Environmental uncertainty and entrepreneurial orientation:
a two country study for small service firms

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ABSTRACT

The relationship between aspects of environmental uncertainty, such as dynamism and hostility, and entrepreneurial orientation (EO) has been well established in the literature. Drawing predominantly on perceptions of uncertainty, there is general consensus that dynamism and hostility nurtures EO. This study uses data from small service firms in New Zealand (NZ) and South Africa (SA) to structurally analyse and compare the nature of this relationship. The findings contribute to the current understanding of the environmental uncertainty and EO relationship as follows. First, although the mean levels for EO are similar between firms in the more dynamic NZ environment and the more hostile SA environment, the factors that nurture such an EO differ significantly between countries. More specifically, EO in small service firms is supported by higher levels of environmental hostility in NZ and by higher levels of internal strategy processes in SA. Second, it contributes to research methodology by using and confirming the use of country of origin as an objective measure of environmental uncertainty.
INTRODUCTION

Dynamic environments are often considered as supportive to business performance (Dess, Lumpkin & Covin, 1997; Zahra, 1991), largely because they stimulate entrepreneurship and innovation (Khandwalla, 1987; Miller, 1983). Dynamic environments are those environments that are opportunity-rich, but unstable (Hart & Banbury, 1994; Zahra, 1993), therefore they do not only increase opportunities for entrepreneurial behaviours, but also encourage firms to take advantage of those opportunities in order to be competitive. With the exception of the early part of this century, the world economy has experienced such a dynamic environment for more than 15 years, leading to unprecedented economic development and growth (International Monetary Fund, 2007). However, in the last year the business environment has changed from dynamic to hostile, becoming complex and changing in unpredictable ways (Hart & Banbury, 1994). Furthermore, although governments and central banks are implementing a raft of fiscal and monetary measures, most actions are judged to be only short term solutions, and the stimulation of the economy through innovation and entrepreneurial development is considered as one of the few long term measures which are likely to lead to economic recovery1.

Increased entrepreneurial outputs or innovation by existing firms is one means of stimulating recovery and growth, the other being new business creation. Existing firms are also encouraged to become more entrepreneurial as a means of enhancing their international competitiveness, differentiating themselves and creating a competitive advantage. In other words, firms are urged to increase their entrepreneurial orientation (Drucker 2007; Hitt & Ireland, 2000; Rigby, 2003; Zahra, 2007). Previous research has determined that the relationship between EO and performance is moderated by organisational and environmental factors (Li, Zhang & Chan, 2005), but the exact nature of the relationship between environmental uncertainty and EO remains unclear. Although some studies have made cross-country comparisons between the general levels of EO between firms (Antoncic & Hisrich, 2001; Weaver, Dickson, Marino et al. 2001), these studies are limited, inviting the criticism that entrepreneurial theory has a developed country bias and that entrepreneurship manifests differently in developed versus developing country contexts (Antoncic & Hisrich, 2001; Stein, 2002; Sternberg & Wennekers, 2005). In addition, these studies focus mostly on EO, rather than the effects of the business environments on EO in the different countries. These arguments lead to the identification of two problems in the literature; namely inconsistent findings regarding the

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1 See call by several business leaders, including IBM's Samuel Palmisano (Lohr, 2008) and politicians, including Barak Obama and Ian Gibson (Gibson, 2009).
influence of hostile verses dynamic environments on the EO of firms; and a host of single environment studies which only draw on subjective perceptions of uncertainty without including a more objective measure.

This paper investigates the effects of environmental uncertainty on the entrepreneurial orientation (EO) of small service firms. These firms include firms as varied as the providers of professional services such as medical, accounting and information technology consultants, to the providers of personal services such as house cleaning. Small service firms are particularly suitable for this study, with recognition that they often operate in volatile environments (McGee & Sawyerr, 2003) and are pronged to entrepreneurial behaviours (Glancey, Greig & Pettigrew, 1998). This paper therefore compares how firms in hostile or dynamic environments differ under conditions of uncertainty by using two, rather than one measure of uncertainty. Managerial perceptions of environmental uncertainly, as used in previous studies (Khandwalla, 1976/77; Zahra, 1991), are used, while two countries, one recognised as having a hostile environment and one as having a dynamic environment, are considered. The paper starts by reviewing the literature on environmental uncertainty, EO, entrepreneurial strategy-making and organic structure using this basis to argue in favour of a number of hypotheses and a research model. The data used to test this model, employing structural equation modelling, are obtained from samples of small service firms in New Zealand (NZ) and South African (SA). Finally a discussion of results and implications are presented.

BACKGROUND AND HYPOTHESES

ENTREPRENEURIAL ORIENTATION (EO)

Entrepreneurial orientation (EO) refers to the strategic stance of a firm and is often linked to the processes, practices and decision-making activities that facilitate the pursuit and exploitation of opportunities (Lumpkin & Dess, 1996) such as strategy-making, differentiation strategies and organisational structure. EO can be used to assess the attitude of managers towards environmental opportunities and challenges by examining the relative innovative, risk-taking and proactive nature of their behaviours and attitudes. Many scholars hold the opinion that the pursuit of creative or novel solutions, culminating in new products, services or processes, distinguishes entrepreneurial firms from non-entrepreneurial firms (Antonicic & Hisrich, 2001; Zahra & Garvis, 2000; Morris, 1998; Covin & Slevin, 1989; Miller & Friesen, 1983), reflecting the firm-level innovativeness. Inherent in the pursuit of new initiatives is the propensity to take risks. Creative actions involve risk, since outcomes are unknown and applying this type of behaviour in a business context requires the courage to commit resources to new projects with ambiguous
outcomes (Van Gelderen et al, 2000; Dess et al, 1997). Morris and Kuratko (2002) argue that entrepreneurial firms mitigate these risks by acquiring unique knowledge and/or competencies.

Additional to innovativeness and risk-taking orientations, an EO is also reflected in the degree to which managers embrace change, pursue opportunities and react in a competitive aggressive manner towards rivals, sometimes described as proactiveness (Kreiser, Marino & Weaver, 2002; Morris, 1998; Miller & Friesen, 1983; Covin & Slevin, 1989). Although Lumpkin and Dess (1996) argue that five, not three, dimensions should be used to measure EO, adding autonomy and competitive aggressiveness, this paper follows the approach of other authors (Kreiser, Marino & Weaver 2002; Morris, Allen, Schindehutte & Avila 2006), viewing autonomy as part of an organic organisational structure, facilitating entrepreneurship within a firm and competitive aggressiveness as part of the proactiveness dimension. The entrepreneurial orientation of a firm is not seen as a discrete variable, but rather a continuous, uni-dimensional variable (Miller, 1983), with EO varying in terms of its intensity. As a strategic posture, EO is influenced by a complex set of organisational factors, such as strategy-making processes, organic organisational structures, and perceptions of the external environment. It has been assessed as both a dependent (Voss, Voss & Moorman, 2005; Zahra, 1991) and an independent variable (Zahra & Bogner, 2000; Zahra & Garvis, 2000).

ENVIRONMENTAL UNCERTAINTY

Environmental uncertainty is viewed by both strategy and entrepreneurship scholars as an important contextual factor, influencing or moderating the relationship between strategic processes, decisions and the EO of firms with performance (Zahra & Bogner, 2000; Hamel & Prahalad, 1994; Miller, Dröge & Toulouse, 1998; Covin & Slevin, 1989). Strategic management literature urges firms to scan the external environment to identify opportunities and threats and formulate appropriate strategies (Zahra & Bogner, 2000; Covin, Slevin & Heeley, 1999; Li & Simerly, 1998; Mintzberg, 1990 & Miller, 1986). More specifically, Van Gelderen, Frese and Thurik (2000) argue that without environmental uncertainty, entrepreneurship would not be necessary.

Environmental uncertainty reflects the ambiguity of multiple possible outcomes should specific entrepreneurial actions be taken, which Miller (1983, p. 773) formally described as “the degree of change and unpredictability of the market environment”. In uncertain environments where radical, frequent changes occur, managers may experience difficulty in making decisions since information is unevenly distributed and current circumstances, for example regulations or consumer tastes, can change frequently (Li, et al. 2005). While some
researchers have investigated the influence of environmental uncertainty on firm processes or performance (DeSarbo, Di Benedetto, Song & Sinha, 2005; Li et al. 2005; Miller, et al. 1988; Van Gelderen et al. 2000), others have pointed out that environmental uncertainty is a multi-dimensional concept which is characterised by levels of dynamism, hostility and heterogeneity (Covin & Slevin, 1989; Keats & Hitt, 1988; Papadakis, Lioukas & Chambers, 1998; Zahra & Bogner, 2000).

Business environments differ between countries and between developed, developing and transitional economies and measures to assess environmental uncertainty also differ. Measures of environmental uncertainty can be divided into two main schools of thought. The first school of thought assesses environmental uncertainty by using independent, "objective" measures to assess the changes taking place, such as Zahra and Covin's (1995) hostility index which is calculated from secondary data. The second school of thought is of the opinion that the business environment cannot be seen as an “objective fact”, but rather as a perception (Penrose, 1995, p. xii), since managers or entrepreneurs take decisions based on their own personal observation (perception) of opportunities and threats in the environment. Miller (1993, p. 128) concurs and argues that managers enact their environments by trying to simplify complex environments and “superimpose” their worldviews, perceptions and interests and define environments from that perspective. Enacting an environment involves observing the environment as a “projection of one’s own identity or self-image” and therefore “seeing what one wants to see,” which may not be close to objective reality. For example, a firm may decide to focus on customers who require state-of-the-art technologies and may therefore perceive these changes in the environment more acutely compared to a firm which focuses on late adopters of technologies. Therefore both country-specific conditions and managerial perceptions of the enacted environment may influence entrepreneurial strategy, structure and EO. In this study, both the influence of country-specific dynamism and hostility (argued to be objective measures of uncertainty), and perceived dynamism and hostility on EO is investigated.

**Dynamic environments**

Dynamism refers to the perceived instability of a firm's environment resulting from the rate of change (Dess & Lumpkin, 2001), unpredictability of change (Dess & Beard, 1984) and persistence of change (Zahra, 1993). These changes result from variations in competitor activity, changes in consumer tastes and preferences, and technological developments (Zahra & Bogner, 2000). Dynamism further diminishes managers’ ability to forecast future scenarios and events and their subsequent influence on the organisation (Dess & Lumpkin, 2001). However,
these changes open new windows of opportunity for firms (Antoncic & Hisrich, 2001) to react with pro-active, novel strategies and pioneering behaviour (Miller, 1983). Several studies indicate a relationship between increased dynamism in the external environment and EO (Covin & Slevin, 1991; Khandwalla, 1987; Löfsten & Lindelöf, 2005; Miller, Burke & Glick, 1998; Zahra, 1995, 1993, 1991). Furthermore, dynamic environments provide the firm with opportunities and resources for innovation, and should lead to firm profitability, regardless of the firm’s strategy (Covin & Slevin, 1989).

The earlier work of Miller et al. (1998) link uncertain, dynamic and unpredictable environments to entrepreneurial behaviour by finding that in uncertain environments firms need to deliver innovation in order to compete and serve customer needs, and that in turn this type of entrepreneurial behaviour raises levels of environmental uncertainty and competition. Opportunities emerge from the dynamism of an industry where macro-environmental changes bring about new developments (Zahra, 1991). Firms can exploit these opportunities using entrepreneurial strategies such as new product development (sustained regeneration), innovation, self-renewal or corporate venturing strategies (Kreiser, et al. 2002; Zahra, 1993). These works almost exclusively uses perceptions of environmental uncertainty in their analysis and findings, indicating that the perception of dynamism in environments will spur owner/managers of firms to react with entrepreneurial behaviours and increases in EO. This can be illustrated in small service firms. For example in professional firms owners/managers are able to identify and take advantage of opportunities resulting from dynamic environments because of their professional networks. For the providers of personal services, relationships with clients are often close, thereby ensuring that owner/managers can quickly react to opportunities highlighted by customers. It can therefore be hypothesised that:

H1 Perceived dynamic environments will have a positive effect on the strength of EO in a firm

Hostile environments

Hostile environments refer to unfavourable business conditions such as competitive rivalry for opportunities, resources or customers as well as strict regulatory pressures (Zahra & Bogner, 2000). In hostile environments firms experience a lack of resources, increasing the perceived threats posed by the environment to the firm (Dess & Beard, 1984; Löfsten & Lindelöf, 2005; Zahra, 1993). To ensure that firms reach growth or survival goals, Dess and Lumpkin (2001) remark that firms need to commit limited resources to managing threats in unfavourable environments.
The literature highlights two main sources of hostility: competitive rivalry and unfavourable changes in the environment (Antoncic & Hisrich, 2001; Dess & Beard, 1984; Zahra & Garvis, 2000). Competitive rivalry reflects the nature of competitive dynamics within an industry (Porter, 1980), since too many competitors increases rivalry, leading to scarcity of resources and market opportunities. Unfavourable change reflects the extent to which radical industry changes, regulatory burdens, market uncertainties and loss of investor confidence pose perceived threats to a firm’s goals and strategies. Firms’ responses to perceived environmental hostility differ. Some firms may be motivated to consider bold strategic actions to outperform market expectations (Morrow, Sirmon, Hitt & Holcomb, 2007), such as increased marketing differentiation (DeSarbo et al. 2000) or diversification of business activities or a focus on additional market segments (Antoncic & Hisrich, 2001; Zahra & Covin, 1995), in short increasing the EO of firms, while others may cut spending through staff cuts, and postponed investment and innovation.

Zahra and Garvis (2000) find that perceived hostility moderates the relationship between international corporate entrepreneurship and firm performance, however, should international environmental conditions display excessive environmental hostility beyond a certain point, highly entrepreneurial firms experience diminishing returns on their assets. Furthermore, Zahra and Covin (1995) find that higher levels of firm-entrepreneurial behaviour are a significantly better predictor of financial performance among firms in hostile environments than among firms in benign environments. Additionally they show that the impact of hostility on the corporate entrepreneurship-performance relationship grew modestly over time. Zahra and Bogner (2000) find that innovative products show a significant negative interaction with price hostility. Furthermore, the use intellectual capital protection (e.g. copyrights, patents) is not associated with improved performance in dynamic environments, since it generally increased the competitive rivalry among firms, thereby increasing levels of hostility. These authors recommend that software firms should pursue a formal technology strategy that matches their external environments to achieve increased EO and performance. These results can be summarised as indicating a negative influence of environmental hostility on EO.

However, a number of studies have also shown that firms act in entrepreneurial ways to overcome threats posed by hostile environments (Covin & Slevin, 1989; Miller, 1983; Zahra, 1993; Zahra & Covin, 1995; Zahra & Garvis, 2000). A study by Khandwalla (1987) of small firms show that an entrepreneurial management style is more appropriate in hostile environments, while Covin and Slevin (1989) find that small firms with higher entrepreneurial orientations outperform their smaller counterparts with lower entrepreneurial orientations in hostile environments. In addition, Covin, et al. (1999) find that pioneering firms are able to excel within hostile environments by breaking out
of the dominant price-based mode of competition and grow in spite of charging high prices. The ability of innovative pioneers in hostile environments is facilitated by offering limited market offerings to “fit” with market needs. Small service firms specifically face intense competitive rivalry and have limited means to differentiate themselves within a hostile environment. Small service firms may react to environmental hostility by changing their marketing practices frequently, for example delivering innovative services, or to cut costs through innovative processes. Therefore, in this paper it is argued that small firms which perceive threats from a hostile environment are more likely to react with entrepreneurial behaviours, therefore:

H2 Perceived hostile environments will have a positive effect on the strength of EO in a firm

Comparing country environments: New Zealand vs. South Africa

The preceding results suggest that small firms will react to perceived environmental uncertainty with entrepreneurial behaviours. Perceptions of uncertainty are subjective, which means that under such conditions small firms will attempt to enact their environment. It can, however, be argued that under objective conditions of especially hostility, such behaviours may be harder to maintain. This section argues why two countries were selected as representative of objective dynamic and hostile environments and then proposes hypotheses regarding the relationship between objective uncertainty and EO for each of these countries.

Research undertaken in different countries often renders contradictory results. This is because business environments differ between countries and between developed, developing and transitional economies. For example, Van Gelderen et al. (2000) find that entrepreneurial processes are more likely in dynamic environments and less likely in hostile environments in a study of Dutch small business owners, while Miller (1982, 1988) finds in a study of Canadian entrepreneurial firms that these processes can lead to success in small firms in the earlier years within a dynamic environment. Nevertheless Papadakis et al. (1998) in their study of 70 decision-makers in 38 manufacturing firms in Greece find no statistically significant relationship between environmental dimensions and the type of strategic decision-making processes or posture of these firms. Similarly Antoncic and Hisrich (2001) examine and compare firm level entrepreneurial activities in Slovenia and the United States. They find that environmental factors had different effects in Slovenia, compared to the United States. The mediating, moderating or other effects of environmental factors, such as perceived dynamism and hostility, on firm strategy, performance and internal organisation seem to differ in different contexts. It is therefore clear that country context and the predominant cultural orientations of individuals within the firm (Lee & Patterson, 2000) can influence the findings
regarding the relationships between environmental uncertainty and EO. In this study we argue that New Zealand firms operate in a high-income country context, characterised by dynamism, while South African firms operate in a middle-income country context, characterised by hostility.

New Zealand is considered as a high-income country, with a GDP per capita of US$25 640 annually. GDP represents a measure of national productivity, which is strongly linked to a nation's standard of living (International Bank for Reconstruction and Development; The World Bank, 2005). As a high-income country New Zealand faces competitiveness challenges such as increasing its capacity for innovation and entrepreneurship. This argument is supported by the Business Competitiveness Index (BCI) of the World Economic Forum (Porter, Ketels & Delgado, 2007). According to the Ministry of Economic Development (2003) in New Zealand, the focus over a period of 20 years has been towards establishing an open, modern, stable and deregulated economy. Monetary policy aims to ensure price stability and targets a yearly inflation rate of between zero and three per cent. At the time that the data were gathered, the growth rate in New Zealand was 4.5 per cent (Statistics New Zealand, 2004). In New Zealand, small firms have increased in significance because of the downsizing of firms that want to compete in international markets, less job security, and people choosing to engage in small business at retirement or as a lifestyle choice (Ministry of Commerce, 2000). Therefore it is argued that New Zealand firms operate in a dynamic environment characterised by few regulations and a stable economy.

South Africa, on the other hand, is classified as a middle-income country, with a GDP per capita of US$12 580 per annum. Firms in South Africa face competitive challenges such as increasing research and development spending by competing firms. South Africa’s GDP per capita does not really reflect the dualistic nature of its economy (Urban, 2007). While on the one hand South Africa possesses first-world infrastructure and world-class competitive companies such as South African Breweries, Old Mutual, Liberty Life and others (Mbeki, 2002); on the other hand there is also the second economy or informal economy, which has much in common with lower-income countries (Ahwireng-Obeng & Piarray, 1999). In this study only first-world South African firms were interviewed, in other words those small service firms comparable to New Zealand service firms in order to eliminate bias from this source.

While globalisation has increased the competitive challenges for firms in countries across the world, South African firms face the added challenge of internal transformation of its economy. Pressure from the government to transform is felt especially through the regulatory restrictions, such as harsh labour legislation, black economic empowerment pressures (BEE), employment equity (Mahabane, 2005, p. 2), the National Credit Act (Neves &
Leonard, 2007) and various other legislative reforms. Ahwireng-Obeng and Piarray (1999) argue that the failure in the SA economy is at the institutional level. They contend that the political transition has generated policy risks and controversial labour, patent and competitive legislation together with new taxes and levies. The convergence of institutional risks linked to threats from crime, corruption, and dysfunctional government create a hostile environment in which South African firms, who are obliged to operate and find ways to manage environmental hostility and complexity, use strategies such as entrepreneurial initiatives. Elliot and Boshoff (2008) confirm these observations and point out that small firms in South Africa operate in a hostile environment characterised by constant change and well-resourced large competitors (Ntsika, 2002; Ntsika, 1998). Nevertheless, firms can overcome these threats by adopting an entrepreneurial orientation (Lauder, Boocock and Presley 1994).

The Business Competitive Index of the World Bank is also useful in comparing the two countries since it provides comparative ratings of business conditions, firm operations and strategy rankings, which are similar to constructs examined in this study, namely firm structures (e.g. organicness), strategies followed and managerial perceptions of the business environment. Comparing company operations and strategy ranking, New Zealand and South African firms obtain comparable scores, as shown in Table 1, with New Zealand ranking 24th and South Africa 26th out of 123 countries in 2006. Company operations and strategy refer to aspects such as the nature of a company’s competitive advantage, capacity for innovation, degree of customer orientation and others factors. However, when comparing the quality of the business environment supporting competitiveness of firms, the differences between the business environments of the two countries become apparent. Table 1 illustrates that New Zealand has a more supportive business environment, ranking 16th in 2006, compared to the quality of the South African business environment ranked 33rd out of 123 countries. The quality of the business environment may be understood in terms of four interrelated areas: the quality of input conditions, the context for firm strategy and rivalry, the quality of local demand conditions, and the presence of related and supporting industries.

Table 1: A comparison of New Zealand and South Africa’s BCI rankings

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<th>Company operations and strategy ranking</th>
<th>Quality of business environment</th>
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<tr>
<td>New Zealand</td>
<td>24</td>
<td>22</td>
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<tr>
<td>South Africa</td>
<td>26</td>
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Additionally, the World Bank and International Finance Corporation annually compile a report (Doing Business, 2005), which investigates regulations influencing business activity. This set of quantitative indicators is then used to compare 145 countries in terms of ease in regard to starting a business, dealing with licences, hiring and firing employees, registering property, gaining access to finance, protecting investors, enforcing contracts and closing a business. Out of all the countries on the list New Zealand has consistently been ranked year-after-year in the top 5 countries of being easy to do business in. In contrast South Africa has been rated between positions 27 to 32. These results further strengthen the argument that South African firms operate in a hostile environment while New Zealand firms operate in a dynamic environment. Therefore, it is expected that dynamism in the competitive environment of New Zealand will strengthen the effect of environmental uncertainty on EO for New Zealand firms. However, the competitive environment of South Africa is less supportive so hostility will hinder a similar relationship for South African firms. It is therefore proposed that:

H3 The relationship between environmental uncertainty (dynamism and hostility) and EO will be stronger in NZ firms than in South African firms

FIRM-RELATED STRATEGY-MAKING AND STRUCTURES

A number of factors have been identified in the literature as supportive of an EO. In this paper two of these factors, namely strategy-making process and organisational structure are used to further explain the development of an EO in small firms. Entrepreneurial strategy-making processes are those processes identified in the literature as necessary to develop an EO (Miller, 1987; Verreyne & Meyer, 2007b), while organic structures are widely regarded as important in nurturing EO in small firms. These factors are discussed next.

Entrepreneurial strategy-making process (ESM)

Strategy-making process represents a distinct body of knowledge within the strategic management field of study which examines the processes, activities and decision-making styles which top managers and/or other organisational members use to formulate strategies to implement their vision, mission and goals. These processes and activities were traditionally viewed as rational, formal and having a step-wise sequence (Andrews, 1971; Ansoff, 1965), but nowadays it is acknowledged that strategy-making processes could have an informal, emergent nature, depending on the circumstances and context of the firm (Dess, et al., 1997; Hart, 1991, 1992), especially in small firms (Verreyne & Meyer, 2007a). Mintzberg (1973) identifies entrepreneurial processes, incorporating opportunity
seeking, risk taking and decisive action catalysed by a strong leader and suggests that this process is suitable for small and/or new firms where the owner/manager often takes decision making responsibility. Dess, et al. (1997, p. 680) define entrepreneurial strategy-making as a discrete firm level process that exhibits bold, directive, opportunity-seeking style characteristics, in combination with risk taking and experimentation attributes. This process has therefore several characteristics which are supportive of entrepreneurial behaviours and have been found to support the development of EO in small firms (Verreyyne & Meyer, 2007b). In small service firms it is proposed that this will occur through the consistent opportunity seeking activities and innovations in services and processes that are a natural part of ESM, therefore:

H4 ESM will have a positive influence on EO

Organic organisational structures

The venture life cycle concept (Lester, Parrell & Carraher, 2003) indicates that organisational structures, which change as firms evolve from start-up ventures to established enterprises, using informal structures in the start-up phase to more formal, bureaucratic organisational structures when they are more established. Such organisational structures could be placed on a continuum, ranging from informal to formal or from organic structures to mechanistic structures, as described by Burns and Stalker (1961). An organic structure is characterised by flexible administrative relations, informality, one or few top managers and delegation (Mintzberg, 1979) with an emphasis on extensive personal interaction and extensive face-to-face communication to ensure collaboration (Morris & Kuratko, 2002). This type of flat structure leads to decentralised power relationships and authority being linked to expertise. Individuals function autonomously, thus exercising their creativity and championing promising ideas needed for entrepreneurship to flourish (Lumpkin & Dess, 1996). Few bureaucratic rules or standard procedures exist that constrain entrepreneurial behaviour (Govender, 1998).

It is therefore likely that entrepreneurial behaviours and processes would be more prevalent in firms with organic organisational structures since organic firms are flatter, with informal communication, which facilitates participation and teamwork, entrepreneurship is supported. Firms using these structures are also more likely to use informal strategy-making processes as a result of their ability to adjust mutually and to interact (Gibbons & O’Connor, 2005). This strengthens the argument that entrepreneurial processes are suitable for these firms since interaction and mutual adjustment underlie these processes. Furthermore, these organic structures facilitate the ability to communicate, which ensures information sharing, and empowerment which is crucial for innovation
(Antonic & Hisrich, 2001). On the other hand, mechanistic firms use more formal process to fit with their more formal structures. Furthermore, authors such as Covin and Slevin (1988), Dess et al. (1997), Miller and Friesen (1978), and Mintzberg (1973) all indicate that entrepreneurial processes are more successful in firms with organic organisational structures. In small service firms it is likely that informal communications channels, short distances between staff and teamwork, may facilitate interaction and discussion of opportunities (Glancey, et al. 1998). It is, therefore, suggested that in firms with organic organisational structures, an EO as well as entrepreneurial strategy-making will be strengthened, and therefore:

H5a: Organic organisational structures will support entrepreneurial strategy-making in firms.

H5b: Organic organisational structures will support an EO in firms.

MODERATING VARIABLES: SIZE AND AGE

Size

In the literature on innovation and entrepreneurship the relationship between firm size and innovation has received a great deal of attention. Firm size generally refers to a firm's number of employees. In the 1940s Joseph Schumpeter proposed that large firms were more effective innovators than smaller firms (Schilling, 2007). While mergers and acquisitions reflect a belief that size provides a number of advantages, size achieved through mergers and acquisitions is fraught with difficulties (Stock, Greis & Fischer, 2002). However, on the opposing side, there are arguments that smaller firms are more flexible, better able to adapt and affect change and, therefore, experience more advantages in innovation. Furthermore, smaller firms are in a position to avoid the “bureaucratic inertia” found in larger firms; they are able to be more responsive to market needs; they may employ more motivated engineers and scientists based on partial ownership; and innovation will in all likelihood make a more visible impact on the smaller firm’s overall performance than in a larger firm.

The empirical results on this issue are mixed, with some studies supporting the viewpoint that larger firms perform better (Acs & Audretsch, 1988; Graves & Langowitz, 1993; Harrison, 1994); while others are finding that smaller firms are better at innovation (Damanpour, 1992; Gilder, 1988; Stock et al., 2002). Yet researchers, such as Antonic and Hisrich (2001); Goosen (2002); and Scheepers, Hough and Bloom, (2007), find that organisational size does not have a meaningful influence on firm level entrepreneurship in the firms they studied. It can, however, be argued that several of the underlying conditions for EO, for example, entrepreneurial strategy-making and organic
structures, are more compatible with small firms, thereby indicating that the model described above through Hypotheses 1 to 5, will be more relevant to small firms, therefore:

H6a Firm size is likely to moderate the relationships described in H1 to H5

Age

The age or number of years a firm has been in existence may be linked to the venture life cycle through which firms progress. Firms experience natural patterns of life cycle stages, from initial venture development through start-up activities; venture growth, stabilisation or maturity, innovation and/or decline (Kuratko & Hodgetts, 2004). Each of these venture life cycle stages requires different sets of managerial competencies regarding the managerial focus, organisational structure, top management style, and control and reward systems, which need to be adapted and changed for each stage to ensure an enterprise’s survival and success. In the start-up phase a firm could be managed in an individualistic and directive manner, but as the firm grows and reaches maturity, managers are required to gradually step away and move to a delegative style and then, in the decline stage, to a participatory management style (Morris & Kuratko, 2002). Generally firm environments become more bureaucratic over time and less supportive of entrepreneurial behaviour (Scheepers et al., 2007). It is, therefore, important to ensure that relationships with an EO are not the result of a bias towards younger firms in the sample, and consequently the moderating effect of age will also be investigated, therefore:

H6b Younger firms are likely to have a stronger EO

RESEARCH METHOD

DATA COLLECTION

Two sets of data were collected, one in New Zealand and one in South Africa. A questionnaire that contains scales identified through a literature review was mailed to 2 000 firms in New Zealand, chosen randomly from the Kompass database. A cross-sectional design was employed targeting the owner/managers of these firms. The questionnaire was mailed to the owner/manager of each firm, and a reminder was mailed one month later. A total of 477 usable questionnaires were returned, for a response rate of 23.85 per cent. Data were collected in South Africa by means of 715 telephone interviews with listed companies on the Johannesburg Securities Exchange (JSE) and firms in the information and communication technology sector (ICT). In the case of JSE companies the Chief Information Officer (CIO) was contacted, while in ICT companies the Chief Executive Officer (CEO) or Marketing
Manager was contacted, since their positions provided them with the ability to comment on internal, external and strategic approaches within the firm. A total of 314 firms participated in the telephone interviews, representing a response rate of 43.91 per cent. Both datasets were combined, with a total of 719 responses. However, only 231 of these firms were small firms (fewer than 100 employees) and classified as belonging to the service sector.

**MEASUREMENT INSTRUMENT**

EO was measured by using the scale developed by Covin and Slevin (1989). This scale consists of nine items, three items measuring each of innovativeness, pro-activeness and risk-taking. Covin and Slevin (1989) and Miller (1983:79) explain that the items in this scale should be aggregated together because EO can be viewed as a ‘basic, uni-dimensional strategic orientation’. Furthermore, EO has been used as a dependent variable in previous studies (Miller & Friesen, 1982; Voss, et al. 2005; Zahra, 1991). In this study only six of the nine items were used in order to ensure a valid model (CMIN/DF = 3.075, GFI = .961, CFI = .947, RMSEA = .095). The six items were averaged and presented as an index number, receiving a Cronbach Alpha of .789 (see Table 3). A high index number represents an entrepreneurial firm, and a low number a conservative firm (Miller & Friesen, 1978).

Entrepreneurial strategy-making was measured with the Hart (1991) scale as modified by Dess et al. (1997). Their scale consists of 25 items and is scored on a five point Likert scale, ranging from 1 “Strongly disagree” to 5 “Strongly agree”. Three of these items were used to measure the strength of entrepreneurial strategy-making in each firm. The organic nature of the organizational structure was measured following the approach of Covin and Slevin (1989). To measure structure, a seven-item scale by Khandwalla (1976/77) that measures the organic versus mechanistic nature of a firm’s structure was used for this study. Respondents were asked to indicate on a seven-point Likert scale to what extent each item measured the collective management style of the firm. Three of the items from this scale were averaged to measure the extent of each firm’s organic structure, the higher the index, the more organic the firm’s structure. Environmental uncertainty was assessed with items developed by Khandwalla (1976/77) using the dynamism and hostility sub-scale items. Respondents’ ratings of dynamism items were added to arrive at a dynamism index; the higher this index, the more dynamic a firm’s environment. Firms with low dynamism scores operate in stable environments. However, only one item was used to define a hostility score. This item referred to the frequency of changes in marketing practices. Firms with lower hostility scores have less hostile environments.
Table 3 shows the items loading on each of the constructs Hostility (H), Dynamism (D), Entrepreneurial Strategy-Making (ESM), Organic Structure (OS) and Entrepreneurial Orientation (EO). A check of implied correlations showed discriminant validity for these constructs in that each item loaded higher on the construct to which it had been assigned than on any other construct.

Table 2: Factor Loadings (L) and Correlations (C) for Hostility (H), Dynamism (D), entrepreneurial Strategy-Making (ESM), organic structure (OS) and entrepreneurial orientation (EO).

<table>
<thead>
<tr>
<th></th>
<th>H</th>
<th>D</th>
<th>ESM</th>
<th>OS</th>
<th>EO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The frequency required for changes in marketing practise</td>
<td>L</td>
<td>C</td>
<td>L</td>
<td>C</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>.18</td>
<td>.49</td>
<td>.34</td>
<td>.46</td>
</tr>
<tr>
<td>3</td>
<td>4. Diversification of organisation</td>
<td>0</td>
<td>.07</td>
<td>.39</td>
<td>.39</td>
</tr>
<tr>
<td>4</td>
<td>5. Variability of customer buying habits</td>
<td>0</td>
<td>.15</td>
<td>.85</td>
<td>.85</td>
</tr>
<tr>
<td>5</td>
<td>6. Variability market dynamism and uncertainty</td>
<td>0</td>
<td>.13</td>
<td>.73</td>
<td>.73</td>
</tr>
<tr>
<td>6</td>
<td>7. Most people in the organisation prepared to take risks</td>
<td>0</td>
<td>.31</td>
<td>0</td>
<td>.10</td>
</tr>
<tr>
<td>7</td>
<td>8. People are dynamic and entrepreneurial</td>
<td>0</td>
<td>.38</td>
<td>0</td>
<td>.13</td>
</tr>
<tr>
<td>8</td>
<td>9. People are encouraged to experiment</td>
<td>0</td>
<td>.26</td>
<td>0</td>
<td>.09</td>
</tr>
<tr>
<td>9</td>
<td>10. Disregard formal procedures to get things done</td>
<td>0</td>
<td>.29</td>
<td>0</td>
<td>.21</td>
</tr>
<tr>
<td>10</td>
<td>11. Loose, informal control and relationships</td>
<td>0</td>
<td>.25</td>
<td>0</td>
<td>.18</td>
</tr>
<tr>
<td>11</td>
<td>12. Situation requirements/personalities define behaviours</td>
<td>0</td>
<td>.29</td>
<td>0</td>
<td>.21</td>
</tr>
<tr>
<td>12</td>
<td>13. Initiate action rather than response to competition</td>
<td>0</td>
<td>.27</td>
<td>0</td>
<td>.00</td>
</tr>
<tr>
<td>13</td>
<td>14. The first to introduce new products/services/techniques</td>
<td>0</td>
<td>.27</td>
<td>0</td>
<td>.00</td>
</tr>
<tr>
<td>14</td>
<td>15. Competitive philosophy</td>
<td>0</td>
<td>.22</td>
<td>0</td>
<td>.00</td>
</tr>
<tr>
<td>15</td>
<td>16. High risk projects with very high returns</td>
<td>0</td>
<td>.30</td>
<td>0</td>
<td>.00</td>
</tr>
<tr>
<td>16</td>
<td>17. Boldness of acts to meet objectives</td>
<td>0</td>
<td>.34</td>
<td>0</td>
<td>.00</td>
</tr>
<tr>
<td>17</td>
<td>18. Boldness in exploiting opportunities</td>
<td>0</td>
<td>.35</td>
<td>0</td>
<td>.00</td>
</tr>
</tbody>
</table>

DATA-ANALYSIS

Descriptive statistics and correlations were calculated for the above scales, allowing an initial test for Hypotheses H1, H2, H4, H5 and H6b. Next a between subjects MANOVA was used to compare the characteristics of New Zealand and South African firms while controlling for the effects of size and age. The above hypothesised relationships between the constructs were further tested by fitting a structural model using the initial items. Non-significant links were removed and the final model was tested for invariance in terms of country, size and age, allowing the testing of hypotheses H3 and H6a.
FINDINGS

Data were obtained from 231 in the services sector, with 126 firms from New Zealand and 105 firms from South Africa. The New Zealand firms tended to be older (Mean = 27.4, StdDev = 30.93) than the South African firms (Mean = 11.57, StdDev = 9.92). However, the New Zealand firms also tended to be smaller (Mean = 22.2 FTE’s, StdDev = 20.06) than the South African firms (Mean = 30.0, StdDev = 21.9). A Mann-Whitney test showed a significant difference for these age (z=5.956, p<.001) and size (Z = 3.395, p = .001) differences. Therefore the need arose to make adjustments for age and size affects when we compare New Zealand and South Africa in terms of the scales shown in Table 3.

Table 3 shows the summary statistics for the scales developed using the measurement models described in Table 2. EO has a significant positive correlation with hostility, ESM and OS providing support for H2, H4 and H5b, suggesting that an entrepreneurial orientation is more likely for firms with an organic structure and entrepreneurial strategy-making and for firms operating in a hostile environment. The significant correlation between ESM and OS confirms H5a, that organic organisational structures support ESM in firms. However, there was a significant negative correlation between dynamism and OS suggesting that an organic structure was less likely in the case of dynamic environments. Also of interest were the correlations with age which suggested that younger firms were more likely to have an organic structure and more likely to use entrepreneurial strategy-making, resulting in more of an entrepreneurial orientation for young firms as suggested by H6b. However, there were no significant correlations with firm size and there was no support for the first hypothesis in that there was no significant positive correlation between environmental dynamism and the strength of EO in a firm.

Table 3: Descriptive Statistics and Correlation matrix

<table>
<thead>
<tr>
<th></th>
<th>OS</th>
<th>ESM</th>
<th>D</th>
<th>H</th>
<th>EO</th>
<th>Size</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number Items</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>6</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Mean</td>
<td>4.65</td>
<td>4.99</td>
<td>3.71</td>
<td>4.66</td>
<td>4.31</td>
<td>25.75</td>
<td>20.41</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>1.52</td>
<td>1.27</td>
<td>1.45</td>
<td>1.61</td>
<td>1.10</td>
<td>21.22</td>
<td>25.24</td>
</tr>
<tr>
<td>Cronbach's Alpha</td>
<td>.855</td>
<td>.695</td>
<td>.659</td>
<td>.789</td>
<td>21.22</td>
<td>25.24</td>
<td></td>
</tr>
</tbody>
</table>

Correlations with:

<table>
<thead>
<tr>
<th></th>
<th>OS</th>
<th>ESM</th>
<th>D</th>
<th>H</th>
<th>EO</th>
<th>Size</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organic structure (OS)</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entrepreneurial strategy-making (ESM)</td>
<td>.314**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dynamism (D)</td>
<td>-.202*</td>
<td>-.032</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hostility (H)</td>
<td>.286**</td>
<td>.342**</td>
<td>-.125</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EO</td>
<td>.150*</td>
<td>.408**</td>
<td>-.011</td>
<td>.413**</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>.004</td>
<td>-.028</td>
<td>-.095</td>
<td>-.236**</td>
<td>.006</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-.277**</td>
<td>-.259**</td>
<td>.011</td>
<td>-.036</td>
<td>-.177*</td>
<td>.094</td>
<td>1.000</td>
</tr>
</tbody>
</table>

** p<.001, * p<.01.
The results shown in Table 4 were obtained when a MANOVA analysis was performed in order to compare the scales for New Zealand and South Africa while controlling for size and age. A significant difference between the countries was found ($F(5,218) = 20.9, p<.001$, partial $\eta^2 = .324$). In particular there was a large difference in regard to organic structure and the dynamism of the environment with a smaller effect in the case of hostility and entrepreneurial strategy-making. The Least Square Means which adjust for any age and size effects show that the New Zealand environment is more dynamic while the South African environment is more hostile. In addition, South African firms are more likely to have an organic structure, also more likely to use entrepreneurial strategy-making than New Zealand firms. However, it is interesting to note that there are no significant differences between the two countries in terms of entrepreneurial orientation.

Table 4: Mean Comparison for New Zealand and South Africa after controlling for age and size.

<table>
<thead>
<tr>
<th>Scale</th>
<th>LS Means NZ</th>
<th>LS Means SA</th>
<th>F(1,222)</th>
<th>p-value</th>
<th>partial $\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organic structure (OS)</td>
<td>3.96</td>
<td>5.43</td>
<td>61.24</td>
<td>&lt;.001</td>
<td>.216</td>
</tr>
<tr>
<td>Entrepreneurial Strategy-Making (ESM)</td>
<td>4.78</td>
<td>5.23</td>
<td>6.76</td>
<td>.010</td>
<td>.030</td>
</tr>
<tr>
<td>Dynamism (D)</td>
<td>4.18</td>
<td>3.19</td>
<td>25.00</td>
<td>&lt;.001</td>
<td>.101</td>
</tr>
<tr>
<td>Hostility (H)</td>
<td>4.28</td>
<td>5.08</td>
<td>13.04</td>
<td>&lt;.001</td>
<td>.055</td>
</tr>
<tr>
<td>EO</td>
<td>4.38</td>
<td>4.22</td>
<td>1.02</td>
<td>.314</td>
<td>.005</td>
</tr>
</tbody>
</table>

Using the items defined in Table 2 the structural model shown in Figure 1 was fitted to the data. This model described the data reasonably well ($CMIN/DF = 1.849$, $GFI = .913$, $CFI = .926$, $RMSEA = .061$) explaining 33.4 per cent of the variation in EO. This model provides some support for the second hypothesis in that there are direct and indirect positive links between hostility and EO. This model supports the positive link between ESM and EO suggested in H4 and the link between OS and EMS in H5a. There is also support for H5b, however, the relationship between OS and EO is mediated by ESM. But there is no support for the first hypothesis. Indeed it appears that more dynamic environments may actually restrict the growth of EO through their negative effect on organic structure. This model suggests that a dynamic environment will restrict the growth of organic structures in a firm while a hostile environment will promote the growth of an organic structure. Further it shows that an organic structure will support entrepreneurial strategy-making thereby promoting EO. Interestingly a hostile environment is particularly important in supporting EO. Hostility has a direct effect on EO as well as an indirect effect via its effect on organic structure and entrepreneurial strategy making.
Invariance tests were then carried out in order to test for moderation effects in the case of the model shown in Figure 1. Two categories (below median and at least equal to median) for the possible moderators were created. The results suggest a moderation effect in the case of country. However, there also are no significant differences for young and old firms, providing no support for hypothesis H6a.

Table 5: Invariance Tests

<table>
<thead>
<tr>
<th>Standardised Total Effects On EO</th>
<th>Different Weights Chi-Squared(196)</th>
<th>Same Weights Chi-Squared(213)</th>
<th>Invariance Test Chi-Squared(17)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size level</td>
<td>297.7</td>
<td>313.4</td>
<td>15.7</td>
<td>.545</td>
</tr>
<tr>
<td>Age level</td>
<td>319.6</td>
<td>343.6</td>
<td>24.0</td>
<td>.119</td>
</tr>
<tr>
<td>Country</td>
<td>315.8</td>
<td>360.1</td>
<td>44.3</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

Table 6 shows the total standardised effect sizes for EO for South Africa and New Zealand. The most dramatic effect is the high positive effect of environmental hostility in New Zealand with a much weaker (positive) effect in the case of South Africa. The effect of dynamism on EO appears to be particularly weak for both New Zealand and South African firms. There is therefore only partial support for the third hypothesis. However, there is also an interesting difference for OS and ESM with New Zealand firms having a weaker relationship between these constructs and EO than South African firms. However, it should be noted that this model explains only 28 per cent of the variation in the EO construct in South Africa, but 51 per cent for New Zealand.
The last column of Table 6 shows that hostility is overall the most important predictor of EO, closely followed by entrepreneurial strategy making and then organic structure. Environmental dynamism has a negligible effect.

**DISCUSSION AND CONCLUSION**

Further discussion of a number of these findings is warranted. On a basic level the data show first that certain internal conditions are likely to nurture EO in small firms. Specifically EO occurs in younger firms with organic structures that use entrepreneurial strategy-making. Many authors suggest that organic organisational structures allow for rapid organisational response to changing external forces in unpredictable environments, something that is not typical of mechanistic structures (Burns & Stalker, 1961; Covin & Slevin, 1989; Lawrence & Lorsch, 1976) and thus these structures are believed to facilitate entrepreneurial behaviours, which is supported by this result. Furthermore, as supported by the literature, firms that use entrepreneurial strategy-making processes are likely to have a higher EO than expected. This indicates that entrepreneurial processes, driven by a decisive leader, can in fact improve the entrepreneurial posture of a firm, and provides firms with an additional method of improving their EO (Verreynne & Meyer, 2007b).

Second, perceptions of hostile environments lead to EO both directly and directly through internal conditions such as strategy-making and structure. However, it seems that perceptions of dynamic environments promote more mechanistic structures resulting in a lower EO. However, hostility is a very important contributor to EO. While these findings may seem contradictory, it is nevertheless interesting, and contributes to the understanding of how small service firms become entrepreneurial. The findings suggest that instead of being ‘pulled’ to become entrepreneurial through available opportunities, these firms are ‘pushed’ in that direction in defence against a hostile environment. It is therefore a reactive, rather than a pro-active development of EO that
takes place in these firms. Previous studies in small and large firms in general suggested that this process would be more pro-active in nature, with dynamism having a greater effect on EO than hostility (e.g. Van Gelderen, et al. 2000). This could be ascribed to these firms being in touch with changing customers needs since they are close to the customer (DeSarbo, et al. 2005; Van Gelderen, et al. 2000) and in the case of firms with a high EO, possess well developed marketing competencies.

Third, when comparing firms between countries, SA firms (those in objective hostile environments) are more likely to have organic structures and use ESM. In South Africa, the higher organic structures of firms appear to have strengthened the relationship between this variable and EO. NZ firms perceive their environment as more dynamic and SA firms perceive their environment as more hostile, but no significant country differences exist in regard to EO. This finding supports the original assertion of this paper, namely that SA firms are operating in a hostile environment while NZ firms are operating in a dynamic environment, thereby making an important contribution to the literature on environmental uncertainty.

Fourth, the most dramatic effect is the positive effect of environmental hostility in New Zealand with a much weaker effect in the case of South Africa. This means that perceived hostility has a strong positive effect on EO in dynamic environments when hostility levels are lower, but a weaker positive effect in hostile environments. However, environmental dynamism appears to have little influence on entrepreneurial measures in South Africa or New Zealand. This result further supports the theory that unfavourable competitive conditions provide a greater impetus for entrepreneurial behaviours than favourable competitive conditions. In New Zealand and, particularly in South Africa, the use of entrepreneurial strategy-making supported EO. Collectively these findings suggest that in developed countries with dynamic environments, entrepreneurial behaviours and processes are influenced by a combination of different factors. Further research should investigate a configuration of entrepreneurial and strategic factors when studying entrepreneurship in different countries.

A number of limitations need to be borne in mind when analysing the results of this study. Firstly, the use of country of origin as a proxy for an objective measure for environmental hostility of dynamism is a novel approach, which means that there are arguments against such an approach. However, the arguments put forward in this paper to support such a claim are well supported in academic literature and research undertaken by international agencies. Secondly, since data were collected from New Zealand and South African firms only, the generalisability of the results to other settings needs to be explored through further studies. However, some indications of the differences that may exist between countries are addressed in this study. Thirdly, the cross-sectional design may be another
limitation, since economic cycles influence managerial perceptions of environmental uncertainty and data used in this paper were collected during an upswing phase (Bowen & Wiersema, 1999; Schwartz & Teach, 2000). Different results may be obtained if data were collected during an economic downswing. Therefore, a longitudinal study may provide more robust findings. This study also used self reporting measures (Covin, Green & Slevin, 2006). An owner/manager who views his/her firm as entrepreneurial is thus likely to match his/her actions to that perception and similarly for the strategy-making process. To overcome this issue, scales which were worded neutrally were used in this study.

This research contributes to the academic debate in a number of ways, but two contributions should be highlighted. The first is in the research method followed in this paper, namely to include perceived and objective measures of environmental uncertainty in one model, and also to use country of origin as a proxy for objective environmental uncertainty. This approach was supported by the findings as discussed earlier. The second contribution results from the findings of the paper regarding the interaction between objective and subjective measures of environmental uncertainty and the impact on EO in small firms. In this regard the most significant finding is how small service firms develop an EO as a result of intense competition in perceived hostile environments, but at the same time are more successful at doing so in objectively dynamic environments. Therefore, the objective hostility of an environment such as SA may hamper the development of entrepreneurial firms.

A number of implications for managers also emerge. Firstly, it is important to understand how owners/managers perceive the environment of their firms because it is likely that owners/managers would react by means of a variety of behaviours as a result of such perception (Smircich & Stubbart, 1985). DeSarbo, et al. (2005) explain that strategy selection depends on the nature of the environment and how closely a firm seeks to align itself with its environment. Firms in uncertain environments need to plan more to deal with the uncertainty in the environment (Miller & Cardinal, 1994) and most often a pro-active approach is best to deal with uncertainty. Secondly, the findings of this research indicate that firms are capable of acting entrepreneurially in hostile conditions. Therefore the findings suggest that despite the current hostile economic conditions, firms could become more innovative, thereby creating an entrepreneurial orientation that will help them to deal with the current uncertainty, but also enable them to create sustained competitive advantage.
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