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The relationship between discretionary slack and growth in small firms

Michael Sheppard [1]

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Abstract Discretionary slack, along with entrepreneurial orientation (EO), are vital to the growth and long-term survival of small firms. This research combines a Penrosian view of growth with structural contingency theory to develop and test a conceptual model of the relationship between slack and growth. Using a survey of Canadian firms with fewer than 50 employees, the study finds that discretionary slack has positive effect on growth which is fully mediated by EO. In addition, the analysis confirms a positive reciprocal effect of a feedback loop between growth and slack. The study controls for, and considers the effects of, firm age, size and industry knowledge intensity. This research contributes valuable insights for further development of firm growth theory, specifically in relation to small firms. The study is also important for policy development given that: a) small firms have the *potential* to contribute more than larger firms to job creation but may not due to early exit; b) firms exhibiting even modest growth more than double their chances of survival; and, c) those firms that survive grow fast. This study contributes to the literature on firm growth and informs small business leaders. It also provides policy makers with practical insights to facilitate their role in supporting the growth and survival of small firms that make such an important contribution to the economy.

Keywords Discretionary slack · Entrepreneurial orientation · Growth · Small firms · Resources · Penrose · Structural contingency

Introduction

Contrary to the findings of Birch's (1987) study of job creation in the US, small businesses do not have a disproportionate effect on net employment growth. More

✉ Michael Sheppard
michael.sheppard@acadiau.ca

[1] F. C. Manning School of Business, Acadia University, Wolfville, NS B4P 2R6, Canada

recent research found that prior studies had not adequately accounted for job losses resulting from exits and regression-to-the-mean effects related to cycles of shrinkage and growth (Haltiwanger et al. 2013). When controlling for firm age the effects observed by Birch disappear. Nevertheless, there is an interesting dynamic in small firms not reflected in Gibrat's law, which suggests that growth rate is independent of firm size. Start-ups do create a substantial number of jobs at entry, although 47% of these jobs are eliminated by exits in the first five years (Haltiwanger et al. 2013). Those firms that survive grow fast and make an important contribution to overall economic stability and growth. Correspondingly, firms that grow at all more than double their chances for survival (Phillips and Kirchhoff 1989). It is therefore crucial to understand the underlying mechanisms of, and possible barriers to, small firm growth.

The resource-based view (Barney 1991; Penrose 1959; Peteraf 1993; Rumelt 1984; Wernerfelt 1984) explains the importance of adequate resources for experimentation and growth. Dynamic capabilities theory (Makadok 2001; Teece et al. 1997; Winter 2003) extends this logic to describe how resources are developed and recombined allowing firms to act on entrepreneurial opportunities or buffer against environmental uncertainty. Firms that have high levels of resource commitment to support existing operations may, however, miss opportunities. Or worse, they may fail because of unforeseen events. It is therefore important for the entrepreneur to have resources at hand that can be deployed quickly in the form of *discretionary slack*.

Prior studies, however, reveal mixed results related to the direction and size of the effect of the various types of slack on performance, including growth. In a meta-analysis of 66 studies, Daniel et al. (2004) found a positive relationship between three types of slack (available, recoverable, and potential) and performance, particularly when controlling for industry. Available and potential slack (excess liquidity and borrowing capacity) were found to have a stronger relationship with performance than recoverable slack (overhead expenditures). This was explained by the fact that recoverable slack is already absorbed in the firm and is more difficult to access while available and potential slack are relatively accessible and available for use at the discretion of managers. This is supported by empirical studies (e.g. Wiersma 2017; Omri and Ayadi-Frikha 2014) that the total effect of available slack on performance is positive (through innovation and profitable investment opportunities) while the effect of recoverable slack is negative.

George (2005) distinguished between the effects of low- and high-discretionary slack on performance but observed an inverse U-shaped relationship with the former and linear positive relationship with the latter. These findings can be explained from a behavioural perspective whereby "more [high-discretionary] slack is better for appeasing coalitions, experimentation and risk taking" (p. 21), therefore more results in better performance. Too little low-discretionary slack, however, may lead to counterproductive reallocation of resources, whereas too much may result in agency problems which would explain a negative relationship with performance at the extremes. Tan (2003), however, found curvilinear relationships between both absorbed and unabsorbed slack and performance for medium to large State-owned enterprises in China, as did Chiu and Liaw (2009) in a study of Taiwanese high-tech firms.

In conjunction with the possible effect of outliers on prior study results (Wefald et al. 2010), the lack of consistent measures of slack or performance make it difficult to resolve the ongoing debate in the literature. Tan and Peng (2003) suggested though that

"the right question to ask is not whether slack is uniformly good or bad for performance, but rather, what range of slack is optimal for performance" (p. 1260).

Most studies are not, however, specific to small firms. These firms differ both in structure and growth dynamics from their larger counterparts, which could also explain some inconsistency in results. This research therefore addresses the question: Does discretionary slack have a positive impact on the growth of small firms? If so, how are discretionary slack and entrepreneurial orientation related to the growth of these firms? The proposed conceptual model is tested empirically using a sample of 774 small Canadian firms with fewer than 50 employees.

This study contributes to the corporate entrepreneurship literature and to practice. First, it provides further explanation of the relationship between discretionary slack, entrepreneurial orientation (EO) and small firm growth. Prior research has tended to focus on small and medium sized enterprises (SMEs) and may have included firms of up to 500 employees and/or excluded firms with fewer than 10 employees. The structures and processes in smaller firms are likely to be quite different from larger firms included in these samples. Therefore, self-limiting models of growth, such as those based on core rigidities theory, may not apply. Rauch et al. (2009) argued that firm size is a significant factor that determines the magnitude of the effect of EO on firm performance, including growth. Top managers in small firms normally have direct influence on outcomes, without intervening layers of management. Therefore, they have more flexibility to act on opportunities as they present themselves and would be less prone to agency problems.

Second, this research explains how small firms can sustain or increase growth rates through the accumulation of slack. The analysis thereby supports Penrose's explanation of a linear relationship between resources and the ability to grow that is only limited by the capabilities of management.

In addition, recent studies have argued that small firms may be more entrepreneurial because of their resource constraints (Baker and Nelson 2005; Katila and Shane 2005). While necessity is the mother of invention, limited resources may not provide the ideal environment for small firm growth. Small firms typically do not have access to venture capital or angel investment and may have reached the limits of trade or debt financing. This study explores how they can accumulate resources through organic growth from retained earnings to achieve entrepreneurial goals that may otherwise be unattainable.

Finally, the proposed reciprocal effect of resources accrued through the growth of small, typically resource-constrained, firms makes a unique contribution to the study of small high-growth firms including gazelles. While prior studies have tested the effects of slack and EO on firm growth, and firm growth on slack, none have tested the simultaneous effects in a non-recursive model. This study develops the argument for, and hypotheses to test, a mediated effect discretionary slack on growth (via EO) and a reciprocal direct effect of growth on discretionary slack.

This study proposes a conceptual model and hypotheses. It begins by describing the effect of discretionary slack on firm growth and the mediating role of EO, and then explains the effect of growth on slack. Although these two effects may, in fact, occur simultaneously they are modelled and tested as sequential processes with separate hypotheses. This is followed by a description of the research method, results of empirical tests, and analysis. Discussion of results and study limitations leads to conclusions, implications for research and practice, and recommendations for future research.

Theoretical background and hypothesis development

Theoretical background

Slack is defined as excess capacity available to an organization (March and Simon 1958) or "a pool of resources in an organization that is in excess of the minimum necessary to produce a given level of organizational output" (Nohria and Gulati 1996, p. 1246). This may include "redundant" employees, capacity, or capital. Research built on Penrose's growth theory (e.g. Barney 1991; Wernerfelt 1984) established the role of slack and the potential for dynamic reconfiguration of resources as providing the basis for experimentation and innovation, leading to entrepreneurial entry and growth. Gilbert et al. (2006) argued that new venture growth is related to resource endowments, both human and financial, with the latter being more closely associated with sales growth. Moreno and Casillas (2007) suggested "the existence of slack resources, and especially of those characterized by higher indivisibility, seems to be the major cause of higher growth for the SMEs." (p. 85). Further weight is added to the argument by Cassia and Minola (2012) who proposed the "extraordinary degree of access to resources is the main dimension which significantly distinguishes hyper-growth firms from other firms" (p.191).

Our understanding of the role of slack goes beyond entrepreneurial growth to include its function as a buffer against unexpected external events (Wiklund 2006; Zahra and Covin 1995), allowing firms to continue to prosper despite a hostile environment. From a behavioural perspective, slack tends to reduce intra-organizational conflicts over resources, allowing firms to operate more efficiently (George 2005). Bourgeois (1981) proposed, however, that increasing slack up to a certain point would have a positive effect on performance but that excessive slack may be negative. Firm growth, and the accumulation of excess resources, may potentially result in core rigidities (Ireland et al. 2003; Mosakowski 2002) and learning traps (Levinthal and March 1993). These pitfalls may render firms less entrepreneurial, thereby limiting future growth (Leonard-Barton 1992).

As with the theoretical, the empirical explanations of the effect of slack are decidedly mixed. Nohria and Gulati (1996) found that high–discretion (unabsorbed) slack is more readily available than low-discretion (absorbed) slack for experimentation, acting on opportunities, and reducing the impact of environmental uncertainty. In a meta-analysis of 66 studies, Daniel et al. (2004) showed that the type of slack influenced the nature and direction of the relationship with performance, although in most cases the direction was positive for available, recoverable, and potential slack. Both Mishina et al. (2004) and Bradley et al. (2011) found that available financial slack had a positive effect on sales growth, although Mishina's study found the effect to be negative through market expansion. Inconsistency in the strength and direction of the effect has led to explanations of a non-linear relationship between slack and growth (Chiu and Liaw 2009; George 2005; Tan 2003; Tan and Peng 2003).

Although Miller and Friesen (1982) predicted that entrepreneurial firms would have significantly higher growth than conservative firms, more recent empirical evidence related to the effect of EO on growth is mixed, implying a complex relationship. In a meta-analysis of published EO studies, Rauch et al. (2009) found a moderately large correlation between EO (in its various conceptualizations) and measures of

performance, including sales growth. This correlation was, in fact, significantly higher in businesses with fewer than 50 employees (0.345) than in those with between 50 and 499 employees (0.198). In a systematic review of 158 empirical papers on EO, Wales et al. (2013) reported most studies linked EO to either mixed measures of performance or to sales growth, although the results were not necessarily positive or linear. Kreiser et al. (2013), for example, found a U-shaped relationship between the individual dimensions of EO and sales growth. While most prior research has been based on the *EO-as-advantage* assumption, Wiklund and Shepherd (2011) suggested that it may be more appropriate consider an *EO-as-experimentation* approach, where EO is associated with a larger range of performance outcomes from failure to success.

More recent studies have confirmed the differing roles of the individual dimensions of EO on financial performance, including sales growth. Jin et al. (2017) extended the EO-performance relationship to find that risk-taking directly enhances financial performance, whereas proactiveness does so through the mediating effect of marketing capability.

Discretionary slack and small firm growth

Both the Penrosian and behavioural perspectives (e.g. Cyert and March 1963) acknowledge the importance of resource availability for growth, however neither provide an explanation specific to small firms. Structural contingency theory (e.g. Thompson 1967) examines the interaction between organizations and their institutional environments. Thompson describes the tension between lower-level technical management and higher-level institutional management within organizations. The former seeks commitment of resources to provide enhanced certainty and are driven by short-term goals. Managers in the technical core of organizations are more likely to perform *problemistic* searches (for solutions to problems) as proposed through the behavioural theory of the firm (Cyert and March 1963). However, institutional management is focused on long-term strategies and seeks the flexibility provided by slack to allow for an uncertain future. They are more likely to engage in *opportunistic surveillance* (Thompson 1967), investigating the environment with a natural curiosity. Middle management acts as a liaison between the technical core and the senior management level of the organization to balance the push and pull of resources between the demands of certainty and uncertainty. Wennberg and Holmquist (2008) differentiate *slack search* from problemistic search. Their research explains how firms generate financial or human resource slack during times of growth that allows them to search for opportunities outside their core business, leading to experimentation.

Using Miles and Snow's strategic archetypes, Troilo et al. (2014) found that analyzers were more dependent on slack resources to perform searches outside the current knowledge domain of the firm (distal searches) which, in turn, enhanced radical innovation. Dasí et al. (2015) also examined firms' strategic orientations, specifically their tendency towards either exploration or exploitation, and the moderating effect of slack resources on firm growth through internationalization.

The question remains, however, as to how these theories apply to small businesses in the absence of management layers. Entrepreneurs are often owner/managers and carry the responsibility of sustaining their organizations. However, they may have less

pressure to ensure the firm's survival in comparison to larger firms.[1] Entrepreneurial decision-makers may, in fact, be predisposed to have a different attitude towards risk-taking. Palich and Bagby (1995) found that, although entrepreneurs may not perceive themselves as more likely to take risks, they tend to categorize business situations more positively as "opportunities" that non-entrepreneurial managers might reject based on risk–return heuristics. Many small firms are, in fact, family firms which introduces further complexity in determining risk-related behaviour. Zahra (2005) argued that risk-taking is a critical aspect of the entrepreneurial growth and found that high family ownership and family involvement is associated with higher risk business activities in small and large family firms. The study did, however, reveal that the presence of long-tenure CEO's in family businesses tended to inhibit risk-taking, to the detriment of firm growth. This is less likely to be a factor in smaller, younger firms. For small firms to thrive they must be proactive. They must engage in opportunistic surveillance (or slack search) to find their market niche or innovate to meet the demands of current or potential customers for new products and services. The relatively flat organizational structure in small firms implies that the owner/manager is responsible for both commitment and flexibility decisions. A high degree of discretion in resource allocation allows entrepreneurs make optimal use of organizational resources. These may either be committed to achieving short-term goals or retained as slack for long-term strategies or responses to unpredictable environmental changes. The direct control of resources, often by a single individual, reduces the tension associated with a hierarchical organizational structure thereby allowing the entrepreneurs to quickly commit resources to higher-risk opportunities. Small firms are therefore more likely to make efficient use of slack than larger firms.

On the other hand, smaller firms are more constrained by a deficiency in slack. In examining alternative theories for small firm growth, O'Farrell and Hitchens (1988) argued that "The nature and scale of the impediments facing the small firm are fundamentally different" (p. 1368). The study claims that the resource shortages constraining the expansion of small firms are unlikely to be bottlenecks to growth for larger firms. Slack helps smaller firms overcome this impediment to growth and allows them to reach optimal levels of efficiency. Thus,

H1: Discretionary slack has a direct positive effect on small firm growth.

The mediating role of entrepreneurial orientation

The competitive advantage afforded by the accumulation of resources only partially explains firm growth. Dynamic capabilities theory (Makadok 2001; Teece et al. 1997; Winter 2003) extended the resource-based view to explain how firms learn to reconfigure resources and routines, establishing the structure and processes necessary for an entrepreneurial strategic posture. Cassia and Minola (2012) argued that dynamic capabilities enable firms to make rapid organizational changes, exploit resources

[1] The social cost of failure of the largest of firms (those considered "too big to fail") resulted in government bailouts of several US banks in the late 2000's. At the opposite end of the spectrum of firm size, bankruptcy protection enables risk-sharing between entrepreneurs and the task environment.

effectively, and create wealth. Zahra et al. (2006) suggested, "Over time, some firms may develop dynamic capabilities that stimulate and foster an entrepreneurial orientation throughout their operations" (p. 944). This view is supported by Swoboda and Olejnik (2016) in finding that market knowledge gained through scanning and planning enhances EO, which in turn contributes to performance.

Establishing an EO is, however, a resource-intensive process. Through a combination of experience and conscious experimentation, organizations learn to be entrepreneurial. Ireland et al. (2003) explained how the accumulation of potential capacity in the form of value-creating resources helps firms learn to recognize entrepreneurial opportunities through opportunity-seeking behaviour. While Moreno and Casillas (2008) argue that EO promotes growth through strategic behaviour and that "availability of resources favor the rapid growth of the firm" (p. 524), there is a cost associated with this behaviour. Wiklund and Shepherd (2005) cautioned that "entrepreneurial strategies require considerable financial resources to be successful" (p. 72). Zahra et al. (2006) suggested that organizational resources are consumed in establishing dynamic capabilities or lost to failed experiments. Firms must therefore have sufficient resource availability (i.e., discretionary slack) to support the effort and learning required to explore entrepreneurial strategies and "without slack, these strategies may be attractive but beyond reach" (Ahuja and Lampert 2001). Arend (2014) found that smaller firms are not as effective as larger firms in driving performance through dynamic capabilities. The study suggested that managers would benefit from gathering more resources and being more entrepreneurially oriented.

Moreno and Casillas (2007) proposed that organizational slack is associated with flexibility, opportunity orientation, experimentation and risk-taking, and provides the basis for ongoing growth and increased efficiency. Mousa and Chowdhury (2014) suggested that "slack is crucial to facilitating and sustaining innovation in organizations" (p. 370). This lends further support to George's (2005) claim that slack resources allow a firm to experiment and take risks leading to innovation and enhanced performance; in other words, to act entrepreneurially.

Prior arguments related to slack, EO and growth, for the most part seem to align with Wiklund and Shepherd's (2011) view of EO-as-experimentation, with an expected variance in performance outcomes. It follows that sufficient discretionary slack would allow small firms to reduce the downside risk associated with entrepreneurial experimentation that could potentially lead to failure. In summary, slack resources fuel growth by enhancing a firm's propensity and ability to engage in entrepreneurial activities, as reflected in their EO. Thus,

> H2: Discretionary slack has a direct positive effect on entrepreneurial orientation such that entrepreneurial orientation mediates the relationship between slack and the growth of small firms.

Reciprocity of slack and growth

While the relationships between slack, EO and performance or growth have received much attention in the literature, there is still some uncertainty around causal direction. Rauch et al.'s (2009) meta-analysis of empirical studies questioned whether EO causes

performance or vice-versa and suggests that further research in this area is warranted. In a review of the development of the EO construct since his seminal paper, Miller (2011) stated, "It is just as sensible to believe that good performance generates funds that promote innovation, risk taking, and proactiveness as to believe that EO drives performance" (p. 888). Due to the limitations of cross-sectional designs and analytical tools, empirical studies tend not to propose reciprocal relationships. This investigation would seem warranted, however, given an ambiguous causal direction.

Ahuja and Lampert (2001) discussed the possible existence of a "virtuous circle of corporate entrepreneurship" (p. 540) in which firms that pursue novel, innovative technologies create breakthrough innovations resulting in access to wealth and surplus, or slack resources, which in turn can be used to explore further innovation in the next cycle. Growth therefore results in the accumulation of resources that firms need to support entrepreneurial activity. Wales et al. (2013) claimed that "achieving high levels of growth becomes a primary objective of small firms, as growth affords firms the organizational slack necessary to potentially buffer resource-related liabilities" (p. 94).

Sharfman et al. (1988) proposed that larger organizations tend to have access to more resources, either internally or externally, to commit or to retain as slack. Growth and the accumulation of slack are in fact paramount to small firm survival. Smaller firms are generally affected by resource shortages and are not operating at optimal efficiency (O'Farrell and Hitchens 1988). They tend to lack adequate organizational resources to be able to meet both commitment and flexibility goals. Growth allows small firms to move towards x-efficiency in use of committed resources while increasing levels of slack. This slack then supports experimentation and acts as a buffer against the effect of unexpected environmental changes. Thus,

H3: Growth has a direct positive effect on the level of discretionary slack in small firms.

The conceptual model developed in this study is depicted in Fig. 1.

Methods

Data source

This cross-sectional empirical study is based on organizational factors that have been linked to firm growth, including measures of entrepreneurial orientation and level of slack resources. The population for the study is small Canadian firms (with fewer than 50 employees) across all industries. The sample was randomly extracted (irrespective of size) from the Scott's Directory (a commercial database), the Canadian Company

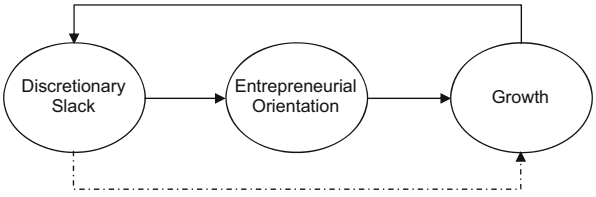

Fig. 1 Conceptual model

Capabilities database (maintained by Industry Canada), and annual listings of Canada's fastest growing companies (published by Profit magazine).

In 2009, key informants[2] from 16,099 companies for which a valid email address was provided were sent an invitation to complete an online questionnaire, which required a three-year look back period. Two reminder emails were sent at one-week intervals to those contacts that had not yet completed the questionnaire. From a total of 1665 responses, a large percentage was incomplete and those that contained no values for sales growth were eliminated, leaving 888 firms of all sizes.

The final dataset contained 774 firms with fewer than 50 employees at the beginning of the measurement period (2006) as per the OECD classifications of micro and small firms (OECD 2008). This represents 87% of the final sample—somewhat less than the 96% reported by the Industry Canada (2009) as the percentage Canadian firms with fewer than 50 employees in the study year. Annual sales were reported by category, ranging from under 100 thousand to over 50 million CAD, with close to half of these firms reporting under 0.5 million in sales. The firms employed up to 212 (median 5) people at the time of the study. Some firms had grown beyond the 50-employee cut-off, however their size three years prior to the study was used to determine their categorization. While the sample contained firms in most industry sectors, the distribution did not perfectly correspond to that of the population of small firms. Industry Canada (2009) reported that nearly half of these firms belonged to four sectors: 1) professional, scientific, and technical services; 2) other services (except public administration); 3) construction; and 4) retail trade. In this sample, 50% of firms were in the first two sectors while the other sectors were under-represented. It is not surprising, however, that service-based firms, particularly scientific and technical, would be more likely to complete an online survey than firms in the construction or retail sectors due to the nature of their work. Tables 1 and 2 summarize the sample statistics by industry and firm size.

The results were analysed for non-response bias according to the guidelines outlined in Armstrong and Overton (1977) and Rogelberg and Stanton (2007). The mean of annual sales growth was compared between early and late responders to test for response bias using a t-test. The null hypotheses (that the means are equal) could not be rejected, indicating that no response bias exists in the sample. An additional test was performed in which the number of hours to respond was regressed on sales growth and the latent constructs measuring EO and discretionary slack. No significant relationship was found between these variables thereby supporting this finding. This study did have the potential to be affected by common bias since the latent constructs defined in the model were based on self-reported measures subject to common rater bias (Podsakoff et al. 2003). All data were collected via a questionnaire, therefore within a common measurement and item context. As a statistical remedy, a single first-order latent "method" factor, containing items from all latent variables, was added to the model. Including this factor in the model controlled for any systematic variance associated with the method (Meade et al. 2007; Podsakoff et al. 2003). A chi-square difference test (Satorra and Bentler 2001) indicated that there was no significant difference between

[2] The constructs measured by this survey include firm strategies as well as financial information therefore it was critical that the respondent have knowledge of and access to this information. For this reason, the recruitment letters were sent to the key contact in the organisation, normally the president, CEO, owner or other executive.

Table 1 Sample and population statistics by industry

NAICS sector		n	Sample %	Population %[a]
11	Agriculture, Forestry, Fishing and Hunting	16	2.1	4.7
21	Mining, Quarrying, and Oil and Gas Extraction	12	1.6	0.8
22	Utilities	4	0.5	0.1
23	Construction	22	2.8	11.5
31–33	Manufacturing	116	15.0	4.2
41	Wholesale Trade	42	5.4	5.5
44–45	Retail Trade	20	2.6	12.9
48–49	Transportation and Warehousing	25	3.2	4.6
51	Information and Cultural Industries	28	3.6	1.2
52	Finance and Insurance	16	2.1	3.8
53	Real Estate and Rental and Leasing	7	0.9	4.1
54	Professional, Scientific, and Technical Services	239	30.9	11.4
55	Management of Companies and Enterprises	8	1.0	1.2
56	Administrative and Support, Waste Management and Remediation Services	6	0.8	4.6
61	Educational Services	37	4.8	1.0
62	Health Care and Social Assistance	5	0.6	8.5
71	Arts, Entertainment, and Recreation	18	2.3	1.5
72	Accommodation and Food Services	3	0.4	6.4
81	Other Services (except Public Administration)	150	19.4	11.5
91	Public Administration	0	0.0	0.6
All	774	100.0	100.0	

[a] Population statistics obtained from Statistics Canada Business Register for Canadian firms in the study year

the nested models, i.e., the fit did not improve with the addition of the method factor. The findings of these tests indicated that neither non-response nor common method bias had an impact in this study.

Measures

The following describes the measures included in the models, as well as the results of construct validity and reliability tests.

Firm growth

Firm growth was defined as the percentage of sales growth over the previous three years of operation, as suggested in OECD (2008).

Discretionary slack

Atuahene-Gima et al. (2005) defined discretionary slack as "the degree to which uncommitted resources are immediately available in the short run to fund organizational

Table 2 Sample statistics by firm size

Prior year sales (range in thousands CAD)	N	Percent	Employees in base year	n	Percent
0–99	154	19.9	<5	380	49.1
100–199	98	12.7	5–9	152	19.6
200–499	124	16.0	10–19	117	15.1
500–999	91	11.8	20–49	125	16.1
1000–4999	190	24.5			
5000–9999	62	8.0			
10,000–24,999	38	4.9			
24,999–49,999	5	0.6			
50,000 +	12	1.6			
Total	774	100.0	Total	774	100.0

initiatives" (p. 472). Slack resources are measured using of an adaptation of their 4-item Likert scale instrument.

Entrepreneurial orientation

The entrepreneurial orientation (EO) construct is one of the most commonly used in the entrepreneurship literature. However various versions of the concept have been developed. Table 3 summarizes the generally accepted definitions and operationalizations of EO, beginning with Miller's (1983) definition of an entrepreneurial firm as "one that engages in product-market innovation, undertakes somewhat risky ventures, and is first to come up with 'proactive' innovations, beating competitors to the punch" (p. 771). Miller's work led to the commonly-cited Covin and Slevin (1989) unidimensional scale which was subsequently linked to firm performance (Zahra 1991; Zahra and Covin 1995). Lumpkin and Dess (1996) later suggested a framework for analyzing the "methods, practices, and decision-making styles managers use to act entrepreneurially" (p. 136). Their alternative conceptualization of EO specified a multi-dimensional construct including risk taking, innovativeness and proactiveness. They added two new dimensions: competitive aggressiveness and autonomy. In this model, each dimension can contribute independently to outcome measures, which allows researchers to explore the relationship between individual dimensions of EO and performance metrics including growth.

Most EO research has made use of the three core components of Miller's definition of entrepreneurial firms (Rauch et al. 2009). However, there has been considerable debate over whether Covin and Slevin's unidimensional reflective construct can adequately measure the variance in EO among firms. Hughes and Morgan (2007) proposed a scale to measure the five sub-dimensions identified by Lumpkin and Dess (1996) with each factor measured reflectively, but not aggregated into a second-order EO construct. Covin and Wales (2012) suggested that researchers continue to build on the commonly accepted measures of risk taking, innovativeness and proactivness but proposed a multi-dimensional reflective construct that would allow each sub-dimension to vary independently, as per Miller's definition. Their study goes on to state that a formative

Table 3 Operationalizations of entrepreneurial orientation

Author(s)	Dimensions	Measurement model	Description
Miller (1983)	Innovativeness, risk taking, proactiveness	N/A (conceptual definition)	Entrepreneurial firms that engage in product-market innovation, risky ventures and proactive innovations.
Covin and Slevin (1989)	Innovativeness, risk taking, proactiveness	Unidimensional first-order reflective	A nine-item unidimensional scale containing items measuring risk taking, innovativeness and proactiveness.
Lumpkin and Dess (1996)	Autonomy, innovativeness, risk taking, proactiveness, competitive aggressiveness	N/A (conceptual definition)	EO as processes, practices, and decision-making activities that lead to new entry, in which one or more of the sub-dimensions may exist.
Hughes and Morgan (2007)	Autonomy, innovativeness, risk taking, proactiveness, competitive aggressiveness	Multidimensional first-order reflective	An Eighteen-item scale measuring the 5 sub-dimensions proposed by Lumpkin and Dess (1996).
Covin and Wales (2012)	Innovativeness, risk taking, proactiveness	Multidimensional first-order reflective	An eight-item scale based on Miller's original 3 sub-dimensions in which each can vary independently.

EO construct could be useful for specific research questions. However, it is "problematic when employed for theory testing purposes in relation to other constructs" (p. 690) and limits comparison of results across studies. EO constructs operationalized as formative versus reflective, or with five sub-dimensions versus three, are measuring *different concepts*. Therefore researchers are encouraged to let their research questions drive model structure (Wales et al. 2013).

The goal of this study is to build on comparable research relating EO, performance and growth, and to examine the role of the overarching entrepreneurial strategic posture in relation to other constructs, i.e., slack and growth. Thus, following Covin & Wales' recommendations, and Miller (1983), this study makes use of a multi-dimensional reflective EO construct comprising risk taking, innovativeness and proactiveness.

Instrumental variables

The bidirectional relationship between discretionary slack and firm growth is a potential source of endogeneity leading to the decision to add instrumental variables for each factor. The use of instrumental variables in structural equation models is described in further detail at the end of this section.

Bentzen et al. (2012) noted that the majority of empirical studies reject Gibrat's law (that the proportional rate of growth of a firm is independent of its absolute

size) and found support for a relationship between size and growth. A latent variable of *firm size* (the log of number of employees) was therefore regressed on firm growth.

Wiklund and Shepherd (2005) argued that "access to financial capital provides the resource slack necessary to encourage experimentation within the firm, allowing it to pursue new opportunities" (p. 73). Discretionary slack was therefore instrumented by the latent variable *capital access* (a measure of the difficulty in accessing financing) since firms can make use of financing to supplement available resources. An additional instrumental variable *resource access* was added to measure the degree to which companies allow employees and project teams access to the resources needed for experimentation.

Control variables

Firms of different age and size have been found to have systematic variations in characteristics that influence growth (Krasniqi and Mustafa 2016) and the relationships modeled in this study. The log of number of years since founding (*firm age*) and the log of number of employees (*firm size*) were added to the final structural equation models. Sectoral growth patterns may be explained by differences in *knowledge intensity* (Autio et al. 2000) capturing the imitability of a firm's core technology. Firms were assigned to one of three categories, from low to high knowledge intensity, according to their industry as per Morissette et al. (2004).

Table 4 contains a correlation matrix and descriptive statistics for all items.

Scale validity and reliability

The scales used in this study have been adapted from prior studies. Therefore, a confirmatory rather than exploratory approach was appropriate when determining validity and reliability of the nine items comprising the EO scale (Miller 1983; Covin and Slevin 1989; Covin and Wales 2012) and the four items used to measure slack resources by Atuahene-Gima et al. (2005). Following the guidelines in Hair et al. (1998), one low-loading item ($\lambda < 0.4$) was dropped from the discretionary slack factor. All other items were significant with high factor loadings ($\lambda \geq 0.6$). Item–total correlations for all remaining items exceeded the accepted cut-off of 0.3 (Bernstein and Nunnally 1994). A good Cronbach's alpha ($\alpha \geq 0.8$) was demonstrated for all but the EO Innovativeness and Firm Growth factors, although a value exceeding 0.7 is considered adequate (Bernstein and Nunnally 1994). As per Fornell and Larcker (1981), an average variance extracted (AVE) score of ≥0.5 for each construct demonstrated that the associated measurement error is outweighed by the variance extracted through its indicators. All factors displayed convergent validity (reliability) with a composite reliability (CR) score of 0.7 or more. Discriminant validity between factors was verified according to the procedure by Gefen et al. (2000). An additional assessment of discriminant validity, as described by Anderson and Gerbing (1988), involved running a chi-square difference test of the factor model against a restricted model with correlations between pairs of latent variables fixed to a value of one. A significant chi-square difference between the two models ($p < 0.000$) indicated the

Table 4 Correlation matrix and descriptive statistics

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
1. Growth Sales[a]	0.29																		
2. Growth Emp[a]	0.14	0.24																	
3. EO Proa 1	0.10	0.09	3.33																
4. EO Proa 2	0.12	0.11	1.90	3.29															
5. EO Proa 3	0.12	0.10	1.79	2.14	3.16														
6. EO Inno 1	0.12	0.10	1.31	1.57	1.87	3.49													
7. EO Inno 2	0.11	0.10	1.21	1.45	1.36	1.63	3.68												
8. EO Inno 3	0.11	0.10	1.23	1.48	1.22	1.42	2.13	3.18											
9. EO Risk 1	0.09	0.08	1.07	1.28	1.20	1.20	1.11	1.39	3.17										
10. EO Risk 2	0.12	0.10	1.31	1.56	1.47	1.47	1.36	1.38	2.08	3.30									
11. EO Risk 3	0.10	0.09	1.15	1.38	1.30	1.30	1.20	1.22	1.84	2.24	2.90								
12. Disret Slack 1	0.10	0.09	0.48	0.58	0.54	0.54	0.50	0.51	0.44	0.54	0.48	3.08							
13. Disret Slack 2	0.10	0.09	0.51	0.61	0.57	0.57	0.53	0.54	0.46	0.57	0.50	1.92	3.34						
14. Disret Slack 3	0.11	0.10	0.54	0.64	0.60	0.60	0.56	0.57	0.49	0.60	0.53	2.03	2.13	3.18					
15. Resource Access[b]	0.06	0.05	0.23	0.27	0.25	0.25	0.24	0.24	0.21	0.25	0.22	0.80	0.84	0.88	3.89				
16. Capital Access[b]	0.02	0.01	−0.11	−0.13	−0.13	−0.13	−0.12	−0.12	−0.10	−0.13	−0.11	−0.86	−0.90	−0.96	3.91	3.91			
17. KI[c]	0.00	0.00	−0.01	−0.02	−0.02	−0.02	−0.01	−0.02	−0.01	−0.02	−0.01	0.01	0.01	0.01	−0.03	−0.03	0.31		
18. Firm Size[d]	0.10	0.09	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.36	0.38	0.40	−0.25	−0.25	−0.03	1.14	
19. Age[e]	−0.08	−0.07	−0.09	−0.11	−0.10	−0.10	−0.09	−0.10	−0.08	−0.10	−0.09	0.08	0.08	0.09	−0.29	−0.29	−0.03	0.30	0.59
M	4.90	4.47	4.09	4.49	4.29	3.34	3.12	3.27	3.53	3.89	2.91	3.57	2.86	1.91	4.00	4.53	2.43	1.91	2.51
SD	0.48	0.49	1.81	1.78	1.87	1.92	1.78	1.79	1.81	1.70	1.75	1.83	1.78	1.07	1.97	1.98	0.56	1.97	0.77

[a] Log of % sales and % employment growth over last 3 years

[b] Measures of ease in accessing resources and difficulty in accessing capital; 7-point Likhert scales

[c] Knowledge intensity (KI) level of industry; 1 = low, 2 = moderate, 3 = high

[d] Log of number of employees at time of survey

[e] Log of number of years since founding

constructs demonstrated discriminant validity. See Table 5 for a summary of the validity and reliability analysis.

Models

Covariance-based structural equation modeling (SEM) was used test the hypotheses. The main point in its favour over individual regression models is that SEM can eliminate the effect of random measurement error (Bollen 1989). In this study, Mplus version 6 (Muthén and Muthén 1998–2010) was used to simultaneously test the measurement and structural models. Overall fit was evaluated based on guidelines (e.g. Hu and Bentler 1999) specifying that the model should normally have a non-significant chi-square statistic, CFI ≥ .96, TLI ≥ .95, RMSEA ≤ .05 and SRMR ≤0.08. Nested models were compared using a Satorra-Bentler scaled chi-square test, a robust chi-square difference test with mean and variance adjusted statistics (Asparouhov and Muthén 2006).

Modelling non-recursive relationships

Although reciprocal causation complicates interpretation, Bagozzi and Yi (2012) explained that models can be estimated and tested with SEM procedures, and "It may be that two phenomena cause each other but do so over time." (p. 24). Seneta (2006) added that there is no statistical reason why path analysis would be limited to recursive models. Kelloway (2014) identified methodological challenges involved in modelling, but also suggested a solution: "Moreover, in the original form of path analysis, in which path coefficients are estimated through ordinary least squares regression … recursiveness is a required property of models. Recursive models, however, are not a necessary condition for identification, and it is possible to estimate identified nonrecursive models (i.e. models that incorporate reciprocal causation) using programs such as Mplus." (p. 14).

Although the final model in this study is identified due to inclusion of a mediating term (EO), endogeneity may have obscured the relationships between discretionary slack and firm growth therefore instrumental variables were added to the model. These are truly exogenous variables, that is they are not caused by other variables in the model nor do they contribute to the hypothesized effects. The two-stage least squares (2SLS) method allows for "consistent estimation of simultaneous equation with endogenous predictors … a clean and elegant way to purge models of endogeneity" (Antonakis et al. 2014) p.p. 29,30). The correlation between cross-equation disturbance terms of discretionary slack and firm growth was then estimated to acknowledge and unmeasured "shock" that effects both (Antonakis et al. 2010). The Hausman endogeneity test (Hausman 1978) involves a chi-square difference test between two models with a one-degree of freedom difference: one model with the correlation of the disturbance estimated; and, another in which this path is constrained to zero. The models and tests can be implemented in SEM programs (Antonakis et al. 2010), in this case using the MLR estimator in Mplus. The two models were significantly different in support of adding instrumental variables to reduce endogeneity.

Table 5 Measurement model reliability and validity

Model constructs and items	Item-to-Total Correlation	Cronbach's α	Factor Loadings λ	AVE	CR
EO Proactiveness		0.812		0.603	0.819
In dealing with its competitors, my company typically initiates actions which competitors then respond to.	0.603		0.687		
In dealing with its competitors, my company is very often the first business to introduce new products/services, administrative techniques, operating technologies, etc.	0.727		0.836		
In general, the top managers of my company have a strong tendency to be ahead of others in introducing novel ideas or products.	0.658		0.798		
EO Innovativeness		0.750		0.516	0.761
In general, the top managers of my company favour a strong emphasis on R&D, technological leadership, and innovations.	0.488		0.657		
Very many new lines of products/services have been marketed in the past 5 years.	0.634		0.741		
Changes in product or service lines have usually been quite dramatic.	0.618		0.753		
EO Risk Taking		0.852		0.665	0.856
A strong proclivity for high risk projects (with chances of very high returns.	0.671		0.739		
Owing to the nature of the operational environment, bold and wide-ranging acts are necessary to achieve the company's objectives.	0.781		0.879		
When confronted with decisions involving uncertainty, my company typically adopts a bold posture in order to maximize the probability of exploiting opportunities.	0.717		0.823		
Discretionary Slack		0.831		0.636	0.839
Our company has uncommitted resources that can quickly be used to fund new strategic initiatives.	0.691		0.786		
We are able to obtain resources at short notice to support new strategic initiatives.	0.691		0.780		
We have substantial resources at the discretion of management for funding strategic initiatives.	0.723		0.825		
Firm Growth		0.683		0.537	0.699
Log of percent sales growth over last 3 years.	0.530		0.734		
Log of percent employment growth over last 3 years.	0.530		0.732		

Results

The results of the analysis indicate support for a direct relationship between discretionary slack and growth, as well as an indirect relationship mediated by EO. There was also a significant positive effect of growth on slack. Addition tests for common method variance implied no reliability issues. See Table 6 for standardized model fit results and comparison statistics and Fig. 2 for structural equation modelling results.

Direct effects

Model 1 was used to test the relationship between slack and growth. The direct effects model had a non-significant chi-square statistic, thereby rejecting the null hypothesis that it is the same as the baseline model in which all the structural paths are assumed to be zero. Values for RMSEA, CFI, TLI, and SRMR were all within the cut-off limits recommended for the sample size by Hu and Bentler (1999). The path between discretionary slack and growth was positive and significant in support of H1.

Two additional direct effects were measured as a prerequisite for the mediation tests described in the following section. Model 2 tested the effects of EO on growth. Values for RMSEA, CFI, TLI, and SRMR were all within the cut-off limits recommended for the sample size by Hu and Bentler (1999). The model demonstrated a significant positive relationship on the path between EO and growth. Model 3 included direct paths between both discretionary slack and EO, and growth. In this model, the path from EO to growth was significant while the path from discretionary slack to growth was not.

Table 6 Structural equation modelling results

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Paths						
Discret Slack→ Firm Growth	0.151***		0.099 ns	0.082 ns	n/a	n/a
EO → Firm Growth		0.228***	0.204***	.132**	.162***	.177**
Discret Slack → EO				.302***	.305***	.241***
Firm Growth → Discret Slack						.623***
Model Fit						
$\chi 2$	0.978	75.514***	174.248***	213.867***	217.339***	292.102***
df	2	27	56	88	89	113
RMSEA	0.000	0.048	0.052	0.043	0.043	0.045
CFI	1.000	0.984	0.969	0.968	0.968	0.951
TLI	1.004	0.973	0.957	0.958	0.957	0.936
SRMR	0.006	0.025	0.095	0.044	0.046	0.053

*$p \leq .05$

**$p \leq .01$

***$p \leq .001$

ns not significant, *RMSEA* root-mean-square error of approximation, *CFI* comparative fit index, *TLI* Tucker-Lewis index, *SRMR* standardized root mean square residual

Standardized estimates are shown. $n = 774$

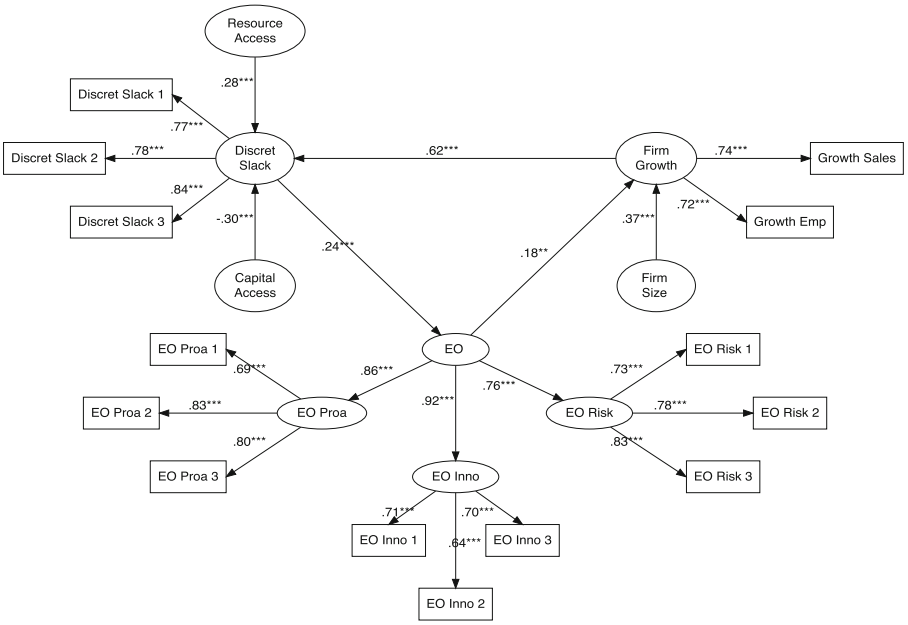

Fig. 2 Structural equation modelling results. Tucker-Lewis Index = .94; Comparative Fit Index = .95; root mean square error of approximation = .045; chi-square = 292.1; degrees of freedom = 113

Mediation effects

Following the method outlined by Baron and Kenny (1986), model 4 included an additional path between discretionary slack and EO to test for partial mediation. Both the direct and indirect path from slack to growth were left free to vary. The nested perfect mediation model (model 5) had the parameter estimate for the direct path between discretionary slack and growth constrained to zero, while the indirect path via EO was free to vary. The Asparouhov and Muthén (2006) test then allowed comparison of the mean and variance-adjusted chi-square difference between the nested models. There was no significant difference when comparing the chi-square values, thus indicating that the partial mediation model offered no improvement in fit over the more parsimonious perfect mediation model. Values for RMSEA, CFI, TLI, and SRMR were all within the cut-off limits recommended for the sample size by Hu and Bentler (1999). Model 5 demonstrated significant positive relationships on the paths between discretionary slack, EO and growth, thereby supporting H2. These relationships held when controlling for size, age and industry knowledge intensity.

A non-recursive model (model 6) tested the reciprocal relationship of growth on slack by adding a parameter between growth and discretionary slack. Values for RMSEA, CFI, TLI, and SRMR were all within the recommended cut-off limits and the model demonstrated significant positive relationships on all paths, thereby supporting H3.

Instrumental and control variables

The instrumental variable firm size had a large significant effect on firm growth. The resource and capital access instrumental variables had a positive and negative effect, respectively, on discretionary slack (the latter was a negatively coded variable). The

controls added to the models had mixed effects on growth. Firm age had a significant negative effect on both firm growth and EO, although its effect was positive on discretionary slack. The effect of industry knowledge intensity was not significant in the final model.

Discussion

Discussion of results

The analysis of the survey results from 774 small Canadian firms established the relationship between discretionary slack and firm growth mediated by EO, as proposed in H1 and H2. It also revealed the presence of a feedback loop between firm growth and discretionary slack, as proposed in H3.

Finding a negative relationship between firm age and growth was not surprising, given recent reports on the dynamics of employment growth (Criscuolo et al. 2014; Haltiwanger et al. 2013). Younger firms (less than five years old) grow at a faster rate than older firms where employment, another commonly used measure of firm growth, is concerned. Firm age was found to be associated with lower rates of employment growth across 18 OECD countries. Canada reported a 10% difference in growth rates between old and young businesses which was among the largest found. These studies also examined the effect of size on growth, finding net job growth rate increases with firm size. Their findings are consistent with the results of this study indicating a positive relationship between firm size and growth, and a negative relationship between firm age and growth.

Industry knowledge intensity was found to have a non-significant relationship with growth in the sample of small firms studied. This was somewhat surprising given the nature of the measure used. Wales et al. (2013) suggested that "in attempting to explain the causal path through which EO is actualized into outcomes, researchers usually turn to knowledge-based variables … such as organizational learning" (p. 368). Wales et al. (2011) considered entrepreneurial and learning orientations to be "mutually reinforcing" (p. 907). Although it was not measured in this study, organizational learning would be expected to share some of the variance associated with knowledge intensity. The results of this study indicate that this variance may be obscured by the effects of age and size. Also, although size at entry would tend to differ by industry due to capital intensity, Haltiwanger et al. (2013) found patterns of net job creation to be remarkably similar across industries, which may explain the non-significant relationship with growth.

Implications

These results underscore the importance, particularly to small firms, of gathering sufficient resources and building capabilities prior to exploring opportunities. Managers of firms who wish to accelerate growth should be more entrepreneurially-oriented and maintain as high levels of discretionary slack (resulting from growth) as is possible without sacrificing operational capabilities. The study also makes important contributions to the literature and theory of firm growth and has implications for policy.

First, the results of this study show that discretionary slack is an important factor in small firm growth, and that its effect is fully mediated by EO. This fills a gap in the literature and theory of firm growth by providing a causal explanation of the effects of slack in the

specific context of small firms. There have been no studies that specifically explain the effect of slack on the growth of small firms. This is surprising, given George's (2005) suggestion that the "implications of slack for growth in entrepreneurial firms is an important issue that needs to be addressed methodically." While George's study did not single out small firms, the structural differences in smaller firms as well as their potential for contribution to economic growth warrants specific attention in the literature. Although most businesses have fewer than 50 employees, small firms are frequently included with SMEs and larger firms in studies of performance or growth. While recent research has cast doubt on their role as net job creators, small new firms are still vitally important to the economy. Recent declines in firm entry has given cause for concern. Growth reduces the chance of failure, which accounts for the loss of almost half of the jobs created by firm entry. Therefore, studies of small firm growth are essential for determining policy measures to enhance their odds for survival. Finding a positive relationship between discretionary slack, EO and growth is consistent with a Penrosian view and dynamic capabilities theory. Valuable resources, either in their original form or recombined, contribute to competitive advantage and growth through the efforts of entrepreneurial owner/managers. This may be an oversimplification though and has since been challenged in the literature by introducing the notion that slack may, in some cases, hinder performance or growth. While this may be true for larger organizations in which excess slack can reduce efficiency through agency or incentive problems, it is not likely the case for small firms. Except for those start-ups with access to venture capital or significant angel funding, additional slack is unlikely to be detrimental to small firms. It is much more likely to result in additional experimentation and enable entrepreneurial opportunities that may lead to growth.

Second, while virtuous cycles have been proposed in prior studies of firm performance and growth, no studies were found empirically testing a possible feedback loop between slack and growth, despite suggestions in the literature that such a relationship is likely. This study builds on Wilklund et al.'s research by providing a reciprocal link between small business growth and EO through discretionary slack. The findings of this research support the existence of a cycle involving the use of discretionary slack to support the entrepreneurial strategies of owner/managers leading to growth, which in turn contributes to the accumulation of slack resources. The effect of firm growth on slack has been reported in the literature. However little has been done to investigate a reciprocal relationship between slack and growth despite the suggestions of Miller (2011) and Rauch et al. (2009). Wiklund et al. (2009), while not referring specifically to slack, suggested that "not only does an EO stimulate small business growth, but that growth in turn fosters the EO of a small business" and "investigating these potential 'feedback' effects would be a valuable extension of the model" (p. 367).

In addition to making empirical contributions to the literature, the study extends firm growth theory by proposing a mechanism whereby resources contribute to growth in a dynamic, rather than static, system. The resource-based view of the firm provides an explanation of how valuable, rare and inimitable resources can provide competitive advantage. Dynamic capabilities theory proposes that firms adapt to a changing environment by reconfiguring their unique resources into capabilities to create short-term competitive positions. While the intersection of these domains provides an excellent foundation for the study of firm growth, it does not offer a robust explanation of how firms increase their investment in competitive positions as a means of gaining sustainable competitive advantage in the long term. This research builds on the

evolutionary perspective of dynamic capabilities with a systems approach that models the cyclical relationship between firm growth and the accumulation and reconfiguration of resources for entrepreneurial exploration.

Finally, Eberhart (2012) highlighted the importance of policies which, rather than simply lowering barriers to entry, also lower the barriers to growth and failure, reducing the risk to the entrepreneur. Start-up failures, and the associated waste of resources, have an enormous economic cost (Ries 2011). This study is relevant given the link between growth and firm survival (Phillips and Kirchhoff 1989). The declining rate of start-ups among OECD countries since the Great Recession (Criscuolo et al. 2014) accentuates the importance of understanding the mechanisms behind small firm growth. This is crucial to the development of appropriate policy to encourage entry of the right types of firms (i.e., those with growth potential), support their growth after entry, and increase their chances of survival in the long term.

Limitations

While the results of this study provide a useful contribution to entrepreneurship theory and practice, some aspects of the research may raise questions about validity. Web-enabled surveys provide access to many potential respondents with relative ease, but they are also associated with poor response rates, particularly in organizational studies. Fortunately, the number of responses was sufficient in this case to effectively test the hypotheses. However, the overall response rate was somewhat low, which may bring the external validity of the study into question. The use of a single method to gather the data, for both independent and dependent variables, may also have contributed to bias in the results. However, this was not found to be an issue in the common method variance (CMV) test. CMV has the potential to profoundly skew the results of non-experimental studies (Williams et al. 2010) and should be addressed a priori if possible. It may also be controlled for post hoc. The latter approach was taken for this study, in which no evidence of CMV was found. It may be important for future research to investigate a priori methods of reducing CMV adding further validity to empirical studies of this type.

It is also important to note that growth in sales or employment does not guarantee the success or stability of the firm in the long term. Growth in sales does not necessarily imply profitability or the creation of new jobs. The perceived value of firm growth measures varies according to the stakeholder. While increased sales and profitability may be the primary motivation of the entrepreneur, increased employment may be a higher priority goal for policy-makers.

Finally, although a longitudinal study is often used to test causal models with lagged outcome variables and reciprocal effects, these data are not always available for management research. According to Wong and Law (1999) it is often difficult to determine the appropriate time lags for effects that may be happening simultaneously with causes, but cross-sectional data fit with non-recursive structural equation models can closely approximate the true lagged effects.

Avenues for future research

Further empirical research is recommended to develop a more generalizable model of small firm growth, further confirming the relationships between slack, EO and other

factors. Various types of resources (financial, human, production capacity, or network) could be included in measures of slack to compare their respective effects. Additional factors such as learning orientation or innovation intensity could further explain the causal chain, particularly between EO and growth. It may also be useful to examine the nature of slack with respect to its creation and consumption, and the relationship of this dynamic to EO and growth. In addition, a longitudinal study—with staggered slack, EO and growth measures—may help to confirm the causal directions implied in this study's model, as well as to more accurately measure changes in slack and EO over time. Longitudinal data could also provide further insight into the relationship between slack, EO and firm failure.

Conclusions

The Penrosian view and dynamic capabilities theory provide a general explanation of firm growth due to the presence or recombination of valuable resources. This research applies structural contingency theory to provide further specificity in relation to the growth of small firms. The findings of the empirical study support a linear positive relationship between discretionary slack and small firm growth through EO, with a feedback loop from growth to slack. These findings make an incremental contribution to the firm growth literature, particularly with respect to the growth of small firms. In addition, they provide a unique new perspective for policy-makers who are mandated to support the entry, growth and long-term survival of small business, a vital sector of the economy.

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