

Size, strategic, and market orientation affects on innovation

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Received 1 January 2007; received in revised form 1 July 2007; accepted 15 August 2007

Abstract

Based on a random sample of 500 South Yorkshire non-hi-tech manufacturing small, medium-sized enterprises (SMEs) the quantitative findings support the hypothesis that size, strategic, and market orientation associate with innovation. The results show that prospectors are medium-sized companies and small companies, defenders. Prospectors are more innovative and market-oriented than defenders. The findings reveal that to succeed in an intense competitive environment, non-hi-tech manufacturing SMEs have to be proactive toward market opportunities, receptive to innovation and take the lead in new product innovation. However, their weaknesses include a lack of flexibility, a partial open culture and an organizational structure that impedes sustained innovation. This study addresses a gap in the literature, by linking innovation to the strategic orientation of the firm instead of examining firms' specific characteristics or the effects of external environment and structural factors. The research focuses on non-hi-tech manufacturing SMEs.

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Keywords: Innovation; Strategic orientation; Market orientation; Size; Non-high-tech manufacturing SMEs

1. Introduction

Companies worldwide of different sizes and sectors are operating in an increasingly dynamic, complex and unpredictable environment. This increase suggests that many firms seek new ways of conducting their business through some kind of innovation to make a profit and stay ahead of the competition. In particular, intense global competition, rapid technology changes and product variety proliferation are part of the characteristics of the new manufacturing environment (Pun, 2004). While large manufacturing companies can often invest in new technologies and equipment, providing world-class skills, training to their workforce and winning new markets this is hardly the case for small companies (Laforet and Tann, 2006, p. 364).

Nevertheless, research shows that new small firms are continually entering the market with new ideas, products and processes (De Jong and Marsili, 2006). A number of British small, medium-size manufacturing enterprises (SMMs) have survived and thrived through the release of innovative new products (Laforet and Tann, 2006). Thus the contention is that small firms that innovate successfully would increase their

chances of survival and growth (Cefis and Marsili, 2003; De Jong et al., 2004). However, successful innovation is a complex task for a SME that does not have the means and know-how to invest in R&D activities (Avermaete et al., 2003) or cannot always convert research and development into effective innovation. Furthermore, O'Regan et al. (2006) note the many difficulties SMEs have are often organization-specific.

Whilst researchers often examine innovation in the context of large firms, they overlook innovation within small firms. The innovation literature in SMEs remains fragmented and usually concentrates on single case studies or qualitative interviews with managers. Moreover, the work in this area focuses mainly on firm-specific characteristic on innovation, the effect of external environment and structural factors, which are more appropriate for large firms instead of the strategic and market orientation of the firm, including factors such as closeness to customers, flexibility which are advantageous to SMEs (Salavou et al., 2004). Researchers also pay little attention to sectors or industries when studying innovation factors in SMEs (De Jong and Marsili, 2006; Laforet and Tann, 2006).

This paper examines the relationship between size, strategic, market orientation and innovation in non-hi-tech SMMs. This is because non-high-tech SMMs face intense global competition, as mentioned above. Innovation is fundamental to these

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companies in order to survive and maintain their competitiveness in the marketplace (Laforet and Tann, 2006). The paper starts with a discussion of factors determining innovation, outlines a review of literature, from which hypotheses are drawn and tested on a random sample of 500 South Yorkshire SMMEs. Hypotheses are then compared with findings and conclusions drawn.

2. Size and innovation

Many studies examine the issue of innovation relating to company size with inconclusive findings. Schumpeter (1942) hypothesizes that large firms have an advantage over small companies as their financial might allow them to be the most capable innovators. Ettlé and Rubenstein (1987) find the type of innovation moderates the size relationship. They argue that large companies can access to key resources and would be able to take on more radical innovations, which often require additional funds for technical work, capital investment for plant and equipment as well as marketing and promotions compared to small companies.

Although large companies have sufficient resources for investing in innovation, they suffer from a variety of issues that may make them less innovative. For example, larger firms tend to create a bureaucracy that is un-favourable to an atmosphere encouraging creativity (Kamien and Schwartz, 1975), and tend to be less flexible than smaller firms (Cohen and Klepper, 1996).

Extensive research carried out to test Schumpeter's hypothesis (McNulty, 1974; Lunn, 1982; Cohen and Mowery, 1987; Amato et al., 1981) have mixed results (Acs and Audretsch, 1987; Acs and Audretsch, 1991; Cohen and Klepper, 1996). Kamien and Schwartz (1975) claim that there is little support for the idea that innovation increases with firm size, with the notable exception of the chemical industry. Rothwell and Zegveld (1986) further examine firm size and innovation across several industries, reject the idea that innovation is related to size but with the industry cycle, which varies with technology, markets and government policy. More recent research suggests that small and large firms are more innovative than those of intermediate size (Bertschek and Entorf, 1996). White et al. (1988) also suggest that there are advantages with the smallest firms (<20 employees) and the larger firms (50+ employees) but not the intermediate group (20–49 employees), which lack the best of either world. The smallest firms have the benefit of individualism while the larger firms the benefit of more resources and systems.

Others have concluded that large firms have an advantage in markets characterized by imperfect competition, while small firms have an advantage in markets characterized by pure competition (Acs and Audretsch, 1987). Finally, large firms in low-tech industries have an advantage over small firms, but no difference exists in high-tech industries (Acs and Audretsch, 1991). Current research (Wagner and Hansen, 2005) on low-tech industry find that firm size impacts on innovation type.

This study concerns with non-high-tech manufacturing SMEs. Based on Audretsch and Acs's, Wagner and Hansen's

researches, it is hypothesised that size has an effect on innovation due to a lack of financial and human resources. A small firm (5–20 employees) would have more difficulty in finding the financial support for technical work, human resource, plant and equipment, marketing and promotions when compared to medium-sized firms (21–201 employees).

H₁. Company size relates to innovation.

H_{1a}. Medium-sized firms are more innovative than small firms.

3. Size and strategic orientation

According to O'Regan and Ghobadian's (2005) adaptation of Miles and Snow's classification of company strategic orientation, a defender type company will compete on the basis of price, quality, delivery or service and operate efficiency based on a strong emphasize on maintaining existing markets. It follows that a defender type company will tend to be a reactor, thus reacting to a market place based on observing the experiences of others and a preference for the short-term. While a prospector type company, will continually seek opportunities and use flexibility to adapt and respond rapidly and creatively to the changing external environment. This type of company will tend to be an analyser focusing on efficient and increased production following a full analysis of directional strategy and how to compete. Although the above authors distinguish between a reactor and a prospector, this study treats a defender analogous to a reactor and a prospector analogous to an analyser (see explanation in the Method section). In the literature, strategic orientation also takes from the corporate-wide perspective. In this study, the author believes small firms will focus on maintaining existing markets and competing on price and quality rather than being at the forefront of innovation. Their objective is to have reasonable returns and concentrate on what they do well thus, small firms will take on the role of a defender and medium-sized firms will act more like a prospector.

H₂. Strategic orientation relates to company size.

H_{2a}. Prospectors will be medium-sized companies and defenders, will be small size companies.

4. Size and market orientation

Liu (1995) shows that medium-sized firms adopted a market orientation to a lesser extent than large and extra-large firms; While he also finds no difference in the level of market orientation between large and extra-large companies. Although no studies so far compare market orientation between medium-sized and small firms, small business researchers contend that internal organisational factors and external forces exert a considerable influence on SME business performance to the extent that the adoption of customer orientation is minimal (Appiah-Adu and Singh, 1998). However, Sexton and Van Auken (1985) argue that since many SMEs are noted for their lack of long range focus, strategic orientation and systematic decision-making, customer orientation could be a critical determinant of performance. Appiah-Adu further argue that for smaller firms,

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