Putting process on track: empirical research on start-ups' growth drivers

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Abstract

Purpose – The purpose of this paper is to review the literature on the growth drivers of start-up firms from the process perspective. Increasing scholarly attention to the growth of start-up firms has led to a more sophisticated understanding of their drivers. However, the richness of the results is partly offset by both potential and real contradictions in the literature.

Design/methodology/approach – In this paper, 233 studies on the growth of start-up firms are reviewed using a process-oriented lens.

Findings – The analysis reveals an imbalance in the use of variance-based empirical approaches to study the process-based phenomenon and some misalignments in the use of non-process-based empirical approaches to improve a process-based theory.

Originality/value – This paper offers an original perspective from which to reconsider the relevant literature and provides useful recommendations for researchers to forge a path ahead in this field.

Keywords Literature review, Start-ups, Firm growth, High-growth firms, Process view

Paper type Literature review

Introduction

Start-up firms are considered important engines of economic development and job creation worldwide (Henrekson and Johansson, 2010). However, a considerable amount of start-ups cannot achieve fast growth or even grow at all (Morris, 2011; Lazzeri and Piccaluga, 2012; Balboni and Bortoluzzi, 2015). Consequently, start-ups have received increasing attention from both scholars and policy makers to understand which factors trigger, support or hinder their growth.

In recent decades, empirical studies on this subject have proliferated, applying numerous theoretical perspectives and proposing various hypotheses to understand the role of specific drivers in stimulating the growth of the start-up firm. The drivers considered include bundles of resources and capabilities (Mason and Brown, 2013; Cooper *et al.*, 1994; Baum *et al.*, 2001; Lee *et al.*, 2001), the composition of the founding team (Colombo and Grilli, 2005; Wiklund and Shepherd, 2005), the strategy and business model adopted (Zimmerman and Zeitz, 2002; Zott *et al.*, 2011) and the characteristics of the local environment (Eisenhardt and Schoonhoven, 1990; Audretsch and Feldman, 1996).

Despite this abundance of perspectives and drivers, the accumulated evidence remains largely inconclusive (Nightingale and Coad, 2013; Coad *et al.*, 2014). Curiously, over time, an element has been progressively dropped from the debate on growth: the "process" itself. Although process-oriented research initially dominated studies addressing growth as a sequence of stages during the 1970s and 1980s (e.g. Greiner, 1972; Lewis and Churchill, 1983) and most current studies on growth still refer to this pioneering literature, process-based approaches are almost neglected in contemporary research. Instead, researchers generally use variance-based approaches to study this process-based and time-dependent phenomenon. Therefore, if used with certain cautions and recognising the limitations, variance-based approaches can be fruitfully applied to test existing process-based theories. More questionable is the use of variance-based approaches to advance existing theory.

In this context, this study systematically reviews the literature on the growth of start-up firms from a process-based perspective. Empirical studies are classified by their theoretical aim (to improve or not to improve the theory of firm growth) and by their use (or lack thereof) of process-based data. The results of the analysis reveal an imbalance in the use of variance-based empirical approaches to study this process-based phenomenon (black-box studies, in this paper) and some misalignments in the use of non-process-based empirical approaches to improve this process-based theory (misaligned studies, in this paper). Finally, the study highlights the lack of research on specific topics that present remarkable research opportunities for future studies.

Background and aim of the paper

Growth is a multifaceted process that takes place within a time continuum and is most frequently depicted as a sequence of discrete events. According to life-cycle theories, companies typically evolve from inception to maturity through a sequence of recurring configurations, with periods of evolution and development alternating with times of revolutions and crisis (Greiner, 1972; Lewis and Churchill, 1983; Scott and Bruce, 1987; Hanks, 1990; Hanks *et al.*, 1993). Growth is defined as expanding the company past internal boundaries (organic growth) or external boundaries (through mergers and acquisitions). It is commonly measured by increases in sales, assets or number of employees (Greiner, 1972). Alternative criteria, such as organisational form, number of hierarchical levels and scope of the business network, have received limited attention in the literature (Hanks, 1990; Hanks *et al.*, 1993).

Despite the process-based nature of growth, the use of process-based approaches to study it is rare, and scholars largely prefer using variance-based approaches. A similar trend characterises research on firms' internationalisation processes, as highlighted by Welch and Paavilainen-Mäntymäki (2014). Studies adopting variance-based approaches aim to understand how much of the variance of a certain phenomenon (in this case, the growth of the start-up firm) can be explained by variations in specific drivers of the process. Generally, variance-based approaches have a positivist background, the preferred methodologies are mostly quantitative, and regression models are among the most popular methods. The advantage of variance-based approaches is that they allow for proposing parsimonious predictive theories about the relationships among variables.

In contrast, process-based approaches are intended to provide a better understanding of how a process occurs over time and how specific events and variations influence it. These approaches rely on both positivist and non-positivist thought. In process-based approaches, qualitative methodologies are often preferred (e.g. narrative analysis,

ethnography, longitudinal case studies), but quantitative methodologies (e.g. panel data models, event history analysis) are also used. The main advantage of a process-based approach is that it supports complex, non-linear explanations about how and why sequences of events occur. The main difficulty arises when it is necessary to shift from describing events and recurring patterns to theorising about how and why they happen. Both variance- and process-based approaches are useful to increase understanding of temporal phenomena, although variance-based approaches are predominant in management research. However, some caution in the use of variance-based approaches is needed, especially when a study claims to advance the theoretical understanding of a process from variations occurring at a few points in time.

With the intent to order this body of literature and provide scholars with an original standpoint from which to observe the evolution of studies, this systematic literature review was conducted to achieve two aims: to reveal real and potential contradictions in the literature and to help researchers better address these research questions using coherent methodologies to advance knowledge of the growth drivers of start-up firms.

Data and methods

A systematic literature review must have certain specific characteristics, including a comprehensive search strategy for relevant studies, explicit and justified criteria for inclusion or exclusion and either a qualitative synthesis or a clear presentation and analysis of the results of eligible studies (Crossan and Apaydin, 2010). A multistep process was used to conduct such a review. First, the Web of Science was searched for all entries containing one of the following terms: start-up, new venture, new business, new firm or new organisation, combined with the terms growth, success, performance, survival or failure. This search generated 1,751 entries. Bibliographic data (title, authors, abstract and year of publication) were exported, and the sample was further reduced in a two-step process. The three authors of this paper examined all the abstracts and short-listed papers according to the following criteria: the paper studies new ventures or start-ups, not established firms, and is connected to growth (sometimes called performance), success or survival. This review took into consideration the evolution of managerial vocabulary. Firms today labelled "new ventures" or "start-ups" were called "small firms" or "new firms" in many of the pioneering studies on this subject. Differences among the three coders were reconciled by using a majority criterion. The first filtering process narrowed the sample to 493 articles, which were included in the first short-list. In the second step, all articles which dealt with closely related constructs (e.g. survival, performance, success) but did not focus on growth were excluded, further reducing the sample to 262 articles.

Then, the researchers developed a coding manual, including contextual and methodological considerations. The three coders independently read and coded a sub-sample of 20 articles. The results were then checked, and the differences were reconciled. These steps ensured that the three coders used the same criteria to code the articles. The remaining articles were then divided into three sets, one for each coder. The coders discussed questions about problematic articles in joint sessions, and reached final agreement on them.

The full texts of the 262 included articles were read and coded for the following categories: article type (empirical/conceptual/review), method type (qualitative/quantitative), data type (survey/interview/secondary database/archival data), quantitative method (regression/structural equation modelling), quantitative data (cross-sectional/longitudinal), sample size, growth measure, process data (yes/no),

process theory improvement (yes/no), prevailing theoretical perspective, location (geographical focus) and explanatory factors studied.

Given the aims of this study, only the empirical papers in the 261 articles carefully selected in the previous step were retained. Empirical papers constituted the majority (233, 89 per cent) of the initially selected papers. We excluded conceptual papers (17, 7 per cent), literature reviews (8, 3 per cent) and meta-reviews (3, 1 per cent) from the analysis.

Results

Table I presents various descriptive statistics for the 233 empirical articles considered in this review. Regarding the research method, quantitative methods dominate firm growth research (195, 83.7 per cent). Only 33 papers (14.2 per cent) use qualitative methods, and five papers (2.1 per cent) employ mixed methods.

Classification variable	Values	Papers	%
Research method	Quantitative	195	83.7
	Qualitative	33	14.2
	Mixed	5	2.1
Data source	Survey	86	36.9
	Secondary	83	35.6
	Interview	43	18.5
	Multiple source	21	9.0
Data type	Cross-sectional	128	54.9
	Panel	78	33.5
	Time series	27	11.6
Method of analysis	Regression (linear, Tobit, Probit, hierarchical, PLS, etc.)	128	54.9
	Multiple case study	28	12.0
	Descriptive statistics	18	7.7
	Multiple methods	17	7.3
	ANOVA, MANOVA	7	3.0
	Correlation (Pearson)	5	2.1
	Statistical inference test	5	2.1
	Structural equation modelling	4	1.7
	Clustering	4	1.7
	Single case study	4	1.7
	χ^2 test	4	1.7
	Discriminant analysis	3	1.3
	Principal component analysis	3	1.3
	Ethnography	1	0.4
	Network analysis	1	0.4
	Other methods	1	0.4
Data geography	Single country	206	88.4
	Multiple countries	27	11.6
Sample size (median)	Median of sample size in quantitative studies	275	–
	Median of sample size in qualitative studies	6	–
Prevailing theoretical perspective	Resources and capabilities	78	33.5
	Multiple perspectives	58	24.9
	Entrepreneurship and entrepreneurial team	42	18.0
	Ecosystem and context	28	12.0
	Marketing and strategy	27	11.6

Table I. Descriptive statistics of the sample of papers reviewed

Considering data sources, the sample contains roughly equal numbers of studies based on survey data collected through questionnaires (86, 36.9 per cent) and on secondary data (83, 35.6 per cent) using different sources. In total, 43 studies (18.5 per cent) are based on direct interviews with company representatives, while the remaining 21 studies (9.0 per cent) rely on multiple sources.

For data type, more than the 50 per cent of the papers analysed (128, 54.9 per cent) are cross-sectional studies, but panel studies (78, 33.5 per cent) are also quite popular.

Among the methods of analysis used, regression analysis (128, 54.9 per cent) is by far the most popular method. Other methods normally employed in cross-sectional studies (e.g. structural equation modelling, cluster analysis) are used less frequently in the papers analysed. In qualitative methods of analysis, 28 papers (12.0 per cent) use multiple case analysis, and a consistent number of papers (17, 7.3 per cent) use a combination of methods.

When considering sample size, qualitative and quantitative studies are differentiated. In the former, the median found of the sample size is six case studies, while in the latter, it is 275.

Nearly 90 per cent of the empirical papers analyse data collected from one country. Only 27 studies (11.6 per cent) are classified as multi-country.

Finally, each study is classified by the prevailing theoretical perspective in which it is grounded. When the perspective is specified in the paper, the classification is simply based on what the author(s) state. In other cases, the researchers assign the paper to one of four broad, prevailing theoretical perspectives: resources and capabilities, entrepreneurship and entrepreneurial team, marketing and strategy, and ecosystem and context, with the residual multiple perspective option. Resources and capabilities (78, 33.5 per cent) are the most popular perspective, followed by entrepreneurship and entrepreneurial team (42, 18.0 per cent). Marketing and strategy (27, 11.6 per cent) and ecosystems and context (28, 12.0 per cent) are roughly equally represented. Finally, a consistent number of studies (58, 24.9 per cent) rely on a balanced combination of theoretical perspectives, with no single perspective prevailing.

All papers are classified in a four-quadrant matrix inspired by a similar matrix used by Welch and Paavilainen-Mäntymäki (2014) in a study on the internationalisation process of firms. The present research introduces a distinction between studies which use or do not use process data and studies which are or are not aimed at improving theoretical understanding of the growth process of start-up firms. The studies are grouped into four quadrants (Figure 1) as follows:

- Quadrant 1: studies using process data but not generating a new process theory ($n = 61$, 26.2 per cent), labelled as untapped;

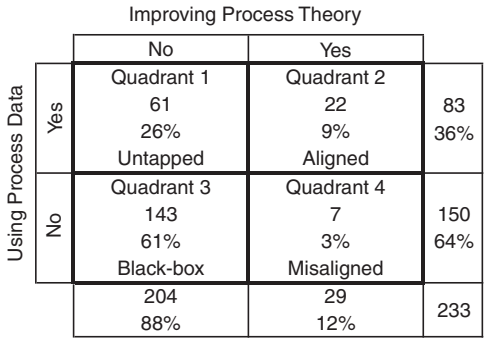

Figure 1.
Descriptive statistics of the studies reclassified in the four quadrants

- Quadrant 2: studies using process data and generating a new process theory ($n = 22$, 9.4 per cent), labelled as aligned;
- Quadrant 3: studies neither using process data nor improving a process theory ($n = 143$, 61.4 per cent), labelled as black box; and
- Quadrant 4: studies not using process data but improving a process theory ($n = 7$, 3 per cent), labelled as misaligned.

Figure 2 shows the chronological distribution of the papers published within each quadrant. The data show that, over the past years (2000-2014), there has been an upsurge in black-box articles (Quadrant 3), while the amount of aligned ones (Quadrant 2) has remained nearly constant. Figure 2 also indicates that interest in start-up firms' growth has increased remarkable over the past 15 years.

We found also increasing research involving new ventures based in developing countries, and especially in the BRICs Countries (Park and Bae, 2004; Wu *et al.*, 2008; Zou *et al.*, 2010; Zhao *et al.*, 2010; Zhou and Wu, 2014) and in the Sub-Saharan African region (Goedhuys and Sleuwaegen, 2010; Grimm *et al.*, 2012). Despite not diverging from studies based in more developed countries in terms of perspectives used (the resource-based and the entrepreneurial perspectives are largely prevailing), this bulk of studies has the merit to highlight the relevance that the environmental circumstances – such as the existence of proper market institutions – play as enabling factors to the growth of new ventures.

Quadrant 1: untapped

Quadrant 1 (untapped) includes studies that do not propose a significant theoretical development despite their reliance on process data. Possible explanations for this missed opportunity include scepticism about the quality and completeness of the available data – remarkably, 69 per cent of the papers in this quadrant rely on secondary data. A large majority (56) of the 61 articles in this quadrant use quantitative methods and panel data. The empirical methods used range from simple descriptive statistics to various types

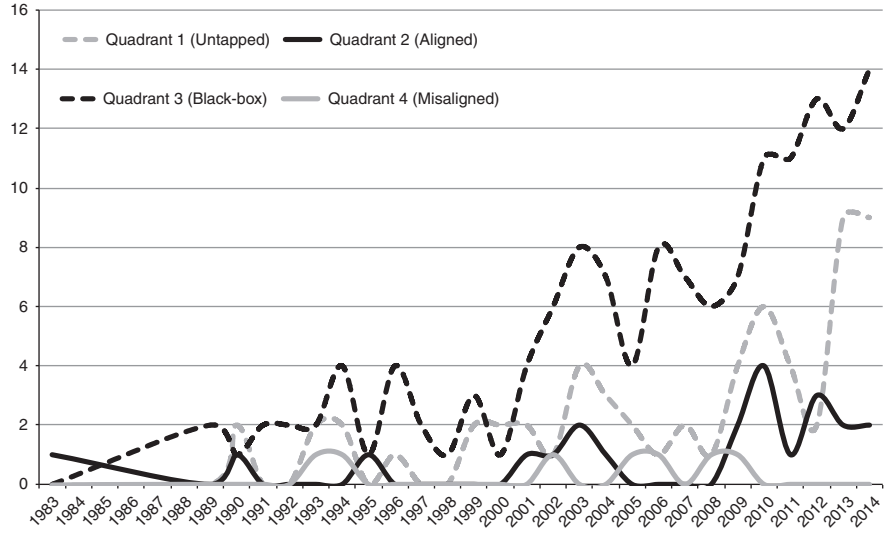

Figure 2.
Papers in each quadrant published annually

of statistical regression and structural equation modelling. Most of these studies are national in scope, with only 10 per cent involving more than one country.

The papers in this quadrant study different dimensions and perspectives of the growth of start-up firms. The findings are sometimes controversial and vary depending on how growth is measured (e.g. sales, number of employees). One of the most cited studies in this quadrant, Eisenhardt and Schoonhoven's (1990) work examines the effects of top-management teams, strategy and the environment on the organisational growth of technology-based ventures. The founding top-management team and market stage are shown to have significant effects on growth, but the influence of technical innovation and marketplace competition is insignificant. In contrast with the conclusions drawn by Eisenhardt and Schoonhoven (1990), Almus and Nerlinger (1999) find that technology matters and that new technology-based firms have more opportunities to grow than non-innovative companies (Feeser and Willard, 1990). Other resources matter as much in driving the growth of new ventures, including human and financial resources, as discussed by Cooper *et al.* (1994). As well, the results obtained by Stam and Wennberg (2009) question the need for high-technology firms to invest in research and development to obtain high growth. The ambitions and motivations of a firm's founders have significant influence on growth, according to the study by Delmar and Wiklund (2008), and the pace of growth is connected to the specific phase of a firm's life-cycle (Audretsch *et al.*, 1999; Lotti *et al.*, 2001).

Finally, Davidsson *et al.* (2009) discuss the relationship between a firm's growth and sound development. Indeed, according to the results of this study, initially slow-growing but profitable firms are more likely to reach the desired size and profitability over the long term, while new ventures characterised by high initial growth pace and low profitability have a higher risk of poor performance (Davidsson *et al.*, 2009). Additional studies in the first quadrant include Cassar (2007), Chandler *et al.* (2009), Khaire (2010), Bertoni *et al.* (2011), Keen and Etemad (2012) and Andersson and Klepper (2013).

Quadrant 2: aligned

Quadrant 2 (aligned) includes 22 studies that rely on process data and contribute to the development of a process-based theory of growth. More than half of the studies in this quadrant employ a qualitative approach (12 studies). Case studies are privileged, and one ethnographic study was also found. However, several studies also use quantitative approaches (nine), while one study relies on a combination of methods. The quantitative methods used range from simple descriptive statistics to ordinary least squares, time series regression and cluster analysis.

In many papers, scholars explicitly express their dissatisfaction with variance-based approaches and highlight the need for a deeper understanding of how growth happens during each stage of the process and in specific contexts. A significant amount of studies adopt a resource-based or entrepreneurial perspective. The latter are mainly interested in understanding which specific characteristics and behaviours of the entrepreneur(s) or the founding team underpin the growth of a new venture in each stage of growth.

One of the most cited studies in this quadrant, Lewis and Churchill's (1983) paper identifies the five growth stages and paths (existence, survival, success, take-off and resource-mature) of smaller firms. Similarly, Kazanjian and Drazin (1990) present a four-stage model of growth (conception and development, commercialisation, growth, stability) for technology-based new ventures. According to Kazanjian and Drazin (1990), fit must be achieved between the new venture's organisational structure and specific stage of growth to exploit its maximum growth potential.

In this quadrant, a consistent amount of studies examine the impact of social capital-related dimensions on the growth of new ventures. For example, according to Lechner and Dowling (2003), growth in the initial stages of the process is closely linked to the relational capabilities of the founder(s). Next, the dimensional growth of the firm goes hand-in-hand with the process of network building at the firm level, suggesting the existence of parallel growth processes in firms with a more relational nature. As well, Zhao and Aram (1995) find that both the intensity and the range of the firm's networking are significantly greater in fast-growing ventures than in slow-growing start-ups independent of the stage of growth.

Clarysse *et al.* (2011) attempt to answer to the question: are growth patterns "shaped" by the dynamics of the competitive environment? Their results reveal that different competitive environments lead firms to make different resource-allocation decisions, which are then reflected in various growth paths. Hagen and Zucchella (2014) analyse the differences between fast-growing start-ups and normal firms. The researchers find that, while the former achieve a continuous succession of growth cycles, the latter experience stages of growth interspersed with periods of maturity and stagnation.

The ethnographic study by Perlow *et al.* (2002) highlights a potential pathology affecting ventures that make (too) fast decisions. In this investigation of the behaviour of an internet-based start-up, Perlow *et al.* (2002) find that fast decision making is not necessarily driven by characteristics of the external environment, as contingency theory suggests. Sometimes, this behaviour is simply rooted in firms and is path-dependent (i.e. dependent on past decisions).

Finally, Coad *et al.* (2013) apply the Gambler's ruin theory to explain how a start-up's growth path influences the probability of its long-term survival. According to this study, the length of the sequence of win situations (the firm grows and is profitable) increases the probability of survival (Coad *et al.*, 2013). In other words, growth increases survival chances, and its beneficial effects can last for years.

Other studies in this quadrant include Shirokova (2009), Steffens *et al.* (2009), Anderson *et al.* (2010), Davila *et al.* (2010), Prashantham and Dhanaraj (2010) and Mueller *et al.* (2012).

Quadrant 3: black box

Quadrant 3 (black box) includes studies that neither use process data nor attempt to improve a process theory of growth. This is the largest quadrant, with 143 papers. Most rely on quantitative methodologies, with a clear preference for regression-based methods. Empirical results are often fragmented due to the use of multiple proxies to measure similar variables. These results are also controversial due to the use retrospective measures – measuring a past event in the present.

The work of Baum *et al.* (2001) is one of the most cited studies in this quadrant. Their research shows that specific internal factors – chief executive officers' competencies and motivations and firms' competitive strategies, among others – have considerable influence on the growth of new ventures. External factors, such as the characteristics of the environment, have only indirect effects on growth. In general, the majority of studies in this quadrant find that the attitudes, skills and motivations of entrepreneurs play key roles in determining the growth of new ventures (i.e. Colombo and Grilli, 2005).

Other studies in this quadrant attempt to determine whether the initial characteristics of the founding team predict the subsequent growth paths of the ventures they lead. The industry experience of team members is found to be an important driver of growth.

Diversity among team members (in education and previous employment positions) also contributes to establishing a winning growth strategy (Ensley *et al.*, 2002, 2006; Beckman, 2006). Entrepreneurial orientation is another prominent, long-lasting factor which has consistently been found to be associated with growth (Wiklund *et al.*, 2009). Adopting a resources and capabilities perspective, Florin *et al.* (2003) find that the social capital of a start-up (e.g. business network, personal network, initial public offering underwriters) significantly influences its chances of achieving high growth.

Firm location is often a neglected variable in managerial studies, receiving more attention in geographical studies. However, Audretsch and Dohse's (2007) show that the ecosystem and location in a knowledge-rich agglomeration (such as a specialised cluster) matters in determining the expected growth of new ventures. In any case, gazelles (new ventures which grow extremely rapidly) are more of an exception than the rule, as discussed by Aghion *et al.* (2007), who claim adequate public support to fully exploit the creative destruction potential of new firms.

Finally, Clarysse *et al.* (2011) find significant differences between corporate and university spin-offs, particularly in the role played by technological knowledge in their growth process. While the former tend to grow by moving from a narrowly focused technology area that is far from the technological core of the parent company, the latter do the opposite and benefit from the transfer of the existing technological base.

Quadrant 4: misaligned

Quadrant 4 (misaligned) contains empirical papers that attempt to improve the process theory of growth without relying on process-based data. This research type is the most controversial due to the manifest mismatch in the use of static data to contribute to the development of a process-based theory. These studies are not necessarily inconsistent from a methodological point of view, but additional caution is needed when interpreting and deriving theoretical implications from the results.

Among the studies in this quadrant, Kaplan *et al.* (2009) analyse the business plans of 50 start-ups and changes in their management boards to understand which is more significant in successfully bringing a start-up to an IPO: the strength of the initial business idea (the horse in the authors' metaphor) or the composition of the team (the jockey). The results show that the idea counts more than the team (Kaplan *et al.*, 2009). In a study mostly addressed to executives, Nicholls-Nixon (2005) analyses 13 high-growth firms that, during their process of rapid growth, managed to keep their books in order and maintain some profitability (which, in theory, is expected to be lacking in periods of high growth). Other studies in this quadrant include Gupta and Chin (1993), Olsen and Kolvereid (1994), Feindt *et al.* (2002), Chan *et al.* (2006) and Capelleras *et al.* (2008).

Discussion and conclusions

Some key points emerging from the analysis deserve further consideration. First, the data shows that studies contributing to a better theoretical understanding of the growth process of start-up firms constitute a large minority (12 per cent) of all studies on start-ups. However, a quarter of such studies do not rely on process-based data, signalling a potential misalignment between their aims and the methodology used.

Conducting process-based empirical studies is not straightforward because they require multiple observations spread across a long period of time. However, the academic community seems to recognise their value. As Figure 3 shows, aligned studies are, on average, cited more often than those in the other quadrants. Although a

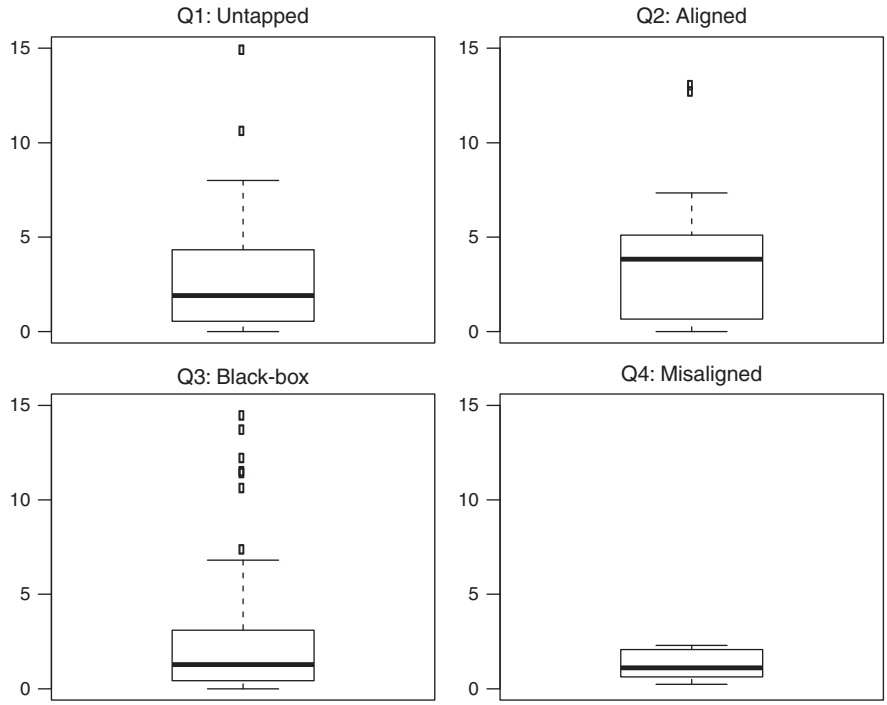

Figure 3.
Annual average number of citations (from publications) of studies

minority in absolute numbers, studies using process-based data (aligned and untapped) receive more citations annually on average than studies that do not use such data (black box and misaligned).

A second point of discussion is related to the growth trend of studies in recent decades. While studies on the growth of start-ups have significantly increased in number, aligned studies have not. Indeed, this growth trend is driven primarily by black-box studies, especially those employing variance-based methods to identify statistically significant casual relationships among variables. There is not a univocal and convincing explanation for this trend. Possibly, this type of study has gained in popularity among young researchers who tend to favour the use of advanced statistical techniques. However, it is always worth keeping in mind that even the use of the most sophisticated techniques cannot counterbalance the presence of methodological biases.

A third point is related to the studies labelled untapped. The present study fully confirms the conclusions drawn by Langley (1999) and Welch and Paavilainen-Mäntymäki (2014) that even studies based on process data do not necessarily contribute to new process theory. In this regards, the present results can provide researchers with some suggestions for future investigations. In particular, the first avenue for research is the opportunity to expand the concept of growth. In the 233 articles reviewed in this paper, the discussion on growth that has dominated the scene so far has been short-sighted. McKelvie and Wiklund (2010) claim that researchers have focused too much on firms' pace of growth ("how much?") instead of their modes of growth (the "how"). Similarly, Furlan and Grandinetti (2011) argue that firms do not grow only in size but also in network and capabilities. Indeed, firms can remain small in

size but grow by creating a network of business partners, such as subcontractors, agents, influencers, universities and research centres (network growth). Firms can also remain stable in size but significantly increase their competitiveness by acquiring and developing new skills, knowledge, technologies and talent (capabilities growth). According to Furlan and Grandinetti (2011), the most successful and durable growth strategies arise from a synergistic effect of the three types of growth: dimensional, network-based and capabilities-based growth.

Conceiving of growth as a multidimensional construct has several consequences at the methodological level. First and foremost, it encourages scholars to use more sophisticated measures to capture the essence of growth. Doing so could partly counterbalance the intrinsic limitations of black box studies.

Additional research opportunities emerge from reclassifying the papers in four quadrants by theoretical perspective (Figure 4). Indeed, a paucity of studies applying marketing and strategy lenses to address start-up firm growth can be observed. More process-based studies are needed to increase understanding of how changes in a firm's strategy or business model influence its growth process over time.

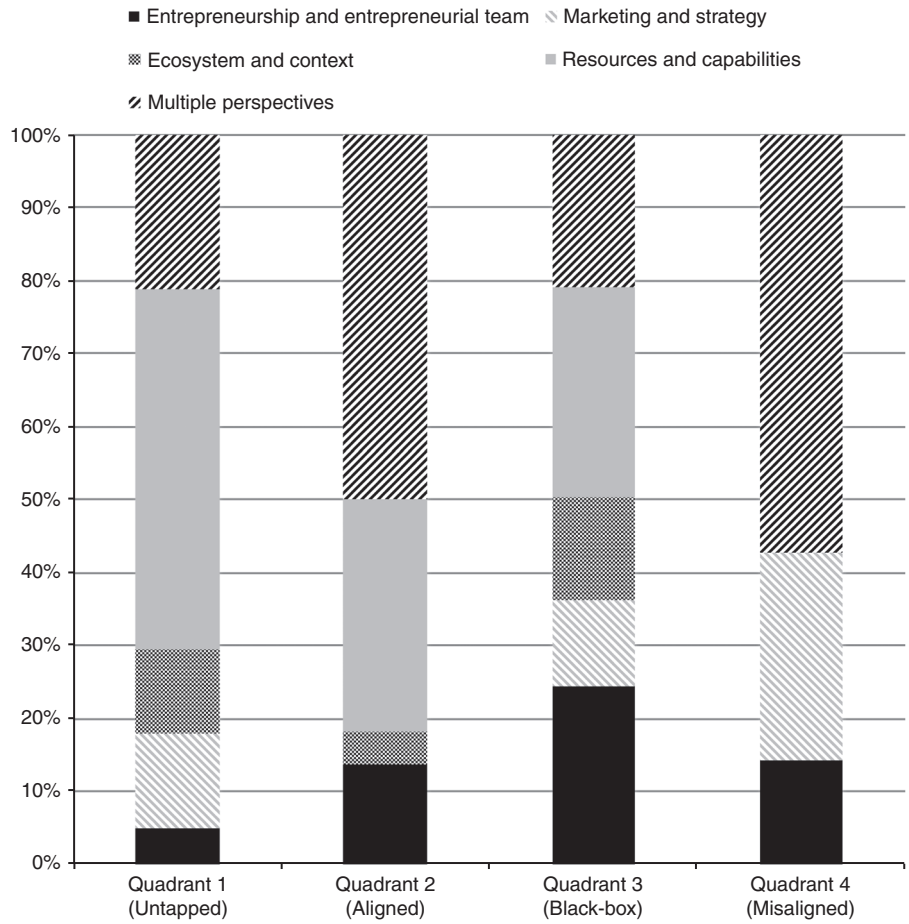

Figure 4. Papers classified by quadrant and theoretical perspective

As well, the ecosystem and context perspective remains under-explored. In this regard, it could be stimulating, for example, to understand how the support provided by incubators, scientific parks, venture capitalists and industrial clusters influences the growth pace of new ventures in different phases. Further, additional knowledge is needed in relation to the interplay between the environmental conditions and other supporting variables (resources, attitudes, strategies, etc.) in relation to the growth of new ventures based in developing countries.

To conclude, this study is not without limitations. First, despite maximum care given to the selection of articles, some relevant papers might have unintentionally been left out of the analysis. To reduce this risk, the selected sample was double-checked with the bibliographies of the most influential studies in the field. Second, the categorisation of papers is, of course, subjective and subject to all the limitations of subjectivity. To limit potential biases in this process, all the procedures described in the methodology (double-checking, joint discussion sessions to discuss problematic articles) were applied, but inaccuracies might have occurred. Responsibility for any such errors lies with the authors only.

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