

# Innovation, Performance and Growth Intentions in SMEs

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**Abstract-** The paper investigates the relationship between SME innovation, growth intentions and performance of small firms, by positioning innovation as the dependent variable and examining whether SME growth intention or past performance leads to increased innovation in small-to-medium-sized enterprises. Hypotheses are tested using samples from Australia and USA.

**Keywords-** *Innovation; Past Performance; Growth Intentions*

## I. INTRODUCTION

Because of their size and flexibility SMEs are often viewed as the source of innovative activity. Hence it is viewed as a desired goal. Increasingly, innovation in new products/services and the implementation of key processes are becoming vital sources for firm competitive advantage (Rumelt, 1987; Liao, Kickul & Ma, 2009). Research suggests that firms that engage in developing innovative products and services are positioned to compete more successfully (Hodgetts, Luthans & Slocum, 1999). The ability to develop new products and processes before competitors is an increasingly important factor in first-mover advantage, increasing market share, ROI and overall firm success (Allocca & Kessler, 2006).

This research investigates the relationship between SME innovation, growth intentions and performance of small firms, by positioning innovation as the dependent variable and examining whether SME growth intentions or past performance leads to increased innovation in small-to-medium-sized enterprises. This point was further emphasized by the governor of Nebraska who stated "Now is the time for states to aggressively grow and foster the culture of innovation and entrepreneurship" at the State of Entrepreneurship Conference, February 9, 2012.

## II. LITERATURE REVIEW

### A. SMEs

Interest in SMEs is primarily concerned with their role in stimulating economic growth [3]. However, SMEs face common problems that restrict their performance and by nature, generally have limited resources (Timmons, 1997). While research in the area of business failure is debated, research suggests that failure rates are generally high (Watson, 2003). Small- and medium-sized businesses differ from big businesses on several different levels. SMEs owner/managers make most of the major decisions and often tend to be more concerned with survival rather than growth (Gray, 2002); and are classified as time deprived and tend to focus on day-to-day activities (Garengo, Biazzo, & Bititci, 2005). However, while SMEs are the dominant type of firm in many countries, they may not be acting in an innovative manner. On the other hand, they may be viewed as the fountainhead of innovation.

Entrepreneurship is considered a major driver of competitiveness as new companies in the form of small, young firms create most new jobs (Davis, Haltiwanger, Jarmin, Krizan, Miranda, & Sandusky, 2006). Further, research suggests that high-growth firms were responsible for 80 percent of the total net new jobs created over the last two decades in that country [2]. According to the Small Business Administration (2008), small firms in the US represent 99.7 percent of all employer firms and employ over half of all private sector employees. They make up 97.3 percent of all exports and produce 13 times more patents per employee than large firms. These small businesses make up approximately 29.6 million businesses with 6 million of these with employees. Thus, it can be seen that small business and SMEs are a critical factor in the economic fabric of nations and regions. New innovations can improve quality of life through beneficial or improved products and services.

### B. Innovation

In search of innovation, large firms are increasingly outsourcing a wide range of business activities, which can create new opportunities for SMEs. Larger firms rely on smaller firms for new ideas and technologies, may acquire small companies with promising growth histories and/or partner to develop new products. Larger companies recognize the ability of smaller firms to capture innovation and will often tap the creativity of small growth-oriented firms to remain competitive. While many large firms that have survived and prospered over the long term, most have acknowledged that fostering innovation is very effective via linking to smaller entrepreneurial firms. For example, P&G's 'open innovation' program that encourages managers to seek new innovations outside as well as within the company (Council on Competitiveness, 2007).

Innovation has been discussed as the development of a new product, the process of developing a new product, or the adoption of the new product (Verhees & Muellenberg, 2002), and can be investigated at various levels, such as the project level, industry sector or region (Cooper, 1980; Christensen, 1997; Holbeck, 1973). It has been described as “the successful implementation of creative ideas” (Amabile, 1996, p.1), which can lead to solutions to problems that can have a potential impact on revenues of a firm, industry sector effectiveness and the prosperity of nations (Porter, 1990; Harrison & Huntington, 2000).

The Small Business Administration defines innovation as “a process that begins with an invention, proceeds with the development of the invention, and results in the introduction of a new product, process or service to the marketplace.” (Edwards & Gordon, 1984, p. 1). Innovation has been depicted as a process that occurs in stages (Lynee et al., 1997; von Braun, 1997). More simply, Glynn (1996) described the process in two main phases: invention (initiation of idea) and implementation.

More recently, ‘open innovation’ is a term that has been delineated from innovation itself, and is more collaborative in nature (Rhaman & Ramos, 2010). This type of innovation incorporates joint efforts from in-house functions with possible outsourcing, or perhaps combining several input paths from various sources during the product or service development stage. This open model has been gaining support due to several factors, such as worker mobility, short product life cycles, globalization and increased competition (Rahman & Ramos, 2010). Alternatively, ‘closed innovation’ refers to the processes that restrict the use of knowledge solely within a company and make little or no use of external knowledge (Wikipedia, n.d.).

Innovation has been studied in several forms in the entrepreneurship literature. For example, a firm’s ‘Entrepreneurial Orientation’ suggests that a combination of three basic dimensions: innovativeness, proactiveness and risk-taking create the factors closely tied to an entrepreneurial firm [5, 10, 11]. In this case, innovativeness reflects a tendency to support new ideas, novelty, experimentation and creative processes, thereby departing from established practices and technologies [8].

Research suggests that limited resources and capabilities in small firms inhibit their ability to innovate, although other means of innovation is achieved through off-the-cuff concepts and technologies and other resources offered through networks (Verhees & Muellenberg, 2002). Compared to larger firms, there is general acceptance that smaller firms tend to be more flexible and non-bureaucratic and can adopt innovations more quickly (Carson et al., 1995; Nooteboom, 1994). Thus, new inputs are very important for innovation in small firms and small and young firms can differentiate themselves by introducing product, process or market innovations (McGrath, 2001). The importance of a small firms’ innovation strategy is demonstrated in a prominent study of by Bruderl and Preisendorfer (2000) who discovered that innovation is the single most important factor in predicting firm growth. Therefore, this study proposes the investigation of firm growth intentions and past performance in a firm’s ability to innovative capability (see Figure 1).

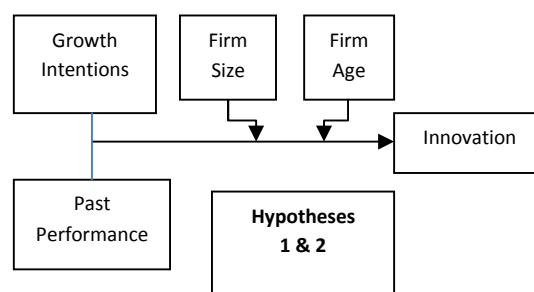


Fig. 1 The model: Past performance and growth intentions as predictors of company innovation

For this research, innovation is defined as the ability to create new valued propositions through offering new products and services, adopting new operating practices, technological, organizational or market-oriented, or creating new skills and competencies ([9]; Schumpeter, 1938). Thus firm innovative ability focuses on both content and processes. Given our interpretation of firm innovation, the framework for our hypothesis development is based on new product/services, opportunity recognition, process/practice development and creativity in accomplishing goals.

### C. Growth Intentions

Entrepreneurs vary considerably in their intentions to grow their business [6]. Alterations in markets offer new opportunities for growth, and this can be exploited in an innovative fashion (Sexton & Bowman, 1991; Brown, Davidsson & Wiklund, 2001; Lumpkin & Dess, 1996; Moreno & Cass, 2008). Studies have shown a clear distinction between growth intentions and actual firm growth; as intentions are only one of the fundamentals for firm growth (Stenholm, 2011; Toivonen, Stenholm & Heinonen, 2006).

Growth intentions and innovation have been linked in previous studies as firms look to take advantage of opportunities, renew processes, modify resources, open new markets, and introduce new products or services (Schumpeter, 1942; Hamel, 2000; Kiam & Mauborgne, 2005; Langerek & Hultink, 2006). Adopting or implementing innovations has been associated positively with firm growth (Cho & Pucick, 2005) and Clabrese and Rolfo (1995) found that innovation constitutes a primary

factor in firm growth. Finally, growth intentions have been shown to be a predictor of organizational growth over the long term (Autio et al., 1997; Krueger et al., 2000).

Therefore, growth-oriented entrepreneurs emphasize innovation more than others (Gundry & Welsch, 2001). Thus it is proposed that a positive relationship exists between growth intentions and innovation (see Figure 1).

*Hypothesis 1: There is a positive relationship between growth intentions and innovation in SMEs.*

#### D. Performance

Researchers frequently take the performance of organizations into account when investigating business phenomena, especially with empirical investigation (Schendel & Hofer, 1979). While most research has focused on large, publicly-held firms. Accurate measurements are very difficult to attain by survey techniques and represent a major source of measurement error due to the confidential nature of the data and the variance among participating firms (Dess & Robinson, 1983). Thus subjective measures are a prominent measure of performance across industries. It is expected that successful firms exhibiting high performance will continue their efforts in striving for innovation.

*Hypothesis 2: There is a positive relationship between performance and innovation in SMEs.*

### III. METHOD

Currently the SBA defines a business concern as one that is organized for profit, has a place of business in the US, operates primarily within the US, or makes a significant contribution to the US economy through payment of taxes or use of American products, materials or labour, is independently owned and operated, and is dominant in its field on a national basis. The business may be a sole proprietorship, partnership, corporation or any other legal form. Size standards categorize small business in the US are determined through a set of guidelines administered by the SBA and varies according to industry. Generally however, "small" is considered to be fewer than 100 employees, and medium-sized is under 500 employees (Headd & Saade, 2008).

#### A. Innovation

Early research has examined the important role of innovation within entrepreneurship (Schumpeter, 1947). Therefore, in order to measure innovation, several dimensions were included in a twelve-item Likert scale. Firstly, new product development is an area that demonstrates where companies have exhibited innovative capability and we have developed four items that include: 1) the number of new products developed, 2) the emphasis of product development and innovation within the firm. Knowledge has been identified as an important precursor to innovation (Junkunc, 2007), therefore, we included two additional questions, 3) whether the company can acquire knowledge about new products/services, and 4) whether the company can exploit this knowledge.

In addition, *existing* unique products/services in the company's portfolio are investigated. In order for innovation to occur, entrepreneurs should be forward-thinking and exhibit opportunity recognition and exploitation skills and thus three items that measured the willingness of firms to take on new opportunities and also their willingness to adjust their business as necessary in order to exploit them. The proactive nature of firms to utilize opportunities was measured by action and decision-making shown in uncertain situations.

Innovation throughout an organization was tested with regard to general business practices, such as whether firms search for new practices, are among the first to implement innovative processes and practices, and allocate resources to new and promising areas. The importance of innovative marketing practices has been recognized by several scholars (Gerald Hills et al).

Creativity is a key to innovative capacity, therefore overall firm creativity and innovation in accomplishing company goals was included. Unlike many previous studies, this research positions innovation as a dependent variable, and therefore examines factors that may influence innovativeness.

#### B. Performance

Frequently used measures of performance criteria include profitability, ROI, number of employees, revenues. Each measure has strengths and weaknesses (Brush and Wanderwerf, 1992; McGee et al., 1995). The acknowledged differences between industries in the sample require that characteristics of the industry in which the venture operates be taken into consideration when measuring performance (Sandberg & Hofer, 1987). Therefore, subjective performance measures were utilized, indicating the perceptions of performance goals with regard to sales, growth, compared to competitors and an overall evaluation of performance. This follows the Miles and Snow (1978) Typology of Strategy to investigate the degree to which firms engage in strategies to grow and expand.

#### C. Growth Intentions

Innovation and growth have been linked in several studies, through creating new markets and opportunities and increasing consumer willingness to pay more for added product benefits and features (Cho & Pucik, 2005; Cohen & Klepper, 1996). Future intentions towards growth are measured pertaining to increased production, opening new locations and introducing new products/services.

#### IV. RESULTS

The firms' characteristics are shown in Tables 1, 2 and 3. Retail is best represented in both samples (32.3 percent for the Australian sample and 40.6 percent for the US sample). All businesses are under 50 employees, with a majority in both samples of fewer than 10 employees. Most businesses are relatively young. Only 9 of them are over 20 years old in the Australian sample and 19 in the US sample.

TABLE 1 FIRM CHARACTERISTICS – INDUSTRY TYPE

Type of Business	Primary NAIC Code	Businesses participating in the study			
		Australia		US	
		Number	%	Number	%
Agriculture	1	6	3.0	7	3.1
Construction	2	19	9.5	16	7.0
Manufacturing	3	31	15.4	9	3.9
Wholesale	4	11	5.5	6	2.6
Retail	5	65	32.3	93	40.6
Transportation	6	1	0.5	1	0.4
Information	7	16	8.0	5	2.2
Finance & Insurance	8	2	1.0	23	10.0
Real Estate	9	4	2.0	9	3.9
Professional & Technical	10	26	12.9	21	9.2
Health & Social	11	2	1.0	6	2.6
Arts & Entertainment	12	8	4.0	4	1.7
Accommodation & Food	13	9	4.5	22	9.6
Other Services	14	1	0.5	7	3.1
Total		201	100	229	100

TABLE 2 FIRM CHARACTERISTICS – SIZE (NUMBER OF EMPLOYEES)

Characteristic	Range	Australian Businesses	U.S. Businesses
		% (n = 201)	% (n = 229)
Number of Employees	Less than 10	113	193
	From 10 to 20	52	29
	From 21 to 50	21	6
	More than 50	15	1

TABLE 3 FIRM CHARACTERISTICS – AGE (IN YEARS)

Characteristic	Range	Australian Businesses	U.S. Businesses
		% (n = 201)	% (n = 229)
Number of Years in Business	1 to 3 years	33	49
	From 4 to 6	76	49
	From 7 to 9	29	31
	From 10 to 15	41	55
	From 15 to 20	13	26
	Over 20 years	9	19

The regression results are presented in Table 4. Performance represents a strong predictor for innovation for both the American and the Australian samples. Beta = .487 (with significance at the .01 percent level) for the US sample, and even stronger (.696 at .01 percent) for the Australian sample. However, for growth intent the results are mixed. The US sample

shows a beta of .225 (at .01 percent) while for the Australian sample it is not significant. We used age and size as control variables. Age proved to be not significant for both samples. However, size was significant for the Australian sample ( $p < .10$ ).

TABLE 4 REGRESSION RESULTS: AUSTRALIA AND U.S. SAMPLES DEPENDENT VARIABLE: INNOVATION

Variables	Australian Sample		U.S. Sample	
	$\beta$	$t$	$\beta$	$t$
Age	.073	1.390	.044	.803
Size	-.102	-2.893*	-.020	-.372
Growth Intentions	-.061	-1.104	.225	3.544***
Past Performance	.696	12.655***	.487	7.761***
Adj. $R^2$	.466		.398	
F value	43.757***		38.722***	

\* $p < .10$ , \*\* $p < .05$ , \*\*\* $p < .01$

Separate regressions for growth intent and performance show significant results. The US sample has a beta for growth intent of .388 ( $t=8.81$ , at less than .01 percent). The beta for performance is .514 ( $t=11.68$ , at less than .01 percent). However, the Australian sample shows smaller betas and less significant. The beta for growth intent is only 0.102 ( $t=2.001$ , at 0.5 percent) while performance gives a beta of .323 at 0.01 percent. While Hypothesis 2 is supported by both samples, Hypothesis 1 is supported only by the US results.

## V. DISCUSSION AND CONCLUSIONS

Understanding how SMEs achieve high performance in order to impact society has significant implications for SME owners/managers, SME employees and the economies in which the SME operates. High levels of innovation can facilitate firm growth and subsequent profit performance, which in turn can yield employment gains and contribute to the general economic health of a state, region or nation [12]. Similarly, low performance could lead to firm failure or lack of growth and the negative economic effects of this scenario. Due to the lack of resources usually common within the small firm environment, a stronger understanding of the factors contributing to their innovative performance is beneficial [1].

Why is past performance a better indicator of firm innovation than intentions?

Past performance is a stronger indicator of firm innovation as results are proven. That is, the relationship between the firm's performance and innovation has already been established through the company's historical performance, and thus the future performance can be more readily predicted on quantifiable results. Intentions whether growth-oriented or otherwise can by its nature be altered quickly by either internal or external events in the firm environment.

Why are OZ Performance results stronger than US Performance with regard to innovation?

Shane (1994) found that national culture influences the way in which managers champion innovation. Additional support for the proposition that national culture influences the way firms' exploit entrepreneurial orientation has been noted by Knight (1997). Busenitz & Lau (1996) described how national culture influences a tendency towards new venture creation [4]. However, as Australia and the US are similar in nature [7], there is little to be determined from the results of this study.

Strong support for performance and innovation in both nations is consistent with research suggesting that the direct impact of national culture is not evident as entrepreneurs share similar sets of values regardless of culture (McGrath, McMillan & Scheinberg, 1992). Thus as to the question of whether the findings are specific to Australia and the US (or western countries in general) or perhaps more universal is debateable.

The SME sector is an important contributor to both the US and global economies. SME activity makes a significant contribution to economic and social wellbeing as often new, small firms will generate jobs, enhance productivity, play an important role in innovation and provide alternative employment opportunities for many subsets of the adult population [2]. Innovation in small firms is essential for the continued dynamism of modern economies (Klapper, Laeven & Rajan, 2007). Growth intentions and innovation can contribute to SME outcomes suggesting that it is important to understand the relationships between these two factors. Innovation in the SME sector has important implications for policy-makers, business analysts and other users interested in the growth and performance of SMEs.

Economies of most nations are largely composed of small- and medium-sized enterprises (SMEs) and their ability to innovate has been viewed as a critical element in economic growth and renewal (Wolff & Pett, 2006; Verhees & Meulenbergh, 2004). This has led many nations to policy-making that supports innovation in SMEs (Jones & Tilley, 2003). Increasing our understanding of what contributes to innovation can only lead to more enlightened economic planning and policy.

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