaard, 2010; Wright & Stigliani, 2013) that delve deeper into growth phenomena than our limited capability – which measures what goes on inside firms – is able to explain. Qualitative methods are relatively little used in contemporary growth research. Arguably, this deficiency has two explanations: (1) a fair number of researchers believe that qualitative studies are difficult to publish; and (2) rigorous qualitative studies are difficult and time-consuming to conduct, especially in an environment in which most academics are under increasing pressure to publish quickly and extensively. This does not mean that there are no robust qualitative studies. Some recent excellent examples include Bamiatzi and Kirchmaier (2014), Hansen and Hamilton (2011), and Rindova et al. (2012). Lockett and Wild (2014) also noted that while Penrose (1959) used historical case studies for the development of *The Theory of the Growth of The Firm*, this method has been neglected in contemporary studies on RBV and firm growth. Penrose used a hybrid approach, including both inductive and deductive logic, a research process in which history played a major role.

As Wright and Stigliani (2013) argued, the field needs to embrace more innovative research methodologies. This could be implemented on either side of the qualitative-quantitative continuum. Ethnographic, narrative, and case study approaches have so far been neglected in growth research. Notwithstanding, one such opportunity is the availability of (big) data from the internet, which calls for the use of alternative methods of data collection such as web scraping. Recent advancements in computerized text analysis (e.g., Blei, 2012) that can be used to content-analyze large amounts of

text documents make this a potentially fruitful avenue for further research that is currently completely untapped.

If the critique of Crawford and colleagues (2015) concerning power law distribution effects is accurate, it would imply that a large part of existing research, which is based on average effects for average firms – to put it politely – is not very useful. There is a need for additional research into how power law distributions shape results in growth studies and what methods would be more appropriate for studying new venture growth. Some authors suggest that techniques like quantile regression might be more appropriate (Coad, 2009).

Future challenges – High-growth firms

Research on high-growth firms represents a dynamic and vibrant field that has produced a number of stylized facts about HGFs. There is a considerable push among policymakers to concentrate support for HGFs in the hope of increasing employment. More research is thus needed on the evaluation of policy approaches for supporting HGFs. What policy measures increase the frequency of HGFs? Are these effective at boosting employment? Having more HGFs also implies a higher number of declining and failing firms, with its attendant negative effects. Are these offset by the good effects? The danger is that by supporting HGFs, as defined on the basis of employee growth, policymakers will encourage labor-intensive enterprises that weaken economic productivity. One new phenomenon that warrants further investigation is the appearance of venture accelerators (Cohen, 2013). Do these really accelerate growth?

A fruitful avenue is further exploitation of matched employer-employee databases that can now be constructed for a number of advanced economies. Some advanced innovative approaches warrant attention. For instance, labor flow networks—networks where nodes represent firms and connections represent labor flows among firms (Guerrero & Axtell, 2013)—could be constructed for whole economies and utilized to examine the role of HGFs in employment.

Future challenges – Antecedents of growth

The research on “growth amount” almost completely dominates the entrepreneurial perspective of firm growth studies. Extant research has placed too much emphasis on the question of “how much” companies grow while neglecting questions on “how” they grow (Davidsson et al., 2010; Leitch et al., 2010; McKelvie & Wiklund, 2010). We believe the research on antecedents of growth has hit a wall similar to that of the stages-of-growth literature. As Davidsson et al. (2010) noted, there is little chance that additional factors that explain growth beyond what we now know will be found. Growth rates have been shown to be nearly random (Coad et al., 2014), so it is perhaps futile to try to

improve explained variance (McKelvie & Wiklund, 2010). Therefore, the first issue would be for researchers to reorient their perspective to other more fruitful avenues like growth process.

For researchers who would like to continue their work within this orientation, rigorous longitudinal studies in specific industries might be of value. Large-scale context-specific and theoretically driven studies that would follow a cohort of firms in their growth and repeatedly gather data from this cohort would further contribute to knowledge on antecedents of growth. The effort, scale, and time required for such a project are probably beyond the realm of most entrepreneurship researchers.

Future challenges – Growth process

Stages-of-growth models do not currently constitute a very active stream of research and have been heavily criticized (Levie & Lichtenstein, 2010). We think, however, that it would be unwise to dismiss the stage models literature too soon. The criticism might have a point that organizational development is never linear through a fixed number of stages. Firms are too different in character and development path to be described by a single universal stage model. The problems addressed in this literature are nevertheless real and important. The decline in process studies is also unfortunate for entrepreneurs and managers as this research has a greater potential to inform practice than merely studying “the amount of growth” in relation to various antecedents that are not under the influence of the entrepreneur. Stage models are a metaphor that functions for a subset of firms. By transforming them along the lines of Levie and Lichtenstein’s dynamic states model, it generalizes them onto a larger population of firms. Further theoretical work is needed to elaborate this perspective.

McKelvie and Wiklund (2010) suggested that future researchers examining the growth process by focusing on different modes of growth can build on the theoretical foundations of behavioral theory. This would allow researchers to explore how firms achieve growth-related goals through organic, acquisition, and hybrid modes of growth. A selected mode of growth defines the variety of coalitions that are present in the firm, which in turn influence routines and processes in the firm (Argote & Greve, 2007), such as decision-making processes. Decision-making processes in the context of firm growth can be analyzed on several levels. On the individual level of analysis, the cognitive biases and heuristics (Busenitz & Barney, 1997) of entrepreneurs/managers in the context of firm growth can be analyzed. The mezzo level of inquiry could explore the functionality of decision-making processes within top management teams (Amason, 1996) while at the firm level of analysis, researchers could analyze how a firm's slack resources associated with growth goals facilitate a search for new ends and means through innovation (Geiger & Cashen, 2002).

Contemporary digital enterprises (e.g., Google, Twitter, WhatsApp) are able to scale much faster than the previous generation of companies. Does this mean that the “Penrose effects” do not hold for such firms? These companies go through periods of hyper-growth; it would therefore be interesting to investigate the consequences of such growth and how such incredibly high growth rates are sustained. This line of inquiry (studying the management challenges and effects of growth) would be fruitful not just for digital but for all kinds of new ventures.

Conclusion

This chapter presented a summary of the contemporary growth literature and its most influential foundations and theoretical perspectives. It also outlined several opportunities for future research. The new venture growth landscape is fragmented but extremely important for scholars, entrepreneurs, and policymakers. This chapter is our small contribution to moving the field forward.

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Table 1

Findings and suggestions for further research from previous reviews

Review	Focus	Selected main findings	Suggestions for further research
Gilbert et al., 2006	New venture growth	The two resources most often found connected with new venture growth are human capital and financial capital.	Examine the impact of specific forms of entrepreneur competences on growth. Conduct more in-depth explorations of the role of teams and leadership. There are several opportunities to research the relationship between resources and different types of growth (internal, external). Explore how financial capital enables or constrains decision-making, which in turn influences growth.
Macpherson & Holt, 2007	Knowledge and learning in small firm growth	Most studies favor high-tech and manufacturing industries. A significant subsection of research examines new ventures rather than old firms. The growth process is significantly more complex than the stage models portray.	Use of epistemological approaches that are sensitive to relational qualities; for instance, activity theory or practice theory might provide useful frameworks for research. Researchers should use methodologies that are able to get close to practice (e.g., ethnography, processual research). More sophisticated heuristics targeting policy initiatives are needed. These should address the idiosyncratic and contextual nature of growth as opposed to blanket and best practice approaches.
Dobbs & Hamilton, 2007	Small business growth	The growth literature uses a wide range of measures and models, i.e., knowledge development is fragmented rather than cumulative. New theoretical perspectives are needed to understand the growth process.	Focus on growth as a process and incorporate more longitudinal theories and research designs. Use the learning perspective to study growth paths and tipping points in the growth of small businesses in the same industry and region.
Coad, 2009	High-growth firms	Gibrat's law is a useful model of firm growth even though it is not perfectly accurate in all contexts and for all firms. The nature of growth is remarkably random. Financial performance and productivity are poor predictors of growth. No single theoretical perspective can explain firm growth. The standard regression approach, which focuses on "the average effect for the average firm," is not an appropriate method for analyzing the	Use cohort studies to explore the relationship between financial performance and growth, which feature the significant gap between theoretical predictions and empirical results. Use techniques that go beyond "average firm" characteristics (e.g., quantile regression). More research is needed on the relationship between innovation and growth. Empirical work should first provide "stylized facts," which should then be explained using theory.

		growth phenomenon because few firms grow rapidly and the “average firm” will barely grow at all.	
Davidsson et al., 2010	Small business growth	Small firm growth is a complex phenomenon that addresses both the “change in amount” of growth and the growth process. The literature is fragmented and develops along separate lines of inquiry. There is lack of integration of existing findings into a comprehensive theory of growth. The knowledge on growth modes and growth processes is underdeveloped. There is a dearth of high quality in-depth studies. There is little need for new studies seeking to identify antecedents of growth.	Conduct theory-driven studies within more homogenous samples of firms. Rigorous, theoretically sampled case-based growth process studies are needed. More effort should be put in researching the management challenges of growth.
McKelvie & Wiklund, 2010	Growth mode	Researchers prematurely began addressing “how much” questions before adequately answering “how” questions.	The research focus should be changed to growth modes (organic, acquisition, or hybrid). Researchers should strive to explain which growth modes firms choose and why. The relationships among different growth modes should be examined. Penrose’s theory should be extended to include hybrid modes of growth. Real-time longitudinal case studies could be used to focus on how growing firms utilize and combine different growth mechanisms.
Levie & Lichtenstein, 2010	Stage models of growth	Stage models are overly deterministic. There is no agreement on what stages are and how they are related. The biological metaphor of the firm as a developing organism is inappropriate. Stage models are not appropriate for explaining business growth.	Stage models should no longer be used for further research. They should be replaced with dynamic states models, which have their foundations in complexity theory. These models offer theoretical support for research on business sustainability.
Wright & Stigliani, 2013	Entrepreneurial growth	The growth literature is overly focused on “how much” studies and neglects “how” and “why” questions.	More research is needed into how entrepreneurs’ cognitive processes influence growth, how entrepreneurs obtain and configure resources needed for growth, how important are contextual factors for these questions, and whether they influence types and patterns of growth.

Moreno & Coad, 2015	High-growth firms	High-growth episodes in firms are rare and most often not repeated. High-growth firms generate most of the new jobs in developed economies; they tend to be young and present in all industries.	Explore the differences among regions and countries – how contextual factors influence the prevalence of HGFs. Look into the different firm strategies and growth. Explore the internal characteristics of high-growth firms. Investigate the role of different strategies in high growth.
Wright, Roper, Hart, & Carter, 2015	The <i>IJSB</i> special issue containing evidence-based reviews of growth policy focused on five areas: job creation, innovation and exporting, ethnic and gender diversity, finance, and management & leadership	The majority of jobs in the UK are created by small firms. Internal enablers (skills, research and development (R&D), capital investment, and liquidity) have a major influence in shaping SME innovation and exports. Targeted supply-side and demand-side policies are effective in promoting SME innovation and export. SME growth depends on substantive growth capabilities, which are shaped by leadership and capability development issues.	More research is needed on the processes that drive job creation in different types of firms in order to develop appropriate policy interventions. How do entrepreneur objectives (growth/lifestyle) and the importance of retaining control affect venture capital or equity funding decisions? There is a need to better understand how psychological factors influence the selection and implementation of growth goals. Little is known about how dynamic capabilities evolve in emerging ventures and how entrepreneurial cognition and growth intentions shape the development of dynamic capabilities in supporting sustained growth.