

**Innovations and Sales Growth in New Ventures:
The Mediating Effect of Growth Intention**

While the direct influence of innovation on growth has been examined in the entrepreneurship literature, the underlying channels of influence have remained largely unexplored. This article draws upon behavioral reasoning theory to examine whether growth intention is the pathway through which product, process and organizational innovations influence venture growth. Results from the analysis of a dataset of 20,472 French new ventures reveal that: (1) product, process and organizational innovations have a positive impact on sales revenues growth; (2) growth intention has a positive impact on sales revenues growth; and (3) growth intention mediates the effects of innovations on sales revenues growth. These findings have implications for a more balanced and nuanced view on how innovations impact new venture growth.

Keywords:

Innovation, growth intention, sales growth, entrepreneurs

1. Introduction

Venture growth has been viewed as the essence of entrepreneurship (Brown et al., 2001; Gundry and Welsch, 2001; Sadler–Smith et al., 2003; McKelvie and Wiklund, 2010). A variety of stakeholders are interested in venture growth (Leitch et al., 2010) because of its contribution to the creation of employment and wealth (Audretsch et al., 2014; Gilbert et al., 2006). The OECD underlines the importance of supporting entrepreneurship for boosting job creation and the European Commission promotes Entrepreneurship through the Entrepreneurship 2020 Action plan¹. Despite a great interest on the growth phenomenon in empirical entrepreneurship research, several literature reviews (Gilbert et al., 2006; Wiklund et al., 2009; Achtenhagen et al., 2010; Leitch et al., 2010; McKelvie and Wiklund, 2010) have identified a variety of weaknesses in this field. According to McKelvie and Wiklund (2010) research has been primarily concerned with the question of “how much?” whereas the literature still lacks an answers for the “how?” dimension; i.e., which mechanisms do lead to the growth of young ventures (Gilbert et al., 2006; Leitch et al., 2010; McKelvie and Wiklund, 2010)? Gilbert et al. (2006) and Leitch et al. (2010) empirical work has mostly focused on answering “why” do venture achieve growth. Although the literature on “why” questions (Gilbert et al., 2006), respectively growth as an outcome (McKelvie and Wiklund, 2010), has produced rich insights on which variables – ranging from individual traits to resources, strategy, motivational aspects, and organizational structures – influence venture growth (Achtenhagen et al., 2010; Gilbert et al., 2006; Leitch et al., 2010; Wiklund et al., 2009), each model provides only partial explanations and has not it has not produced answers to the modes and the process of growth. This limits predictive ability and prevents from a big picture of ventures’ growth (Wiklund et al., 2009).

¹ http://ec.europa.eu/enterprise/policies/sme/promoting-entrepreneurship/index_en.htm

If growth is crucial for policy makers, innovation is as well as central for them (Audretsch et al., 2014). Indeed, the literature on innovation and firm growth has experienced a flourishing interest in empirical research (Rosenbusch et al., 2011; Audretsch et al., 2014). A comprehensive meta-analysis by Rosenbusch et al. (2011) supports the overall positive relationship between innovative strategies and entrepreneurial performance. However, researchers in innovation emphasize the role of product, process, and organizational innovations as a major source of competitive advantage (Damanpour, 1991; Han et al., 1998; Renko et al., 2009). Compared to other growth strategies, internal organic growth by introducing innovation is more common for young ventures than their bigger incumbents (McKelvie et al., 2006). Despite the overall straightforward positive findings on innovation and new venture growth, the diversity of innovative strategies has not found widespread recognition in the empirical literature on innovation and firm growth (Audretsch et al., 2014).

For Krueger (1993), intentions are the single best predictor of behavior, both conceptually and empirically. Kautonen et al. (2013) show that entrepreneurial behavior is determined by entrepreneurial intentions because intention leads to action. According to Gilbert et al. (2006), deciding to grow the firm is the first and foremost *strategic* decision all entrepreneurs must make. Building greatly on the Theory of Planned Behavior (TPB) (Ajzen, 1985; 1991), and later on the Behavioral Reasoning Theory (BRT), and thus on the idea that there is a gap between intentions and actions (e.g., Miller et al., 1986), longitudinal empirical research has demonstrated a positive link between motivational aspects and actual growth (Miner et al., 1994; Wiklund and Shepherd, 2003; Baum and Locke, 2004; Delmar and Wiklund, 2008). This straightforward positive link between intention and behavior has recently been viewed more critically. Growth intention might change over time (McKelvie and Wiklund, 2010; Gielnik et al., 2013) because initial market rewards will for example trigger motivation and change expectancies (Gielnik et al., 2013).

Although, based partly on the theoretical reasoning of the BRT, the current literature informs about strong evidence that growth intention determines venture growth, but also, that innovative strategies determine venture growth. Thus, we are left with an incomplete understanding of the venture growth phenomenon (Gilbert et al., 2006; Wiklund et al., 2009; Achtenhagen et al., 2010; Leitch et al., 2010; McKelvie and Wiklund, 2010). More importantly, we remain with an important, yet unresolved theoretical and empirical question: is innovation the reason for growth, is intention the reason for growth or is growth the reason for innovation and changing growth intention? To untangle this question, theory must inform better about the gaps between cause(s) and effect(s) and why we have to expect such lags (Lichtenstein et al., 2007).

Refocusing on the main actor of the new venture, we suggest that the entrepreneur's growth intention is the channel through which innovations impact venture growth (Kolvereid and Bullvag, 1996). Building on the BRT and following researchers who emphasize the entrepreneur's growth intention as the crucial aspect in the venture growth process (Kolvereid and Bullvag, 1996), our research question is: Is growth intention a channel through which product, process, and organizational innovation impact venture growth?

Showing that the link between innovation and growth is mediated through intention to grow we offer a more nuanced theoretical perspective. In other words, there are amplified effects of innovations through the intention to grow. This research therefore provides a contextualized perspective on why some ventures grow, because it takes into account context-specific reasons for growth intention and subsequent venture growth as proposed by the BRT by Westaby (2005). A better understanding of "how" new ventures can grow is a key issue for researchers policymakers, and entrepreneurs. Consequently, entrepreneurs should not be supported only during the invention phase or innovation launching phase. Rather, growth and how to grow a venture should be at the center of attention of support. We also recommend

that policy makers give increased attention to the entrepreneur's growth intention. Our last contribution is to focus on the concept of "intention to grow" that is – based on our results – a relevant antecedent of sales growth.

Our paper will be structured as follows. First, we present our hypotheses about direct and mediating effects of innovation, growth intention and venture growth. Next, we explain the methodology applied and present our empirical findings before discussing them. Finally, the paper closes with limitations and suggestions for future research.

2. Theoretical background and development of hypotheses

2.1. Behavioral reasoning theory by Westaby (2005)

Broadly based on the Theory of Planned Behavior (TPB) (Ajzen, 1985; 1991), empirical research confirm the positive effect of innovative strategies (i.e., creating unique value for customers (e.g., Kakati, 2003), qualitatively superior products (e.g., Anderson and Zeithaml, 1984; MacMillan and Day, 1988; Roure and Keeley, 1990), new and/or advanced technology (e.g., Siegel et al., 1993), and overall innovation (Schoonhoven et al., 1990; Roper, 1997; Heunks, 1998; Deeds et al., 2000) on the growth of young ventures. Consequently, the link between innovations and growth seems well known in literature. But, this complex link seems simplified and do not reflects how complex the innovation process is. Behavioral intention models such as the TPB (Ajzen, 1985; 1991) have thus not sufficiently addressed *which particular and context specific reasons* provide unique insight into motivational mechanisms (Westaby, 2005). Reasons are broadly defined as "...people's pro/con and benefit/cost explanations, but also their facilitator/constraint explanations" (Westaby, 2005, p. 100).

In line with several other theoretical models (e.g., Greve, 2001), BRT suggests that "reasons" are crucial determinants of individual behavior (Westaby, 2005). In contrast to TPB, BRT

proposes that not only “global reasons” (e.g., subjective norm), defined as “broad substantive factors that consistently influence intentions across diverse behavioral domains” influence intentions and subsequent behavior, but rather “context-specific beliefs and reasons which are contextualized to the specific behavior under investigation ... serve as the fundamental antecedents of global motives and intentions” (p. 98). Differentiating between global and context specific reasons, BRT therefore offers a more nuanced perspective on which reasons impact intentions and behavior than the TPB.

Based on the theoretical assumptions of BRT, we present a research model which tests the direct link between innovation and venture growth as well as assumes that the link between innovation and growth is mediated through intention (Westaby, 2005). Thus, we assume that reasons to grow, such as innovations, impact intention to grow and finally impact venture growth.

2.2. Hypotheses on innovation and venture growth strength

Thompson (1965) defines innovation as the “generation, acceptance and implementation of new ideas, processes, products or services” (p. 36). This incorporates one of the most recognized innovation dichotomies – technical versus administrative innovations – and therefore offers a comprehensive view of a variety of innovations that possibly contribute to the success of an enterprise (Damanpour, 1991; Han et al., 1998). According to Damanpour (1991, p. 560): “Technical innovations pertain to products, services, and production process technology; they are related to basic work activities and can concern either product or process,” whereas “administrative innovations involve organizational structure and administrative process; they are indirectly related to be basic work activities of an organization”.

Product innovations may take different forms – i.e., breakthroughs, upgrades, modifications, or extensions of existing products (Li and Atuahene-Gima, 2001) – all of which accompany a relative product advantage. Thus, innovation offers two major benefits for young ventures: it both provides a competitive advantage and reduces sales uncertainty (Giarratana, 2004). Several empirical studies demonstrate that in return, these advantages contribute positively to performance (Zahra and Bogner, 2000; Li and Atuahene-Gima, 2002; Giarratana, 2004; Branzei and Vertinsky, 2006). The work by Corsino and Gabriele (2010) shows that past product innovations have an impact on revenue streams for companies in the integrated circuit industry. Accordingly, we propose:

Hypothesis 1a: Introducing product innovations has a positive impact on sales growth.

Process innovations typically target at increasing efficiency and/or the effectiveness of internal production processes (e.g., Zahra, 1996). Georgellis et al. (2000) show that process innovations contribute significantly to product innovations and provide a competitive edge in return. Rochina-Barrachina et al. (2010) demonstrate a positive relationship between process innovation and growth whereas Manez et al. (2013) show that process innovations lead to productivity growth in Spanish manufacturing SMEs. With respect to the discussed literature, we expect a positive relationship between the introduction of process innovations and sales growth.

Hypothesis 1b: Introducing process innovations has a positive impact on sales growth.

Damanpour and Evan (1984) posit that administrative innovations may not be as common as technical innovations but that their direct and indirect impact on corporate performance may be just as important. Following the suggestions from the meta-analysis by Damanpour (1991) on organizational innovations, we also include organizational innovations in our research model. Given the overall positive link between innovation and growth, we posit:

Hypothesis 1c: Introducing organizational innovations has a positive impact on sales growth.

2.3. Hypothesis on innovation and growth intention strength

Innovation literature focus essentially on big firms that launch innovations on the market and only few studies focus on young ventures (Li and Atuahene-Gima, 2001). In the entrepreneurial context, the intention to grow is central in the actual actions of the firm. In line with Dutta and Thornhill (2008), we “[...] define growth intentions as being the entrepreneur's goals or aspirations for the growth trajectory she or he would like the venture to follow” (p. 308).

For achieving growth, entrepreneur should desire growth (Kolvereid and Bullvag, 1996). This perspective is in line with the theory of reasoned action (Fishbein and Ajzen, 1975) and the TPB (Ajzen, 1991) which explain the fundamental basis of behavior. These models generally state that – global reasons – an attitude toward the behavior, subjective norm, and perceived control predict intention and that intention predicts behavior. Behavioral reasoning theory (BRT) (Galoti, 1989; Westaby, 2005) suggests that reasons can be used to support, distort, or rationalize behavior once behaviors are enacted. Consequently individuals will strengthen their reasons to support their action once they start engaging in the behavior (Westaby, 2005). We therefore assume that product, process and organizational innovations impact growth intention of entrepreneurs. Indeed, based on these potentialities of competitive advantage, the entrepreneur will develop strategic actions to coordinate innovation efforts with resource support. Accordingly, we propose:

Hypothesis 2a: Introducing product innovations has a positive impact on growth intention.

Hypothesis 2b: Introducing process innovations has a positive impact on growth intention.

Hypothesis 2c: Introducing organizational innovations has a positive impact on growth intention.

2.4. Hypothesis on growth intention and sales growth strength

Little research has focused on the link between growth intention and actual venture growth (Kautonen et al., 2013). Instead, micro-economic theory takes growth for granted while disregarding motivation, commitment, and individual intentions for growth. However, the limited empirical literature applying longitudinal designs has demonstrated a positive link between motivational aspects and actual growth (Miner et al., 1994; Wiklund and Shepherd, 2003; Baum and Locke, 2004; Delmar and Wiklund, 2008). The results by Wiklund and Shepherd (2003) indicate a complex relationship between the intention to grow one's venture and actual growth moderated by personal experience, educational achievement, and industry dynamics. Baum and Locke's (2004) six-year longitudinal study reveals that goals, self-efficacy, and communicated vision have direct effects on venture growth. These factors mediated the effects of passion, tenacity, and new resource skills on subsequent growth. Drawing on the commitment to growth, Delmar and Wiklund (2008) also reveal a positive impact on growth. Kolvereid and Bullvag (1996) find that growth intentions may be used to predict actual growth, and that changes in growth intentions are associated with changes in growth patterns. In line with these results, Baum and Locke (2004) show that the objectives the entrepreneurs decided for growing the firm have impacts on the growth of new ventures.

Recently, Kautonen et al. (2013) have shown the relevance and robustness of intention model such as TPB in the prediction of start-up intentions and behaviors in their survey of 969 randomly selected adults from Finland and Austria. Those authors also underline the scarcity of investigations studying the translation of entrepreneurial intentions into behaviors.

Therefore, the specific reasons why some ventures grow remain understudied. This appears flattering because beyond the decision to launch a venture, decisions about whether and how to grow the venture – particularly in small structures – are inherently determined by the entrepreneur's intention and motivation (e.g., Bird, 1988; Davidsson, 1991; Cliff, 1998; Baum and Locke, 2004). To consider the entrepreneur's growth intentions is crucial in explaining the growth of young ventures because entrepreneurs have been found to vary considerably in their will to achieve growth (Liao & Welsch, 2003; Wiklund and Shepherd, 2003).

As mentioned above, sales growth is a process that has its antecedent in growth intentions. In line with the aforementioned empirical results on the relationship between growth intention and actual sales growth, we propose the following:

Hypothesis 3: An entrepreneur's intention to increase sales has a positive impact on subsequent sales growth.

2.5. Hypotheses on innovations' impact channeled by growth intention

Previously, we mentioned research that underlines the relationship between innovations and growth (Corsino and Gabriele, 2010; Rochina-Barrachina, Manez, and Sanchis-Llopis (2010). But, pushing innovations on the market is not sufficient to guarantee venture growth. Given that innovations affect growth intention which in turn affect sales growth ((Kolvereid & Bullvag, 1996)), we posit a chain of effects starting from product, process and/or organizational innovations to growth intention and, ultimately, to sales growth. Our comprehension of the effects of innovations on sales growth (Corsino and Gabriele, 2010; Rochina-Barrachina et al. (2010)) can be enhanced through understanding this mediating channel. Thus, we propose:

Hypothesis 4a: The impact of product innovation on venture growth will be mediated by growth intention.

Hypothesis 4b: The impact of process innovation on venture growth will be mediated by growth intention.

Hypothesis 4c: The impact of organizational innovation on venture growth will be mediated by growth intention.

3. Methodology

3.1 Data set and statistical method

Because there is a time lag between the intention to grow one's business and the occurrence of actual growth, research designs require over time collected data. Only these data can deliver profound insights insofar as motivational aspects have an impact on growth at a later time. The previous literature has provided scant empirical evidence on the impact of growth intentions and innovation when applying over time designs (e.g., (Baum & Locke, 2004); (Delmar & Wiklund, 2008)).

We therefore use representative secondary data to test our hypotheses from the French SINE 2009 (Système d'information sur les nouvelles entreprises - New Enterprises Information System)² database by the National Institute of Statistics and Economic Studies. The SINE survey provides information on French entrepreneurs' profiles, characteristics of new ventures, development conditions of new enterprises, and the problems they encounter over

² For further information about the Système d'information sur les nouvelles entreprises (New Enterprises Information System), see <http://www.insee.fr/en/methodes/default.asp?page=sources/ope-enq-sine.htm>.

their first years. It covers *all* new venture creations in France because the questionnaire is mandatory. We studied new ventures created in 2006. This is the year during which the survey was first administered to the current sample. The second survey round in 2009 completes and adds elements to the first questionnaire.

Our analysis excluded various non-responses from the original dataset (N = 48,251). This resulted in a final sample size of 20,472 for our analyses. The sample is primarily composed of male entrepreneurs (69.2%) between 35 and 40 years of age. Ventures were mostly founded in non-innovative industries (96.2%) and have fewer than 10 employees (98.4%).

We used regression methods to test our hypotheses. The common method bias was controlled by a Harman's single factor analysis that resulted in a variance of 20%. To test the mediation effect, we follow the recommendations of Baron and Kenny (1986). This means that we estimated the following regression equations: 1) the mediator on the independent variable; 2) the dependent variable on the independent variable; and 3) the dependent variable on both the independent variable and on the mediator. Separate coefficients for each equation were estimated and tested.

As further suggested by Baron and Kenny (1986, p. 1177), to establish mediation, we looked that the following conditions were hold: "First, the independent variable must affect the mediator in the first equation; second, the independent variable must be shown to affect the dependent variable in the second equation; and third, the mediator must affect the dependent variable in the third equation. If these conditions all hold in the predicted direction, then the effect of the independent variable on the dependent variable must be less in the third equation than in the second. Perfect mediation holds if the independent variable has no effect when the mediator is controlled".

3.2 Measures

3.2.1 *Dependent variable*

According to the literature, sales growth is the most commonly used growth measure (e.g., (Shepherd & Wiklund, 2009); (Gilbert, McDougall, & Audretsch, 2006); (Achtenhagen, Naldi, & Melin, 2010)). It is also applicable across sectors and across firms, and it is insensitive to investments ((Davidsson & Wiklund, 2006)). In line with this and further suggestions by Delmar, Davidsson, and Gartner (2003), we opted for a single measure of growth as the dependent variable: we used *sales revenue growth (SRG)*. Subjective measures of growth are widely applied in the SME research and deliver rich insights (e.g., (Davidsson, Steffens, & Fitzsimmons, 2009)). The SINE data measured the “evolution of sales revenues from 2007 to 2009” in 2009 with the following items: (1) Sales revenues have decreased substantially; (2) Sales revenues have either remained stable or decreased slightly; (3) Sales revenues have increased slightly; and (4) Sales revenues have increased substantially.

3.3.2 *Independent variables*

The survey considers three types of *innovation*: product innovation, process innovation, and organizational innovation. These were measured as dummy variables. In line with the Oslo Manual by the Organisation for Economic Co-operation and Development (2005), firms were asked to specify whether they had made any innovations between 2007 and 2009. Accordingly, product innovation was measured with the following item: “From 2007 to 2009, I have launched new products (or strongly improved products) on the market.” Process innovation was captured by the following item: “From 2007 to 2009, I have implemented a new manufacturing, production, or distribution process in my company.” Organizational innovation was captured by the following item: “From 2007 to 2009, I have introduced new organizational methods in the company.”

Entrepreneurial growth intention was measured in 2009 using a three-point scale. “What was the company’s goal during the last two years: (1) to keep business stable; (2) to slightly increase business; or (3) to substantially increase business.” The method bias related to the consistency effect ((Podsakoff, MacKenzie, Lee, & Podsakoff, 2003)) was assured by the existence of a psychological separation between the measurement of the predictor of growth intention and that for real sales growth.

4. Findings

The means, standard deviations, and correlations are shown in Table 1.

In line with recommendations from Baron and Kenny (1986), we first regressed the mediator on the independent variable and then regressed the dependent variable on the independent variable; last, we regressed the dependent variable on both, the independent variable, and on the mediator.

According to Baron and Kenny’s (1986) definition, there is a mediating effect. Indeed, Model 1 shows the effect of the independent variables (product, process, and organizational innovation) on the mediation variable (growth intention). Model 2 shows the effect of the independent variables on the dependent variable (SRG). Finally, Model 3 shows the effect of the mediation variable on the dependent variable. Moreover, the effect of the independent variable on the dependent variable is less in the third model than in the second one. We represent below the indirect effect of the independent variable on the dependent variable via the mediator. We indicate the Sobel test for each path.

Insert table 1 about here

Insert table 2 about here

Insert Figure 1 about here

Insert Figure 2 about here

Insert figure 3 about here

5. Discussion

The overall purpose of this study is to develop an understanding of the mediating effect of growth intention on the link between innovations and SRG in new ventures. Although growth is not synonymous with success ((Achtenhagen et al., 2010)) and profitability, our results clearly reveal that growth intention is enhancing the link between product, process, and organizational innovations, and sales revenue growth. If entrepreneurs are not committed to growth, the best innovation will not succeed on the market. The current results from a large data set confirm these notions. This study thereby contributes to the relatively small body of research on the relationship between innovation and growth (Corsino and Gabriele, 2010;

Rochina-Barrachina et al. (2010)) in young ventures. We contribute theoretically by showing the mediating channel through which innovations are transformed into SRG. Contrary to the literature, which emphasizes on the link between intention and innovation, we reverse the relationship and show that growth intention can have an effect of innovation. It is, in other words, what BRT theorists (Westaby, 2005) refers to as a “reason” for intention. The introduction of innovation as a context-specific and not global reason for sales growth therefore refines the existing theoretical perspective. Based on these innovations, entrepreneurs have the intention to grow their business. Finally, they increase their sales revenue because they wanted to increase it. Innovations, as “reasons” in sense of Westaby (2005), thus act as a drivers for growth. BRT suggests that “reasons” drive behavior because decisions are implemented with confidence. As a result, the subsequent course of action is also more likely to occur (Westaby, 2005). This again promotes and protects an individual’s self-worth (Westaby, 2005). Thus, if entrepreneurs enact innovative strategies because one is confident in doing the right thing, this may also have the venture prosper over a longer future. By showing the mediating effect of growth intention between innovation and SRG we refine the understanding of which channels drive small business growth. Although the majority of the surveyed enterprises operate in non-innovative industries, the introduction of innovations to the market contributed positively to SRG. Product and organizational innovations predict an increase in sales revenue. While the introduction of product innovations is not surprising in the context of young ventures, the finding regarding organizational innovations is unforeseen. Young ventures stand out because of their flexibility, agility, and speed. However, the current results reveal that changes in organizational structure and administrative process within the first years – where one could imagine that structures are not yet manifest – are a lever for SRG. This result is in accordance with the findings of Damanpour and Gopalakrishnan (2001), who suggest that ventures need to develop and implement multiple innovation types at

the same time rather than prioritizing single ones to improve competitiveness in the long run. However, the introduction of process innovation did not produce any significant results. It therefore does not appear to be imperative among young ventures for growth in non-innovative industries.

Our study has also implications for practitioners. First of all, it highlights the crucial power of growth intention for nascent entrepreneurs. Therefore, individuals who aspire to venture and grow their business should be aware that they need the will to win. Entrepreneurs should also strongly focus on introducing innovations. Hence, keep in mind that even in early venture phases the introduction of organizational innovations reaps benefits. From a macroeconomic perspective, these aspects will translate into wealth and possibly into employment creation. This finding leads us directly to implications for consulting and other support institutions. In addition, to support related to financial and other tangible resources, the motivational aspects of growing a business appear to be important for the SRG. Furthermore, for the due diligence of business plans, consultants should strongly focus on innovation and the associated intention to growth.

Finally, French policy incentives support innovations (ten different sources of funding on the APCE³ website), whereas little support is given to enhance the growth of SMEs. Policy makers tend to encourage firm growth as it is viewed as a vehicle for achieving higher employment, wealth creation, increased tax income, and also a superior reputation for cities, regions, and the country overall ((McKelvie & Wiklund, 2010)). Previous research focuses on high-growth firms and highlights policy implications thereof. Nevertheless, there are numerous controversial issues about policy implications for growing firms, concerning, i.e. data selection methodology, the aggregate implications of having a large share of growth-

³ APCE: Agence Pour la Création d'Entreprise (Agency for venture creation)

intensive firms, and policy implications for high-growth firms (e.g., (Coad, Daunfeldt, Hözl, Johansson, & Nightingale, 2014)).

Despite a large and representative dataset from which we have drawn our results, this research is impaired by several limitations that simultaneously pose promising questions for further research on this topic. First, the SINE database that we used covers only three years. Previous research with longitudinal designs ((Baum & Locke, 2004); (Bradley, Wiklund, & Shepherd, 2011)) cover a longer time frame than the SINE data allowed us to cover. Another limitation of our study is its single-country focus, which does not allow for generalizations across cultural backgrounds. Other countries might show a different pattern in the intention-behavior relationship. In light of the vivid debate over the measurement and operationalization of growth (e.g., (Delmar et al., 2003); (Davidsson & Wiklund, 2006); (Shepherd & Wiklund, 2009); (Achtenhagen et al., 2010)), sales growth has drawbacks. It is sensitive to inflation, and some ventures may have employment growth even before the first sales occur, but they continue to grow ((Delmar et al., 2003)). Growth might also be seen as a multidimensional construct (e.g., (Robb & Watson, 2012)), and each growth variable might have different causes and consequences ((Delmar et al., 2003)). All of these factors may blur our results. The SINE survey measures growth intentions *ex post*. According to Podsakoff et al. (2003), people responding to questions posed by researchers always seek to maintain consistency between their thinking and their attitudes. This may lead to the production of sense relationships that would not otherwise exist and may be considered as a method bias. Although we used different response formats for the measurement of the predictor and criterion variables to reduce the consistency effect as suggested by Podsakoff et al. (2003), this bias was not eliminated. Another unresolved question is the relationship between growth intention and the ability to manage growth. Unfortunately, this study cannot answer all of

these questions and make a conclusion about the multidimensionality and complexity of growth processes, but future research should shed further light on them.

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Tables and figures

Table 1: Means, standard deviations and correlations

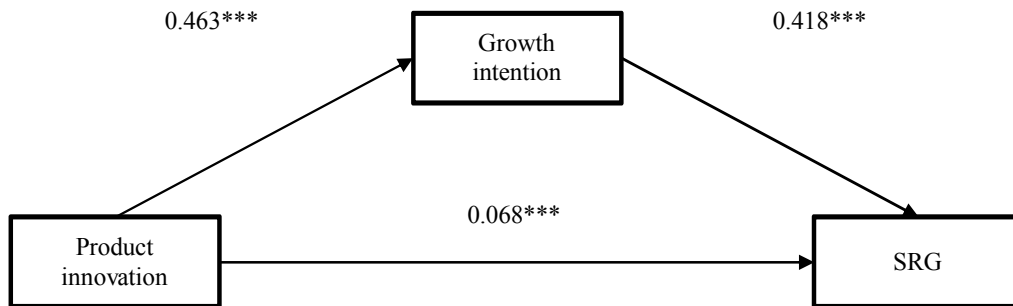
Variables	Mean	SD	1	2	3	4	5
1. Growth intention	1.93	0.656	1				
2. Product innovation	0.31	0.460	0.0146**	1			
3. Process innovation	0.07	0.262	0.073**	0.084**	1		
4. Organizational innovation	0.15	0.354	0.119**	0.025**	0.066**	1	
5. SRG	2.50	0.902	0.428**	0.129**	0.046**	0.111**	1

N = 20.472; *** p < 0.001; ** p < 0.01; *p < 0.05

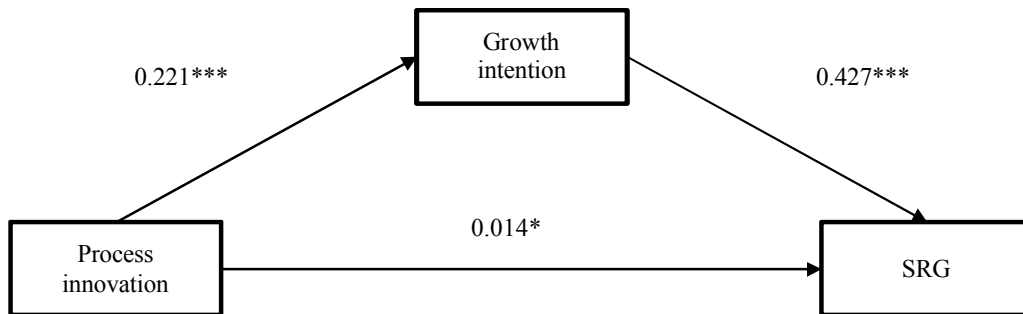
Table 2: Testing mediator effects using multiple regression

Variables	Model 1	Model 2	Model 3
Product innovation – growth intention	0.405***		
Process innovation – growth intention	0.123***		
Organizational innovation – growth intention	0.242***		
Product innovation – SRG		0.124***	0.068***
Process innovation – SRG		0.028***	0.006
Organizational innovation – SRG		0.106***	0.061***
Growth intention - SRG			0.411***
R ²	0.292	0.029	0.191
Adjusted R ²	0.292	0.029	0.191
<i>F</i>	6639.305***	205.580***	1212.750***

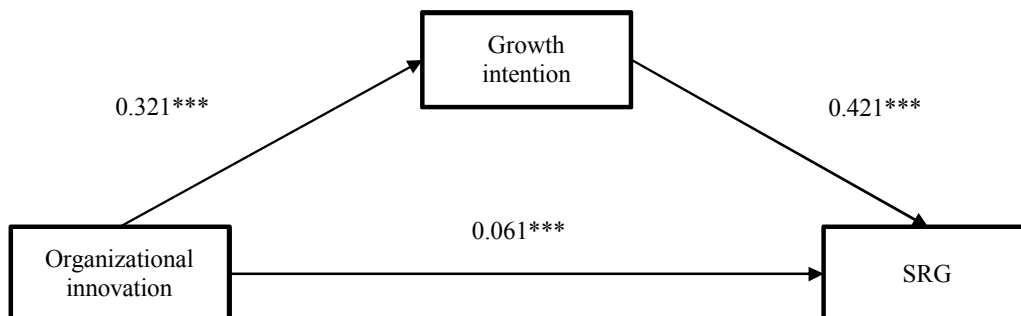
N = 20.472; *** p < 0.001; ** p < 0.01; *p < 0.05

Figure 1: Product innovation path

Sobel test product innovation path: 10.999 with $p=0.0$

Figure 2: Process innovation path

Sobel test process innovation path: 2.271 with $p=0.11$

Figure 3: Organizational innovation

Sobel test organizational innovation path: 9.639 with $p=0.0$