

Beyond linearity and resource-based perspectives of SME growth

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Keywords:

SMEs, Development, Growth, Integrated, Determinants, Resource-based view

ABSTRACT

Recent debates have seen increased interest in the growth of SMEs. Most research however follows a limited remit, focusing on specific subsets and employing narrow, resource-based perspectives. A consequence is our knowledge is limited on how SME growth occurs more broadly and the critical determinants in this process. This paper addresses this gap, examining SME growth as a multidimensional process rather than an output. The paper operationalises a Four Dimensions Conceptual Model through a Systematic Literature Review of 36 studies on the growth process. It identifies a broader set of determinants supporting a multidimensional approach, the pluralistic nature of SME growth embedded in distinctive contexts. Evidence suggests a greater reliance on firm-based Characteristics and Environmental factors in supporting growth, providing critical inputs into forming and reinforcing networks through which firm-based resources are activated. We emphasise the need to test these propositions through more SME research using qualitative and longitudinal methods.

Introduction

The role of small and medium-sized enterprises (SMEs) is prominent in academic debate. Rooted in seminal works on firm growth (Penrose, 1959), entrepreneurship (Schumpeter, 1911), employment (Birch, 1979), and regional development (see Storey, 1984), a growing literature has called for greater understandings of SME growth and its key determinants (Davidsson & Wiklund, 2013; Wiklund, Patzelt, & Shepherd, 2009). A paucity of empirical and theoretical research exists explaining these critical components (Wiklund et al., 2009), with limitations of current literature shaped by framing the SME growth debate around questions of how much over how or why (McKelvie & Wiklund, 2010). Through this debate, the SME sector and policies supporting it prioritise high growth sub-samples such as ‘gazelles’ (Birch & Medoff, 1994) or the ‘vital 6 Per cent’ (NESTA, 2009).

This tendency has compounded limited understand-

ings of SMEs. *In The Theory of the Growth of the Firm*, Edith Penrose explicitly outlined plural connotations of the term ‘growth’; the objective increase in specific metrics is interchangeable with a broader understanding of an “improvement in quality as a result of a process of development” (Penrose, 1959, p.1). Desire amongst researchers, policy-makers, and businesses to uncover a ‘silver bullet’ to the cumulative growth question has subverted progression of more granular understandings about the relationship between determinants of growth and their contribution to SME improvement (Bennett, 2008; Dobbs & Hamilton, 2007).

This paper contributes to calls for a broader understanding of SME growth in both academic and policy circles, with specific focus on this question of process over outputs. Previous works have progressed such understandings (Coad, 2007; Dobbs & Hamilton, 2007; Gilbert, McDougall, & Audretsch, 2006; Macpherson & Holt, 2007; Shepherd & Wiklund, 2009), yet tend to focus on singular aspects (i.e., knowledge and learning, new venture development). This study extends such understandings through an integrated approach considering multiple determinants

and contexts (Baum, Locke, & Smith, 2001; Weinzimmer, 2000). To achieve this, it uses a Four Dimensions Conceptual Model, classifying determinants of growth as either *Characteristics, Assets, Strategy or Environment*. It addresses three key research questions; which determinants and dimensions are key in the growth process, how do these determinants and dimensions interact and interrelate, and how do these key determinants manifest in relation to firm environment?

The paper progresses through the following sections. First, it analyses key debates on the process of SME growth using classic and more contemporary literature. Here it explicitly positions the concept of growth and offers a conceptual model capable of affording simplicity in analysing literature on the growth process. Second, it discusses the method and the Systematic Literature Review (SLR) technique applied in testing the conceptual model. Third, it reviews key findings from the SLR and applies these to the conceptual model. Fourth, it considers the utility of our approach, outlines key findings and defines research, policy and practice implications.

Defining the Process of SME Growth: An Integrated Approach

SME growth research has developed several critical insights over the years. Certain limitations however persist, with three particularly pertinent. First is a tendency toward output-based approaches and the pursuit of formulae capable of predicting, and therefore designing in, growth (McKelvie & Wiklund, 2010). Second, debate is typically framed within broader political-economic desires to underwrite growth through empirical, quantitative, and cost-based language familiar to policy-makers and investors, thus shaping growth objectives and their measurement (Bennett, 2008; Dobbs & Hamilton, 2007). Third, contextual dimensions of time and space are often ignored, metrics remaining constant whilst business practice evolves (Chen, 2005; Oinas, Tripl, & Hoyssa, 2018).

Such limitations in existing research have seen approaches to SME development founded upon partial understandings and narrow objectives. To address this issue, further analysis enhancing our understanding of the growth process is necessary to uncover how evolving socio-spatial relations inherent in SME development interact to deliver growth (Achtenhagen, Naldi, & Melin, 2010; Hudson, 2001; Leitch, Hill, & Neergaard, 2010). A shortage of empirical studies examining the SME growth process exist, yet significant theoretical work has debated how SME growth occurs and its relationship with specific determinants. This section outlines some of these key debates, positioning how

growth is interpreted in our analysis alongside its critical foundations, before moving on to form a model for progressing empirical analysis.

The Growth Process

Growth, and therefore the growth process, has been conceptualised in many ways. One common interpretation has articulated growth as a linear and cumulative phenomenon inevitable in the business process, primary objectives of business development bound to increases in a firm's size (Grenier, 1972). Growth occurs through crisis points as organisational practice is challenged by business trajectory, albeit moderated by industrial sector. Such cumulative models presume ongoing growth within a firm, principally in employee numbers or turnover. Whilst escalation of operational processes and internal capabilities possess face validity, positioning these within a singular linear model fails to recognise the contested trajectory of firm development.

Alternatively, a firm's growth trajectory is seen as cyclical. Such cycles however represent multiple overlapping long- and short-wave tendencies focused on maximising profit and product advantages (Markusen, 1985; Vernon, 1966) and disrupting key practices and technologies (Kondratiev, 1925). Within either set, a retraction in firm activity is integral in refining product, process or practice (Kuznets, 1955; Schumpeter, 1911; Shleifer, 1986).

Such cycles are not uniform (Coad, Frankish, Roberts, & Storey, 2012). Firms function as open systems (Harney & Dundon, 2006), variation in environmental conditions influencing internal capability and related outputs. Growth is therefore stochastic and unpredictable (Storey, 2011); in response growth becomes an autodidactic phenomenon involving constant horizon scanning and evolutionary processes (Nelson & Winter, 1982).

The phenomenon of growth, and the growth process can therefore be conceptualised as concurrently structured and stochastic. For the purposes of this paper, an integrated interpretation is taken. We posit the growth process as transitional, played out through a set of structured but separate long- and short-term cycles. As a result, the development process is highly periodised, involving development and adoption of distinct tactics utilising multiple inputs from within and outside the firm to identify and respond to changeable conditions. This periodisation makes it crucial to understand these multiple inputs contributing toward growth.

Determinants of growth: beyond the resource-based view

Exploration of critical determinants in the SME growth

process often applies reductionist tendencies, research progressed on examining association between a narrow set of theoretically-determined factors as opposed to focusing on more holistic understandings (Daft & Weick, 2001; Grant, Gilmore, Carson, Laney, & Pickett, 2001). SME growth depends on the availability and exploitation of multiple determinants (Baum et al., 2001; Weinzimmer et al., 2000). These determinants can be identified at multiple levels within, across, and outside the SME, high levels of variance occurring in their individual and collective influence on growth (Storey, 1994). SMEs are thus proposed as heterogeneous entities, the contextual dynamics of operating environment integral (Gilman, Raby, & Pyman, 2015; Marom, Lussier, & Sonfield, 2019).

Heterogeneity of the firm is a fundamental of the resource-based view (RBV), individual competitive advantage rooted in the unique resource configurations accessible to a firm (Barney, 1991; Wernerfelt, 1984). RBV has become a foundation in SME analysis, focused on firm-based acquisition, activation, and management of resources capable of offering sustained competitive advantage (Barney, Ketchen Jr, & Wright, 2011). The definition of resource however remains ambiguous. Framed through core characteristics of value, rarity, inimitability, and appropriation, resources are conveniently reduced to those within a firm's ownership or control (Barney, 1991; 2001a; Teece, Pisano, & Shuen, 1999; Wernerfelt, 1984). The influence of RBV's on SME development debates has thus been fundamental in narrowing explanations and understandings of the growth process.

RBV remains cognisant of diverse forms in which resources manifest; tangible and intangible, socially complex, causally ambiguous and path dependent (Barney, 2001b). It similarly acknowledges resources can be accessed and appropriated by a firm yet situated and controlled outside the entity itself (Priem & Butler, 2001) as externalities of industrial agglomeration or state investment (Bettencourt, Lobo, Helbing, Kuhnert, & West, 2007; Capello, 1999; Piore & Sabel, 1984). Key characteristics of value and rarity are externally determined, dependent on market conditions (Barney, 2001a) and production factors (Phelps & Alden, 1999; Potter & Moore, 2000). Neither possession nor access alone yield competitive advantage; also necessary are appropriate processes of application (Ray, Barney, & Muhanna, 2004), identification (Barney et al., 2011; Nelson & Winter, 1982) and evolution (Maritan & Peteraf, 2011; Markman, Gianiodis, & Buchholtz, 2009) making explicit the link between internal and external components (Coff & Kryscynski, 2011).

To this extent, determining resources as tangible or intangible assets within the ownership or control of the firm through RBV offers partial understandings of the complex

mix of determinants involved in the SME growth process. Such internal resources and capabilities are crucial, particularly in SMEs where their limitation remains a recognised growth barrier (Baum, Calabrese, & Silverman, 2000; McAuley, 2010; OECD, 2009). The internal however depend on interaction with a further portfolio of resources temporally acquired, partially integrated, or wholly separate, yet critical to building or maintaining competitive advantage. It is therefore necessary for RBV analysis of the SME growth process to interpret resources not within the firm but within the context of the firm, incorporating a number of sub- and supra-firm level resources through dynamic capabilities of sensing and understanding change in the external environment (Teece et al., 1999).

In developing this interpretation, a model can be derived presenting resources in four distinct forms. Building on work by Storey (1994), we categorise resources through four key dimensions of *Characteristics, Assets, Strategy, and Environment*, with consideration of advances in research refining these definitions.

Characteristics can be identified within but not always attributed to the SME as an independent entity. A set of structural characteristics, including age, size, industry and ownership, determine the firms' capacity for, ability in, and commitment to growth (Covin & Slevin, 1991; Cowling, Liu, Ledger, & Zhang, 2015). Structural characteristics also determine SME behaviour (Dobbs & Hamilton, 2007), compensating internal limitations in resource and experience through tendencies toward innovation, risk-taking and experimentation (Hannan, 1998; Shane & Venkataraman, 2000). Collectively these determinants represent the structural and behavioural Characteristics which shape firm performance (Cowling et al., 2015; Dobbs & Hamilton, 2007).

Alongside these characteristics, a set of internal assets shape the growth process. Acquisition and embedding of organisational resources, such as finance, intellectual property and human capital (Hayton, 2005), and those capability-based (Barney & Hesterly, 2015; Pett, Francis, & Wolff, 2019) combine to create a distinctive suite of Assets for utilisation by SMEs (Boxall & Steenveld, 1999). These internal resources and capabilities are dynamic, evolving through transformation in inter-firm experience levels (Andren, Magnusson, & Sjolander, 2003; Chebo & Kute, 2019; Love & Roper, 2015; Schenkel, Farmer, & Maslyn, 2019) and extra-firm inputs (Clarysse & Moray, 2004; Lepak & Snell, 1999) to achieve competitive advantage.

Asset utilisation depends on developing and implementing a clear firm Strategy (Dobbs & Hamilton, 2007; Koryak et al., 2015; Moreno & Casillas, 2008; Williams Jr, Manley, Aaron, & Francis, 2018). Strategy may be more emergent and crafted than planned in SMEs (Harney &

Dundon, 2006), responses emerging through developing strategic behaviours rather than strategic planning (Covin & Slevin, 1991) and embedded in tendencies toward value-adding activities (Hilmersson, 2013; Oviatt & McDougall, 2005). Strategy is found in multiple forms at firm and sub-firm level, representing planned and behavioural responses to evolving environmental conditions (Bamiatzi & Kirchmaier, 2012; Chebo & Kute, 2019), contributing toward improvement in resources and capabilities to meet environmental challenges.

Evolving environments represent a further set of determinants. Firm development is not isolated from macro-economic trajectories, structural transformation, or geographical resources (Davidsson, Achtenhagen, & Naldi, 2007; Hilmersson, Sandberg, & Pourmand Hilmersson, 2015; Moreno & Casillas, 2008). Regional, national and global economic trajectories impact SME growth, changing resource environments critical in providing human and social capital, knowledge and communications infrastructures, and cultural-economic institutions (Capello, 1999; Cooke & Morgan, 1998; Hall & Soskice, 2001; Hawawini, Subramanian, & Verdin, 2002; Love & Roper, 2015; Smallbone, Deakins, Battisti, & Kitching, 2012). Similarly, tendencies for growth and demand display regional and industrial variation, linked to product cycles, trade practices, infrastructure investment, and regulation (Sapienza, Autio, George, & Zahra, 2006).

Tendencies to frame the key determinants of growth through RBV has led to a proliferation of theories focused specifically on firm-based resources. Yet, the resources firms rely on to grow occur similarly outside of the SME. This mix of internal and external determinants can be attenuated into four distinct dimensions: structural and behavioural Characteristics, composed of determinants attributed singularly to the firm; Assets, composed of tangible and intangible determinants within the ownership or control of the firm; Strategy, composed of management plans and aptitude development, and Environment, representing extra-firm determinants of macro-economic, industry, and infrastructural context. These dimensions are here operationalized in a Four Dimensions Conceptual Model (FDCM) to analyse the SME growth process (Figure 1).

Positioning Growth as a Concept

In the previous two sections this study has outlined the theoretical foundations of how SMEs grow and, when considered as a body of knowledge, how empirical studies produce a multidimensional conceptual model. It has argued the growth process to be dynamic and transitional involving periodised elements and enacted via multiple determinants within and external to the SME. This phenomenon is articulated as four dimensions of Characteristics, Assets, Strat-

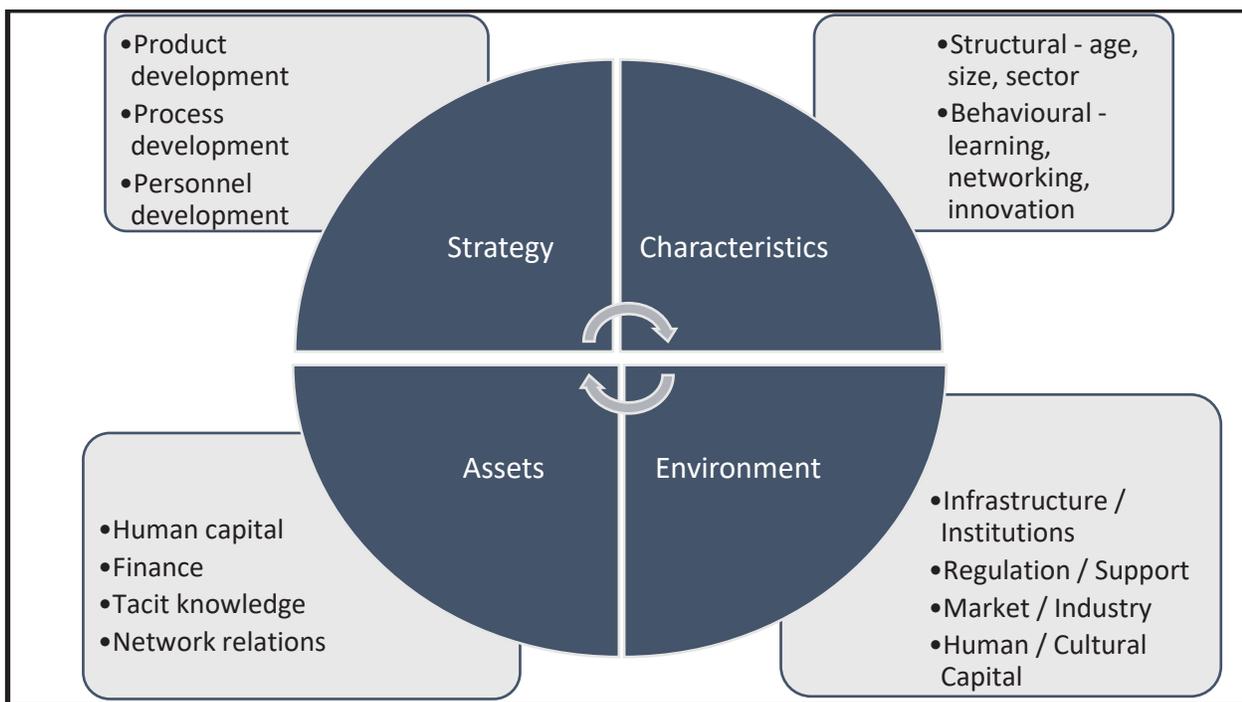


Figure 1. The Four Dimensions Conceptual Model
Source: Adapted from various authors

egy, and Environment. In this section, the positioning and application of the FDCM to examine the process of SME growth is discussed.

Research on growth has tended to capture it as an outcome metric (McKelvie & Wiklund, 2010), thus detaching research from the reality of SME practice, where growth is punctuated via a periodised rather than linear process. This paper considers growth from an alternative perspective; the context of the developmental process. This perspective allows for two critical distinctions from other studies. First, it shifts focus from the conceptualisation of growth as an increase in metrics to the less commonly examined process of development (Penrose, 1959). Second, it views growth as part of, rather than separate from, a firm’s long-term sustainability. Some strands of the growth literature separate these two objectives considering strategies for growth and sustainability fundamentally different (Sapienza et al., 2006). Adaptation to ensure sustainability is a critical aspect in firm development and growth, and therefore as worthy of study as growth metrics and outputs.

In this section we have outlined a broad set of determinants of growth attenuated into four key dimensions; the FDCM. The relationship between these determinants and dimensions and the growth process is the central consideration of this work. The growth process is not a singular phenomenon but depends on the integration of multiple determinants (Baum et al., 2001; Weinzimmer et al., 2000). The critical question examined in this paper is therefore how these key dimensions and determinants interact in the SME growth process, whilst taking account of variation between firms and the contextual understanding of the growth process adopted. This gives rise to a second question exploring the relationship between determinants / dimensions and the specific environment in which the firm functions. Due to the spatial and temporal spread of the papers used in the SLR a geographical perspective is adopted, interpreting environment as institutional context through groupings of national economy.

This study therefore addresses the following research questions:

Q1: Which determinants and dimensions are key in the growth process?

Q2: How do these key determinants and dimensions interact and interrelate?

Q3: How do these key determinants manifest in relation to firm environment?

Method

To build stronger understanding of the growth process, the study employs a Systematic Literature Review (SLR) technique. The SLR is appropriate here for its clear process of identification, evaluation and analysis, and ability to explicitly link this process to a research question (Macpherson & Holt, 2007; Zahedi, Shahin, & Babar, 2016). Undertaking this method involved two elements; setting the study selection parameters, and implementing the analysis framework and interpreting the data.

Search Process and Study Selection

The literature search involved a six-step process identifying and refining published work (Table 1). The search was conducted using the Web of Science (WoS) database, used for its advanced search refinement options, extensive Social Sciences catalogue, and citation-linked coverage (Aghaei Chadegani et al., 2013; Fingerman, 2006; Jasco, 2005).

Step one focused on a string of keywords: ‘SME’, ‘Growth’ and ‘Process’ combined with a limitation placed on publication date. Search terms were selected for their relationship to the objective of the study. Articles prior to the millennium were excluded due to changes from the mid-1990’s to the nature of support infrastructure (Bennett, 2008; Fritsch & Storey, 2014) and the changing nature of the SME development environment considering processes of globalisation and industrial dis-integration (Chen, 2005;

Table1
Steps in the article search process

Step	Protocol	Criteria	Returns
1	Keyword search	SME; Growth; Process and publication date (post-2000)	221
2	Apply discipline	Social Sciences	156
3	Apply sub-disciplines	Business Economics; Geography; Social Science Other Topics	148
4	Publication review	Peer-review only	88
5	Geographical context	US/Canada; UK; Europe; Australia/New Zealand	44
6	Type of study	Empirical only; bivariate/multivariate analysis	36

Oinas et al., 2018). The initial search returned 221 articles.

Step two limited the search to Social Sciences, omitting Science-based disciplines. This returned 156 articles. Step three refined to sub-disciplines of Business Economics, Geography, and Social Science: Other Topics, ensuring relevant returns with the latter capturing related sub-disciplines not specified (e.g., regional science). This returned 148 articles.

To ensure quality articles, step four limited the search to peer-reviewed journals. This stage returned 88 articles. Step five added comparable institutional environments through geographic specifics of US/Canada, UK, Europe, and Australia/New Zealand. These criteria allowed for some continuity in institutional context, focusing on more developed countries with both more established SME support infrastructure and lower entry regulations (Klapper, Laeven, & Rajan, 2006). This returned 44 articles.

The sample works were then examined in more detail, reviewing abstract and type of study. This review was conducted on empirical studies only and on those using multivariate analysis in consideration of our objective of examining multidimensional factors in the growth process. Following application of this criteria, a final set of 36 papers were identified (Appendix A).

The mix of studies selected in this research is worth brief discussion. Following the outlined process, our study selection included both qualitative and quantitative studies. A tendency in much SME research is to focus overtly on quantitative methods, risking narrow and circular understandings more concerned with aggregated objectivity over detailed knowledge (Daft & Weick, 2001; Fleetwood & Hesketh, 2008; Newby, Watson, & Woodliff, 2003) and method validity over appropriateness (McDonald, Gan, Fraser, Oke, & Anderson, 2015). By fusing quantitative studies with qualitative and case study research, this research follows a more unorthodox approach in effort to move beyond such aggregated objectivity.

Implementing the Analysis Framework and Interpreting the Data

Analysis of the 36 selected studies progressed using a predominantly manual system of review, coding and analysis. This took a syncretic approach – to “unify or reconcile diverse, opposing concerns or approaches” (Macpherson & Holt, 2007, p.176) - applying the FDCM (Figure-1) to understand the relationships and interactions between key determinants in the SME growth process. A layered analysis method was applied. First, univariate analysis identified key determinants, their frequency and distribution. Second, bivariate analysis examined binary associations between

determinants. Third, multivariate analysis explored the integrated nature of key determinants.

Studies were reviewed in detail and key findings for each study recorded manually. These were coded to create a set of distinct determinants and explicitly link these to the FDCM; a full list of identified determinants is included in Appendix B. Following this, a set of cross-tabulations tested frequency of association between determinants and dimensions. Finally, qualitative data analysis software (NVivo v.10) supported a cluster analysis, identifying the extent of key determinant associations and level of integration between determinants and dimensions. Through this process and in interpreting the data it was considered crucial to maintain the link between the four dimensions and the varying determinants in the SME growth process.

Findings

Key Determinants in the Growth Process

Analysis of the key determinants identified through the SLR showed a broad variety were critical across the studies. In total, 50 individual determinants were identified a combined 208 times. Multiple determinants were identified in each article as crucial to the growth process, ranging between three at lowest and ten at highest in any individual article.

Recurring determinants of regulation/subsidy and access to networks/clusters were most frequent, with 9 of 36 studies identifying these as central to the growth process. Regulation in particular was critical in creating a nurturing environment for entrepreneurship (Cowling, 2016; Mendez-Picazo, Galindo-Martin, & Ribeiro-Soriano, 2012; Parrilli, 2009), providing support to stimulate continual improvement (Cowling, 2016; Nowacki & Staniewski, 2012; Parrilli, Aranguren, & Larrea, 2010), and presenting challenges requiring adaptation and innovation to aid new market entry (Fuchs & Kostner, 2016; Prater & Ghosh, 2005). Access to Networks enhanced learning and development capabilities and knowledge exchange (Davenport, 2005; Kalantaridis, 2009) via engagement with peers, representatives, and learning or research institutions (Feakins, 2004; Gordon, Hamilton, & Jack, 2012; Radas & Bozic, 2009; Tunisini & Bocconcelli, 2009).

Determinants of Regulation and Networks were followed by firm’s commitment to learning, embedded networks, and internal capabilities, found in eight papers. Commitment to learning exposed SMEs to broader potential in product and network development (Gordon et al., 2012; Madrid-Guijarro, Garcia-Perez-de-Lema, & Van Auken, 2016; Triguero, Corcoles, & Cuerva, 2014; Wolff, Pett, &

Ring, 2015), embedded networks - perpetually renewing external relationships - served as a catalyst to new capabilities and resources (Bager, Jensen, Nielsen, & Larsen, 2015; Davenport, 2005; Feakins, 2004; Gordon et al., 2012; Madrid-Guijarro et al., 2016; Noke & Hughes, 2010; Radas & Bozic, 2009; Uhlaner, van Stel, Duplat, & Zhou, 2013;), and internal capabilities represented the ability to exploit external determinants (Noke & Hughes, 2010; Parrilli et al., 2010) and implement innovation strategies (Cowling, 2016; Harms et al., 2010; Neirotti, Paolucci, & Raguseo, 2013; Nowacki & Staniewski, 2012).

In comparison, certain determinants considered to exert a more orthodox influence on firm capacity for growth recurred less frequently. These included owner’s age, international commitment, banking relationships, technology, finance, skills/personnel, and employee involvement in firm strategy, each identified in only one of the studies.

When attributed to the four dimensions (Figure 1), greatest frequency was found in Characteristics, representing a third (33%) of the 208 citations, followed by Environment, representing 30%. Strategy constituted 23% of determinant citations, while only 14% were attributed to Assets. Positioning determinants and dimensions as singular and independent is however misleading, as in all studies reviewed, growth occurs as an integrated process involving multiple determinants.

Integrated Determinants in the Growth Process

While the SLR identified a broad set of determinants influencing the SME growth process, these determinants each represent an element of an integrated and multidimensional framework for growth. The extent of interaction between determinants in this framework is examined here using bivariate and multivariate association.

All papers reviewed indicate the growth process depends on multiple determinants. Their distribution across dimensions identified a similar consensus; only one paper cited determinants attributed to a single dimension. The remaining studies saw 11 identify determinants across two dimensions, 17 across three, and 7 all four dimensions. Bivariate association linked Characteristics to Strategy, Characteristics to Environment, and Strategy to Environment; less emphasis was placed on Assets (Table 2).

Bivariate association between determinants displays a variable picture, with no two determinants mutually associated in more than four separate studies. In a field of 50 determinants, a total 1,225 bivariate combinations exist. For 65% (796) of these combinations, no association was identified. Fewer than 9% (107) of possible combinations are identified in multiple studies; 81 combinations for bivariate

Table 2
Aligning dimensions by frequency of bivariate association

	Characteristic	Assets	Environment
Characteristics	-	-	-
Assets	15	-	-
Environment	21	14	-
Strategy	23	11	20

(N = 36)

association found in two separate studies, 22 found in three separate studies, and 4 in four separate studies.

Higher frequency of association was identified in four key binary relationships, emphasising the roles of networking, adaptation, and extra-firm inputs (Autio, Sapienza, & Almeida, 2000; Baker, Miner, & Eesley, 2003; Chebo & Kute, 2019; Love & Roper, 2015). This linked networking characteristics and regulatory environment, networks as resources and education infrastructure, networks as resources and network environment, and education infrastructure and network environment. Links between networking characteristics and regulatory environment suggests a symbiosis between networking tendencies and state policy (Macpherson, Jones, & Zhang, 2005; Nowacki & Staniewski, 2012; Parrilli, 2009), networks reinforcing firm capacity through adaptive requirements (Prater & Ghosh, 2005). Networks as Resource and Education Institutions stimulate reflexive learning experiences, formal and autodidactic (Davenport, 2005; Gordon et al., 2012; Radas & Bozic, 2009), shaped further by the Network Environment utilised in linking these determinants (Gordon et al., 2012; Parrilli, 2009; Radas & Bozic, 2009). Despite marginally higher frequency of network-based associations, caution should be exercised as these relationships were found in only a small number of studies.

Beyond bivariate association, consistent across the studies was association of multiple determinants. Multivariate associations could be examined through cluster analysis. Comparing determinants through association via mutual citation in studies suggests broad distribution. A key cluster however emerges associating certain more frequently cited determinants; Networking Tendencies, Regulation-Subsidy, firm-level Capabilities, and Innovation-R&D Strategy; and Business-Product Cycles, Network Clusters, Education-Research Infrastructure, and Networks. Critically, this emphasises determinants outside of the firm, particularly the role of environmental or place-based determinants (Capello, 1999; Love & Roper, 2015). To some extent bound into localised phenomena of agglomeration, policy inducement,

and social capital (Parrilli, 2009), capitalising on these is not singularly about proximity but instead how firms anticipate and respond to shifting markets through identifying and exploiting opportunities at multiple scales (Davenport, 2005; Prater & Ghosh, 2005; Radas & Bozic, 2009).

Context Specific Variation in the Growth Process: The Geographical Context

Analysis of the studies by geographic context saw higher frequency of determinant citation amongst firms based in Central Europe compared to other geographical areas (Table 3). Interesting variations also emerged here. For certain areas, some frequently recurring determinants were not observed; specifically regulation/subsidy, innovation commitment, learning commitment, and business/product cycle in Australia-New Zealand; innovation commitment and growth strategy in Eastern Europe; (access to) networks/clusters, (established) networks, capabilities, and innovation commitment in North America; and business/product cycle and innovation/R&D strategy in the UK. Alongside this, certain determinants are more strongly associated with specific areas. This saw a more positive association in Australia-New Zealand with innovation/R&D strategy, capabilities, sector and firm age; Central Europe with innovation commitment, culture, macroeconomic con-

ditions and business/product cycle; Eastern Europe with financial market conditions, education/research infrastructure, knowledge, and networking tendencies; North America with growth orientation, firm age and culture; and the UK with sector, geography, growth strategy and learning commitment.

Such variation highlights the influence of spatial proximity and institutional environment on firm responses to growth ambitions (Hall & Soskice, 2001; Smallbone et al., 2012). The absence of agglomeration or clustering potential for firms in certain spatial contexts stimulated active ‘search-and-adapt’ behaviours (Nelson & Winter, 1982), limiting intention for more localised integration. Here the issue of remoteness is important, occurring at both national (Davenport, 2005; Terziovski, 2010) and regional levels (MacPherson et al., 2005; Nowacki & Staniewski, 2012). This remoteness runs alongside marked differences in the role of collaborative infrastructure or public goods (Capello, 1999).

US and UK studies place greater emphasis on individual and firm-based characteristics and behaviours over collaborative action, compared to a Central European mode of practice with development focused as part of a system. This is reiterated when considering key dimensions. Geographical analysis indicated a greater importance for Char-

Table 3
Distribution of determinant citation by geographic area

	Aus-NZ	C. Europe	E. Europe	N. America	UK
Total Determinant Citations	17	100	29	26	31
Studies	3	16	5	5	6
Mean Citations (per study)	5.7	6.3	5.8	5.2	5.2

(N=36)

acteristics in Australia-New Zealand, North America and the UK; for Assets in Australia-New Zealand and Eastern Europe; for Environment in Eastern Europe; and for Strategy in North America. Against this distribution, for Central Europe the dependence was more balanced and integrated across dimensions (Table 4).

Discussion

Research on SMEs demonstrates growth to be dependent on a variety of determinants internal and external to the firm (Baum et al., 2001; Weinzimmer et al., 2000). The findings of this paper reinforce this view. Through application of a SLR, 50 determinants were found to influence

the growth process. A cross-study analysis reveals high variance in determinants, the most frequently recurring evidenced in only one-in-four articles. Such diversity should be placed in the context of the studies included in the analysis and their level of rigour, which cannot be guaranteed. Studies were selected on the basis of multi-variate analysis of the SME growth process. What is important here is that despite this approach, many studies retained a narrow agenda, examining determinants rather than the growth process holistically. It should thus be noted studies typically exclude several relevant determinants influencing growth.

This paper sought to address three research questions. First, what determinants and dimensions are important to the growth process? Uncovering the recurrence of multiple

Table 4
Distribution of dimension citations by geographic area

	Aus-NZ	C.Europe	E.Europe	N.America	UK	All Areas
Characteristics	35%	32%	21%	42%	35%	33%
Assets	24%	12%	24%	0%	16%	14%
Environment	24%	32%	41%	23%	26%	31%
Strategy	18%	24%	14%	35%	23%	23%

Source: various authors (N = 36)

determinants across the studies reiterates the growth process as a multidimensional construct. Such recurrence is neither uniform nor formulaic. Five specific determinants recur more frequently: Regulation/Subsidy; Clusters; Learning Commitment; Networks; and, Capabilities. Together, these determinants represent 20% of all citations. Moving from determinants to higher-level thematic dimensions, cumulative determinants cited across all studies suggest dimensions of Characteristics and Environment are most commonly involved in the growth process, and Assets within the firm itself less influential.

The second question sought to understand how key determinants and dimensions are interrelated as part of the growth process. High variation between studies revealed 65% of determinants had no identified association. Where dependencies occurred, these were broadly and unevenly distributed. Cluster analysis indicates while certain common determinants were closely associated across studies - specifically Regulation/Subsidy, Clusters, Networks and Capabilities - other common determinants were more fragmented.

The third question considered how key determinants manifest considering context variations, in this study defined as institutions created by geo-political environment. Diversity in approaches to growth were observed across the sample when exploring institutional contexts. Determinant analysis indicated higher dependence on those attributed to the characteristics dimension in English-speaking settings, with emphasis on growth orientation and structural determinants of firm Size, Age and Industry particularly in US-Canada and Australia-New Zealand. In contrast, European firms highlighted values of learning, innovation, and clarity of vision as of greater importance.

This paper has sought to consolidate additional evidence on and understanding of SME growth through a process lens to contrast the metric-based model principally favoured in research on SME growth (McKelvie & Wiklund, 2010). In so doing, this paper accommodates both the multiple determinants perspective (Baum et al., 2001; Weinzimmer, 2000) and the role of contextual dynamics (Gilman et

al., 2015; Marom et al., 2019). Several findings here extend debates on the SME growth process; in particular, the need to better understand how critical determinants integrate in the growth and development process of SMEs.

In this analysis the study uses the FDCM to retrospectively frame determinants influencing the growth process as either *Characteristics, Assets, Strategy or Environment*. The importance of these dimensions is not even. On citation basis, most critical are Characteristics and Environment, with Assets less important. Further analysis using bivariate association found key interfaces between Characteristics, Environment and Strategy, again placing Assets as less influential.

These finding raise an interesting question. The role of resource limitations in SME development has been widely discussed (Baum et al., 2000; McAuley, 2010; OECD, 2009). To compensate, firms evolve to function in more networked capacities enabling access to broader resources without associated cost through consolidation, appropriation and application of a collection of sub- and supra-firm level assets (Cooke & Morgan, 1998; Love & Roper, 2015). This type of firm behaviour represents an extension to archetypal RBV, reconfiguring resources outside of those simply confined to ownership/control of the firm (Priem & Butler, 2001). Firm performance may be determined by resources within the firm’s influence (Barney & Hesterly, 2015; Pett et al., 2019); this influence extends beyond those within its immediate ownership into broader public goods (Capello, 1999), enabling utilisation of a wider framework of inputs.

This expansion of inputs presents significant challenges for resource-based approaches to understanding SME growth, reiterating calls for conceptualisation accommodating process over metric-based formulae. The first of these challenges relates to the FDCM. These four dimensions have become key cornerstones for understanding what influences SME growth. The process of determinant classification and separation may however be counterproductive, these four dimensions better interpreted as elements of a broader resource framework SMEs need to understand and utilise to achieve growth. Second, this reconfiguration of

the FDCM suggests that focusing on identifying specific critical determinants of the growth process and their acquisition or exploitation may be misguided. Instead, the critical consideration is the integration of such resources and their combination in specific conditions and contexts. To this extent, linking separate resources through network involvement, and perhaps more importantly networking capabilities, is integral. Finally, the importance of networks not only makes an explicit focus on process over determinants but also leads to a transition in how the functioning of firms is conceptualised from a resource-based to a network-based view. In an era of increasing start-up activity, accelerating technological interaction, barrier reductions, and ongoing vertical dis-integration of production activities, networks have become prominent. Network creation, utilisation and exploitation links critical resources to create distinctive responses to specific market challenges – an epitome of the unique configurations on which competitive advantage is founded (Barney, 1991; Wernerfelt, 1984). Network-based approaches have become increasingly popular in fields such as regional studies and economic development, focused on innovation or knowledge-based networks as critical components in building entrepreneurial and resilient regional economies (see Huggins & Thompson, 2013). Applying such an approach to the entity of the SME may provide new insight into questions of growth and the critical set of interactions and dependencies which underwrite this process.

Conclusion

This paper discusses the issue of the growth process in SMEs. A broad literature exists considering firm growth, yet with limited focus on the process of SME growth. Using a conceptual model informed by classic and contemporary debates, recent empirical work has been examined. The study employs a SLR through which relevant works on the process of SME growth are identified, examined and analysed.

A growing debate around SMEs posited their development as multidimensional, neither refined to a singular set of critical inputs nor homogenised due to broad contextual dynamics at play within firms (Baum et al., 2001; Gilman et al., 2015; Marom et al., 2019; Weinzimmer et al., 2000). This analysis supports such propositions, indicating a broad mix of determinants in the process of growth. In total, 50 were identified, classified within a FDCM as *Characteristics, Assets, Strategy or Environment*.

This analysis has critical implications for much research and interpretations of SME practice informed by RBV. Our results give weight to calls for a broader perspective on how resources are defined in the context of SME

growth, incorporating those outside the SME's ownership as integral. The analysis includes indications that development processes are highly dependent on determinants occurring at sub-firm or supra-firm levels. Integral here are certain Characteristics which shape how firms utilise internal and external resources (Dobbs & Hamilton, 2007; Hannan, 1998; Shane & Venkataraman, 2000). Although integral to adopted working practice, these Characteristics additionally depend on broader Environment determinants that shape resource availability such as labour and knowledge transfer (Capello, 1999; Cooke & Morgan, 1998). Findings suggest lower dependence amongst SMEs on embedded internal Assets; a finding consistent with behaviours showing the need for high levels of integration with resources outside the firm, and to establish working practices and strategies for their effective integration and exploitation. To this extent, integration of disparate resources becomes dependent on networks and networking capabilities, and thus SME growth less a question of resource-based and more of network-based approaches.

This paper contributes several potentially significant developments in how the growth process of SMEs is understood, with implications for policy and practice. Focus to date on singular models of understanding SME growth - 'gazelles' or the 'vital 6 Per cent' - presents a partial picture of the overall process. This study has sought to extend and expand this picture, in response to the call for research accommodating more holistic and multidimensional understandings (Davidsson & Wiklund, 2013; Wiklund et al., 2009). As such, it has implications for methods academics use in SME research, reiterating calls for more longitudinal and qualitative approaches but also the need for more tools and techniques capable of integrating SMEs themselves in the research process. Similarly, this suggests the need for revised policy models and support mechanisms, specifically around formation and reinforcement of communities of practice in both structured and autodidactic learning, knowledge transfer, and collaborative partnerships. Specifically, this requires moving beyond not only 'one-size-fits-all' but also 'one-factor-solves-all' approaches.

While presenting an argument for theorising growth as an integrated process alongside a set of proposals on how this may be conceptualised, methodological limitations should be recognised. Principal here is limitations in the studies reviewed. Although identified systematically, these works are deductive rather than inductive and syncretic. Considering the scope of the analysis undertaken by each, it would be reasonable to assume certain determinants may have been missed. In addition, the identification of determinants does not make any statement of their weighting and similarly works on presumption they have positive effects on SME

growth. Although the case in the sample studies, several determinants could equally exert negative influences. The limited sample of studies included in the analysis should also be acknowledged. This sample reinforces the core criticism of limited research focused on the growth process in SMEs, but equally has implications on the validity of results which require more rigorous testing in further empirical work. Each study can be considered multidimensional, yet the deductive nature limits this extent with the majority adopting quantitative and positivist approaches. This orthodoxy limits holistic and multiple determinant understandings of the growth process (Baum et al., 2001; Weinzimmer, 2000). Finally, there is need for more research that appreciates the role of context, be this geography, industry or internal structure. This research offers no input in terms of mediation or moderation between specific determinants at this point. Understanding the trajectory of the growth process and the direction of dependency between determinants would offer a fruitful avenue for future research.

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Appendix A
Overview of Selected Studies

Ref #	Author(s)	Year	Research Subject	Geographical Context	Research Method	Analysis Type
P1	Bager et al.	2015	SME, cross-sectional, growth-oriented	Denmark	Case Study / Controlled Analysis	Quantitative
P2	Belás, Vojtovič, and Ključnikov	2016	SME, cross-sectional	Czech	Survey	Quantitative
P3	Cowling	2016	SME, cross-sectional	UK	Survey	Quantitative
P4	Davenport	2005	SME, production	NZ	Case Study	Qualitative
P5	Deschryner	2014	All firms, incl. SMEs, cross-sectional, sales & R&D conditions	Finland	Panel Study, Longitudinal	Quantitative
P6	Eggers, Hansen, and Davis	2012	Micros, cross-sectional	US	Panel Study	Quantitative
P7	Feakins	2004	Banking sector (SMEs as clients)	Poland	Discourse analysis, case study	Qualitative
P8	Feindt, Jeffcoate, and Chappell	2002	Baby Gazelles Small e-commerce	EU countries	Content analysis	Qualitative
P9	Fuchs and Kostner	2016	SME, exporters	Austria	Survey	Quantitative
P10	Gordon et al.	2012	Small, cross-sectional	UK	Longitudinal	Qualitative
P11	Harms et al.	2010	SME, cross-sectional, growth oriented	Germany	Survey	Quantitative
P12	Kalantaridis	2009	SME, cross-sectional (rural)	UK	Survey	Quantitative
P13	Levy, Powell, and Yetton	2002	All firms, cross-sectional	UK	Case Study	Qualitative
P14	Macpherson et al.	2005	Small, manufacturing	UK	Case Study	Qualitative
P15	Madrid-Guijarro, García-Pérez-de-Lema, and Van Auken	2013	SME, manufacturing	Spain	Survey	Quantitative
P16	Madrid-Guijarro et al	2016	SME, manufacturing	Spain	Survey	Quantitative
P17	Mendez-Picasso et al.	2012	Entrepreneurship, innovation, and governance relationships	11 Developed Countries	Panel study	Quantitative
P18	Neirotti et al.	2013	SME, manufacturing, wholesale retail, business services, logistics	Italy	Survey	Quantitative
P19	Noke and Hughes	2010	SME, manufacturing	UK	Case study	Qualitative
P20	Nowacki and Staniewski	2012	SME, cross-sectional	Poland	Survey	Quantitative
P21	Parrilli et al.	2010	SME, manufacturing	France/Spain	Case Study	Mixed methods
P22	Parrilli	2009	SME, manufacturing	Italy	Case study	Mixed methods
P23	Prater and Ghosh	2005	SME, manufacturing	US	Survey	Quantitative
P24	Radas and Bozic	2009	SME, manufacturing, service	Croatia	Survey	Quantitative
P25	Rakićević, Omerbegović-Bijelović, and Lečić-Cvetković	2016	SME, cross-sectional	Serbia	Documentary analysis	Mixed methods
P26	Randelli and Lombardi	2014	SME, manufacturing	Italy	Case Study	Qualitative
P27	Romano, Tanewski, and Smyrnios	2001	SME, cross-sectional	Australia	Survey	Quantitative
P28	Schmieder, Marsch, and Forster-van Aerssen	2010	SME, cross-sectional	Germany	Panel Study	Quantitative
P29	Spence, Orser, and Riding	2011	SME, cross-sectional	Canada	Survey	Quantitative
P30	Terziovski	2010	SME, manufacturing	Australia	Survey	Quantitative
P31	Triguero et al.	2014	SME, manufacturing	Spain	Longitudinal	Quantitative
P32	Tunisini and Bocconcelli	2009	SME, manufacturing	Italy	Case Study, longitudinal	Qualitative
P33	Turner, Ledwith, and Kelly	2010	SME, cross-sectional	Europe	Survey	Qualitative
P34	Uhlaner et al.	2013	SME, cross-sectional	Netherlands	Survey, longitudinal	Quantitative
P35	Wolff and Pett	2006	SME, cross-sectional	US	Survey	Quantitative
P36	Wolff et al.	2015	SME, cross-sectional	US	Survey	Quantitative

(N=36)

Appendix B
Identified Determinants in SLR Process

Dimension	Determinant	
Characteristics	Growth Orientation	Firm Size
	Education	Learning Commitment
	Leader / Manager Experience	Risk Acceptance
	Firm Age	Entrepreneurial Orientation
	Owner Age	Customer Orientation
	Networking Tendencies	International Commitment
	Sector	Flexibility
	Innovation Commitment	Ownership / Structure
	Long Term Vision	
Assets	Networks	Technology
	Capabilities	Employees
	Bank Relations	Finance
	Knowledge	
Environment	Education / Research Infrastructure	Geography
	Business/ Product Cycle	Communications Infrastructure
	Macro-Economic Conditions	Networks/ Clusters
	Financial Market Conditions	Technology
	Regulation / Subsidy	Culture
	Hostility	Skills/Personnel
Strategies	Management Development	IT Strategy
	Employee Development	Marketing
	Financial Acquisition	Product Adaptation
	Innovation / R&D	Financial / Price Strategy
	Product Innovation	Communication/ Distribution
	Process Innovation	Export / Outsourcing
	Growth Strategy	Employee Involvement