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## Organisational Dynamics and its Influence on Firms' Entrepreneurship Ability: South Africa Perspective

Emaad Muhanna\*

### Abstract

The research reported in this article examines the influence of the organisational context of firm on its entrepreneurship. Specifically, this study examines how the organisational context variables of age, size, resources and competitive strategy affect entrepreneurship and in particular, innovation, proactiveness and risk-taking. Results from a sample of 62 firms showed, as hypothesised, the significant influence of resources and competitive strategy on entrepreneurship.

Although the need to innovate has always existed, this has been accentuated in recent years due to the acceleration of technological change and growing worldwide competition (Veciana, 1966). By entrepreneurship, I understand any behaviour, which includes high scores on the dimensions of innovation, proactiveness and risk-taking (Miller, 1983). The first antecedent of entrepreneurship can be found in Schumpeter's concept of "entrepreneur" in 1912 in his work *Theorie der Wirtschaftlichen Entwicklung*. As is well known, for this author "entrepreneurs are individuals in charge of managing and carrying out new combinations".

Consequently, the aim of this research study is to analyse the relationship between the characteristics of the organisational context (size, age, resources and competitive strategy) and its degree of entrepreneurship. To this end, after presenting the theoretical bases and the applied methodology, I present the results of our empirical research, conducted on a sample of 30 SMEs, ending with the main conclusions to be drawn from the study. Before formulating and testing the hypotheses upholding this line of research, some of the concepts used will be clarified.

**Key words:** organizational dynamics, corporate entrepreneurship, organizational context, innovation, proactiveness.

**JEL Classification:** M1, M10.

### Entrepreneurship

Miller (1983) suggests that a firm presents entrepreneurship if it "carries out product-market innovations, takes risks and behaves proactively and aggressively". Numerous researchers have this conceptualisation in their works, for example, Covin and Slevin (1989), Schafer (1990) and Naman and Slevin (1993), among others.

Entrepreneurial literature uses risk-taking upon comparing the entrepreneur to the self-employed worker. Cantillon (1755), one of the first authors to formally use the term entrepreneurship, pointed out that the main factor differentiating entrepreneurs from employed workers was the uncertainty and risk taken by the former. From them onwards, risk-taking is one of the most commonly used concepts by researchers to describe entrepreneurship (Dean et al., 1993).

Regarding innovation it should be pointed out that Schumpeter (1912, 1942) was one of the first economists to emphasise the role of innovation in the process. Schumpeter referred to the process of creative destruction, by which wealth is created when the existing market structures are destroyed by the introduction of new products or services, which caused the growth of new companies. The key to this cycle of activity was entrepreneurship: the introduction of "new combinations" which brought about the dynamic evolution of the economy. Therefore, innovation becomes an important factor used to characterise entrepreneurship (Zahra and Covin, 1995).

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Entrepreneurial activities influence a company's performance by increasing its commitment to innovation (Miller, 1983; Lumpkin & Dess, 1996) by offering innovative products or processes. Corporate entrepreneurship can therefore redefine the way the firm competes or redirecting the scope of its operations towards new segments (Zahra, 1991). Significant advantages may also be gained from diffusing product and process innovations developed in various national markets throughout a multinational firm's network (Bartlett & Ghoshal, 1988, 1989).

Innovation can also lead to the development of key capabilities that can improve a firm's performance (Teece, Pisano & Shuen, 1997). The development of these capabilities is intimately linked to the countries in which the firm conducts its operations. Kogut (1991) suggests that competitive capabilities that result in performance differences do not always cross national borders, a factor that explains why firms invest in developing foreign markets as a means of gaining access to sources of innovations (Shan & Hamilton, 1991). Access to diverse sources of knowledge can provide firms with significant learning opportunities that intensify product and process innovations. Innovation generates products, goods, processes, services, and systems that can be used to meet customer needs and build a strong international market position (Bannon, 1998). Innovation can thus improve the firm's profitability and fuel its growth.

Proactivity is another characteristic that, from Schumpeter onwards, economists have emphasised in their works. For example, it is fitting to point out the work by Penrose (1959) who indicated that entrepreneurs are important for the growth of firms since they provide the vision and imagination necessary to carry out opportunistic expansion. Other authors emphasised the importance of being a first mover as the best strategy to capitalize a market opportunity. Upon exploiting the market asymmetries, the first mover can secure high profits and position himself in the market using different means. Thus, taking the initiative by anticipating and seeing through new opportunities and participating in emerging markets is associated to entrepreneurial orientation (Covin and Slevin, 1989; Lumpkin and Dess, 1995).

Some companies undertake corporate entrepreneurship to challenge the competition and revise the rules of rivalry in their industries. Proactive corporate entrepreneurship indicates a company's determination to pursue promising opportunities, rather than merely responding to competitors' moves (Miller, 1983). Morck and Yeung (1991) suggest that the interaction of a firm's proactiveness and internationalization is significantly associated with performance, whereas internationalization alone is not significant.

Proactive corporate entrepreneurship, such as pioneering or first entry, can improve company performance. Kimura (1989), for example, has concluded that first entrants enjoyed significant strategic advantages in international markets. Mascarenhas (1992 a, b) has also found that oil equipment companies that were first to enter international markets enjoyed important first-mover advantages derived from the barriers erected through technical leadership, resource commitments, and buyer switching costs. First-movers also survived longer in their foreign markets than late entrants. Mascarenhas (1992 b) also uncovered a positive relationship between the timing of a firm's market entry and its market share. Pioneering in several foreign markets concurrently, rather than sequentially, was also positively associated with market survival. Consequently, proactiveness can be conducive to successful firm performance.

## **Formulation of the hypotheses**

Research suggests that the organisational context is significantly related to entrepreneurship. In this sense, I will analyse the influence of the age, size, resources and competitive strategy of the firm on its degree of entrepreneurship.

### ***Organisation age***

The research literature indicates that the effects of organisation age on the capacity for entrepreneurial activity in the form of innovation are similar to those of size. As organisations grow older

there are pressures, similar to those exerted by size, to increase formalisation and standardisation to maintain internal consistency (Aldrich and Auster, 1986). The entrepreneurial activity that characterises new organisations tends to disappear as organisations grow older. It is the choice of leadership to recreate or protect adaptive processes to ensure systemic innovation. Among the perils of organisational age are the learned capacity to focus on routine problems (Starbuck, 1965), the use of ritualised programmes to monitor problems (Meyer and Rowan, 1977), ignoring critical external information and the increasing detachment of upper management from those personally closely connected to the environment (Aldrich and Auster, 1986).

In accordance with the above, I propose the following hypothesis:

***Hypothesis 1:*** *The older the firm, the lower its degree of entrepreneurship. The hypothesis is based on a combination of three sub-hypotheses: Hypothesis 1a: The older the firm, the greater its risk aversion. Hypothesis 1b: The older the firm, the lower its proactiveness. Hypothesis 1c: The older the firm, the lower its innovativeness.*

#### ***Organisation size***

There is an extensive literature in management and organisational studies on the effects of size on entrepreneurial activity (Scott, 1992). Large size is associated with greater formalisation and standardisation, which are generally inversely related to innovation and creativity in organisations. The entrepreneurial activity has to be protected from the bureaucracy present in large organisations. Even with a variety of structural mechanisms and the best of intentions, large organisations appear to fail more often than succeed in the entrepreneurial arena (Block and MacMillan, 1993). Small firms may also have an advantage in the area of flexible adaptation and quick response time, because they do not have to contend with multiple layers of decision-makers and formal channels for approval (Block and MacMillan, 1993). Moreover, managers in most large, established organisations have a good deal to lose financially and psychologically from entrepreneurial activity (Falbe et al., 1998). On the other hand, founders and members of small firms are viewed as having less to lose and therefore more to gain by operating with the ambiguity of innovation and entrepreneurial activity (Geiss, 1989).

All of the above leads us to propose the following hypothesis:

***Hypothesis 2:*** *The larger the firm, the lower its degree of entrepreneurship. The hypothesis is based on a combination of three sub-hypotheses: Hypothesis 2a: The larger the firm, the greater its risk aversion. Hypothesis 2b: The larger the firm, the lower its proactiveness. Hypothesis 2c: The larger the firm, the lower its innovativeness.*

#### ***Organisation resources***

The organisation's resources also bear relation with the degree of entrepreneurship. Chandler and Hanks (1994) observed that those companies with greater resources and capabilities undertake more new activities than those with fewer resources and a lower number of capabilities. More recently, Greene and Brown (1997) observed that human, physical, social and financial resources combine in a different way depending on the degree of innovation. The companies which are less innovative and with a slower growth rate, possess a lower volume of human and organisational resources, compared to the more innovative firms with a quicker growth rate. In short, human, physical and financial resources and their interrelations are of great importance for adopting entrepreneurship.

All of this enables us to suggest the following hypothesis:

***Hypothesis 3:*** *The more resources a firm has, the greater its degree of entrepreneurship.*

The hypothesis is based on a combination of three sub-hypotheses: Hypothesis 3a: The more resources in the firm, the lower its risk aversion. Hypothesis 3b: The more resources in the firm, the greater its proactiveness. Hypothesis 3c: The more resources in the firm, the greater its innovativeness.

### **Competitive strategy**

The firm's competitive strategy is another variable influencing entrepreneurship (Covin, 1991; Covin and Adler, 1989). Strategies that emphasise innovation and new product introductions are generally associated with an entrepreneurial approach to competitive advantage whereas strategies based on cost control and incremental process improvements tend to be in the domain of established firms seeking to sustain advantage by erecting scale economy barriers. The strategic prescriptions suggested by Porter's (1980) concept of generic strategies tend to link entrepreneurial type activities much more closely with differentiation strategies than with low cost leadership strategies. To be successful, differentiators rely on strong marketing abilities, creative flair, product engineering skills, and effective coordination across functional areas, whereas low cost leaders emphasise tight cost controls, process engineering skills, efficient distribution systems, and structured sets of organisational responsibilities (Porter, 1980: 40-41). These distinctions suggest that firms seeking to renew or strengthen themselves by being more entrepreneurial should adopt differentiation type strategies rather than cost leadership strategies. This reasoning led Dess et al. (1997) to hypothesize that entrepreneurial firms employing cost leadership strategies will have relatively lower performance.

All of the above enables us to put forward the following hypotheses:

**Hypothesis 4:** *Firms presenting a differentiation strategy are more likely to adopt entrepreneurship than those formulating a strategy based on cost leadership.*

The hypothesis is based on a combination of three sub-hypotheses:

**Hypothesis 4a:** *Firms presenting a differentiation strategy are more likely to take risks compared to those formulating a strategy based on cost leadership.*

**Hypothesis 4b:** *Firms presenting a differentiation strategy are more likely to detect new opportunities compared to those formulating a strategy based on cost leadership.*

**Hypothesis 4c:** *Firms presenting a differentiation strategy are more likely to innovate than those formulating a strategy based on cost leadership.*

### **Formulation of the hypotheses studying the influence of the environment**

In order to ascertain the conditions in which the relationship between organisational characteristics and entrepreneurship is stronger, I analysed the effect of dynamism, hostility and heterogeneity of the environment. The reason for using these control variables lies in the fact that environmental changes create a greater need for entrepreneurship. For example, Miller and Friesen (1982) in their study on innovators or, in our terminology, entrepreneurship and conservative managers found greater degrees of hostility and heterogeneity in the surroundings of the former. In a similar way, Miller and Friesen (1983) noted the existence of a significant relationship between dynamism, hostility and heterogeneity and entrepreneurship among successful managers. Zahra and Covin (1995) proposed a nexus between the perception of environmental uncertainty and change in the manager's competitive strategy. Finally, Zahra (1993) also remarked that entrepreneurship was related to environmental dynamism and complexity.

Then, the study considered two possible influence of the environment on entrepreneurship. First, the levels of both the organisational characteristics and the entrepreneurship may be higher in more dynamic, hostile and heterogeneous environments and secondly, the relationship between organisational characteristics and entrepreneurship may depend on the control variables.

This enables proposing hypotheses "a" and "b" in each of the dimensions.

#### ***Dynamism***

The more dynamic the environment the greater the need for entrepreneurship and the more likely it is that firms will be entrepreneurial. On the other hand, entrepreneurial firms are often found in

dynamic environments because their managers prefer rapidly growing and opportune settings; settings which may have high risks as well as high rewards. Such firms may even be partly responsible for making the environment dynamic by contributing challenging entrepreneurial performance (Peterson and Berger, 1971).

This enables proposing the following hypotheses:

**Hypothesis 5a:** *The relations described in Hypotheses 1-4 are stronger in a more dynamic environment.*

**Hypothesis 5b:** *The levels of the variables described in Hypotheses 1-4 are higher in a more dynamic environment.*

### **Hostility**

The more hostile the environment, the greater the need for entrepreneurship and the more likely it is that firms will be entrepreneurial. When competitor's products change rapidly or when customer needs fluctuate, there are more entrepreneurial behaviour. On the other hand, because entrepreneurship prompts imitation, the more entrepreneurial the firms the more hostile their environments can become.

This enables proposing the following hypotheses:

**Hypothesis 6a:** *The relations described in Hypotheses 1-4 are stronger in a more hostile environment.*

**Hypothesis 6b:** *The levels of the variables described in Hypotheses 1-4 are higher in a more hostile environment.*

### **Heterogeneity**

Firms operating in many different markets are likely to learn from their broad experience with competitors and customers. They will tend to borrow ideas from one market and apply them in another. The greater the heterogeneity, the greater the probability that entrepreneurial behaviour will be proposed. Of course, diversity in organisation increases with environmental heterogeneity. On the other hand, entrepreneurship is also likely to be positively correlated with heterogeneity because entrepreneurial firms are more likely to come up with products and services that can be exploited in different markets (Chandler, 1962).

Moreover, entrepreneurship may cause heterogeneity. This enables us to propose:

**Hypothesis 7a:** *The relations described in Hypotheses 1-4 are stronger in a more heterogeneous environment.*

**Hypothesis 7b:** *The levels of the variables described in Hypotheses 1-4 are higher in a more heterogeneous environment.*

## **Sample characteristics**

The basic information of this study comes from a sample made up of 62 firms, the size of which ranges from 5 to 500 employees, where SMEs with 50 can be classified as SMEs (adopting this concept of SME obeys the criterion adopted by the European Observatory of SME. Although more recently, the European Commission has dictated that within the subject of SMEs will be included those organisations meeting the following three requirements: not employing more than 250 employees, a turnover of less than 40 million ECU and independence).

All the firms surveyed operate in the South African national territory and develop their activities in different industrial settings: tourism, mining, construction, food, wood, paper, chemicals and transport among others. The average number of employees of these firms is almost 81. (Only 4% of the firms in the sample considered employ between 250 and 500 employees.) The average age

of the firms is 25 years. This is representative of the South African firms, because most of the firms are small and mature.

## **Research variables**

The database used in this research study has its origin in a questionnaire designed referring to the main studies undertaken in this field at an international level. The survey consists of a set of items measuring variables of a diverse nature. In particular, the information used in this study is organised in two blocks. The first block measures the firms' entrepreneurship. The second block – concerning the organisational characteristics – includes indicators of their size, age, resources and competitive strategy and the third block measures the environment's characteristics. With the exception of the firms' size and age, which were measured by means of quantitative variables, the rest of the information was measured by five-point Likert-scales.

Regarding entrepreneurship, the items constituting this scale are those of innovation, risk-taking and proactiveness, which have been employed in numerous previous works (Dess et al., 1997). Entrepreneurship is measured by the sum of three indicators (Dean et al., 1993; Thomas et al., 1991). Since the items of this scale place emphasis on different aspects of strategic position (innovation, proactiveness and risk-taking) they were validated by a factor analysis. Validity by factor analysis is a form of corroborating the validity of the scale. The high score in the factor suggests that, although the items are focused on different strategic aspects, they are empirically related and constitute a uni-dimensional strategic orientation. All the items scored over 0.5 in the same factor, indicating that it is appropriate to combine these items in the same scale. Similarly, a Cronbach alpha coefficient of 0.7217 was obtained for the items making up the scale.

Regarding the availability of resources, information was collected on the following variables: Availability of capital, human resources, materials and managerial competence.

Spearman correlations between the variables constituting entrepreneurship

1. Risk-taking
2. Innovation
3. Proactiveness
4. Entrepreneurship 1.00

As for the competitive strategy, information was gathered in relation to the following variables: Importance of price undercutting, Importance of innovations, Importance of minimising advertising costs, Importance of quality, Importance of being the first mover, and Importance of advertising. To measure dynamism I added the score obtained in each of the following items:

- ◆ Need to introduce technological innovations,
- ◆ Need to introduce New marketing policies,
- ◆ Product obsolescence ratio,
- ◆ Degree of customer preference and Degree of competitor action prediction (Miller and Friesen, 1982; 1983).

To measure hostility I added the score obtained in each of the following items:

- ◆ Threat of price competition,
- ◆ Threat of product quality competition,
- ◆ Threat of product innovation competition and Threat of potential market reduction (Miller and Friesen, 1982, 1983).

To measure heterogeneity I added the score obtained in each of the following items:

- ◆ Differences in consumer habits,
- ◆ Differences in the marketing strategies and policies used,
- ◆ Differences in the nature of the competition and Differences in the technology employed (Miller and Friesen, 1982).

## Control Variables

The study also controlled for a company's size, age, global business scope, past performance, and industry type, as follows:

1. *Company size* was included as a control variable because of the significant association between this variable and corporate innovation and venturing (Zahra, 1993), product diversification (Sambharya, 1995), and international diversification (Tallman & Li, 1996). A positive relationship was expected between company size and CE because larger firms were expected to possess the slack resources necessary for CE activities.
2. *Company age* was included in the analysis because it influenced a firm's international operations and entrepreneurial activities (Pinchot, 1985; Zahra, 1991). The number of years a company has been in operation was used as a control variable.
3. *The scope of the firm's international operations* was measured by the number of countries in which a firm sold its products. This variable, therefore, served as a proxy of a firm's global geographic diversity. The greater the global scope of a firm's operations, the greater its opportunities to innovate, take risks, learn new skills, and explore new systems. Successful CE ventures can also be transferred within a firm's international operations, which can further increase CE activities (Hitt et al., 1997). International diversification can also generate the capital necessary to support large-scale R&D projects by spreading the risk and providing markets in which the firm can recoup its investments (Kobrin, 1991). Finally, global geographic diversity determines the firm's overall performance (Tallman & Li, 1996). A positive relationship was expected between global scope and CE.
4. *Past Company Performance* was included as a control variable because it affected the availability of slack resources. When a company performs well, financial slack increases and risk taking rises (Singh, 1986). High past firm performance (relative to industry competitors) was expected to be positively associated with CE. Consequently, the study asked executives to rate their companies' performance on sales growth, return on assets (ROA), and return on investment (ROI) over the preceding three-year period. A 5-point scale was used (5=top 20% vs. 1=lowest 20%). Average scores on the three items were used in the analyses.
5. *Industry type* was included because of the interindustry differences in entrepreneurial activities, levels and patterns of internationalization (Grant, 1995), and opportunities for innovation. For a given industry, therefore, the average for responding firms was subtracted from each firm's score.

## Measures

Data were collected from multiple sources, as follows:

**1. Corporate Entrepreneurship.** A modified version of Miller's (1983) 7-item measure was used to capture the firm's entrepreneurial activities. A 5-point scale (1= very untrue vs. 5= very true) was used. Executives were asked to indicate the extent to which each item applied to their entrepreneurial operations over the preceding 3-year period. Executives were also given the opportunity to indicate "not applicable" when responding to the survey. Previous researchers also found this measure to be reliable (Covin & Slevin, 1991; Werner et al., 1996; Zahra, 1991) and valid (Knight, 1997). Responses to the measure's seven items were averaged, and the mean was then used in the analysis. The CE scale was reliable ( $\alpha = .78$ ).

Items for the CE scale were: This company shows a great deal of tolerance for high risk projects; this company uses only "tried and true" procedures, systems, and methods (reverse scored); this

company challenges, rather than responds to, its major competitors; this company takes bold, wide-ranging strategic actions, rather than minor changes in tactics; this company emphasizes the pursuit of long-term goals and strategies; usually, this company is the first in the industry to introduce new products to the market; and this company rewards taking calculated risks.

Four additional analyses, using data from secondary sources, were performed to validate the CE measure. Validation data were obtained from *COMPUSTAT*, *Fortune 500*, *Global Business 1000*, *Global Scope*, and *Forbes*. The first analysis examined changes in the firm's diversification over a three-year period, a construct related to corporate venturing (Porter, 1987). The ratio of the firm's foreign sales to its total sales was used, as has been done in past research. The correlation between this ratio and the Corporate Entrepreneurship index was positive and significant ( $r=.59$ ,  $n=65$ ,  $p<.001$ ).

The second validation analysis followed the literature by constructing an entropy measure of corporate risk. Risk taking was a key approach to corporate venturing (Porter, 1987). The change score measure over a 3-year period was positively and significantly associated with CE ( $r=.71$ ,  $n=53$ ,  $p<.001$ ).

The third analysis focused on measures of proactiveness, a key component of CE (Miller, 1983). Given that Morck and Yeung (1991) suggest that advertising is an important measure of proactiveness, a company's advertising in foreign markets was positively and significantly correlated with CE ( $r=.57$ ,  $n=61$ ,  $p<.001$ ), supporting the validity of the CE measure.

The fourth analysis focused on R&D spending, a measure of innovation (Morck & Yeung, 1991). The 3-year average R&D score (for the firm's operations) was positively and significantly correlated with CE ( $r=.53$ ,  $n=58$ ,  $p<.01$ ), which supported the validity of the CE measure.

**2. Hostility.** While several indicators of perceived hostility have been used in prior research (Dess & Beard, 1984), the measures developed and validated by Miller and Friesen (1984) were employed in this study.

Executives were asked to evaluate their entrepreneurship based on their organizational context using six items: age, resources, skills, size, access to channels of distribution and access to skilled labour. Responses to the six items were averaged, and the mean was used in the analysis. The international business environmental hostility (hereafter "IHOST") scale had a Cronbach  $\alpha$  of .70.

## **Results**

After presenting the means and standard deviations of the variables used, some multiple regression analyses were performed.

### ***Phase 1***

By analysing the means and standard deviations for each of the variables under study, the average size of the firms surveyed is almost 81 employees, which reflects a predominance of units with a minimal industrial base and a minority presence of micro-firms. The average age of the firms surveyed is 25 years, reflecting a relatively mature industrial plant. The table also shows the firm's available resources. It is observed that the main shortcomings are presented in available capital. Similarly, it is revealed that the strategic priority of the firms under study is quality improvement, followed by the search for being the first to introduce new products or services. Finally, concerning entrepreneurship, quite low scores are obtained. The firms do not seem to be very proactive, are unwilling to take risks and are generally not very innovative. The environments do not seem to be very dynamic, hostile and heterogeneous.

### ***Phase 2***

In order to ascertain the existence of significant differences between the characteristics of the organisation and its entrepreneurship, the study analysed the existence of significant differences in entrepreneurship due to a combination of diverse variables. To this end, the study performed a

multiple regression analysis. The organisational variables which best explain the willingness to take risks is the strategic importance attributed to being first mover and innovation as well as the availability of managerial competence. Similarly, there exists a significant positive relation between innovativeness and the importance given to being first mover and the availability of managerial competence as well as capital.

Proactiveness is positively related to the importance conceded to the fact of being first mover and finally, entrepreneurship is accounted for by the importance attributed to innovativeness and being first mover, the scarce importance attributed to the cost leadership strategy undercutting and the availability of managerial competence.

The results enable us to reject Hypothesis 1. There do not exist significant relations between the age of the firm and its entrepreneurship, or between the rest of the dimensions constituting this behaviour. Similarly, Hypothesis 2 is also rejected, as no influence is observed of the size of the firm on its entrepreneurship and this is noted in each of the individual dimensions. Hypotheses 3a, 3b and 3d are accepted but 3c is not. There exists a positive significant relation between the availability of resources in the firm and its entrepreneurship. In particular, management capital is associated to risk-taking and innovativeness just as occurs with the rest of the human capital. Similarly, there exists a positive significant relationship between financial capital and innovativeness. Finally, Hypothesis 4 is validated. The competitive strategy exerts a significant influence on entrepreneurship and especially the dimensions of risk-taking, proactiveness and innovativeness.

### **Analysis of subsets dynamism-based**

The analyses based on dynamism are assisting in determining the conditions in which the relationship between organisational characteristics and entrepreneurship are stronger I divided the sample into two groups. In particular, I analysed the effect of environmental dynamism in the relation between the characteristics of the organisation and entrepreneurship.

I therefore, divided the sample by the median of dynamism (median = 3). On the one hand, I considered the group of firms operating in not very dynamic surroundings and on the other hand, the group operating in highly dynamic environments. The results of the multiple regressions show the greater influence of the characteristics of the firms operating in dynamic environments on entrepreneurship, compared to those operating in more static environments. It is noted that the percentage of variance of entrepreneurship explained by the organisational characteristics is superior in the subset of firms operating in dynamic environments compared to those doing so in more stable environments.

More specifically, the availability of managerial talent and the strategic importance attributed to undercutting have a significant influence on the firms operating in dynamic environments, not so in those which develop their activity in more stable environments. However, the influence of the strategic importance of being first mover and innovation seems to be greater in more stable environments. Then, I compare the average levels of the implied variables in dynamic and stable environments, which results in producing a new set of data. Regarding the implied variables in the multiple regression analysis, the availability of managerial talent is greater in more dynamic environments, which enable us to think that the relationship between managerial talent and entrepreneurship is not necessary greater in dynamic environments.

Regarding the variable “importance of undercutting”, the score is higher in dynamic environments, so this can also explain the greater influence in dynamic environments. This enables us to reject Hypothesis 5a. The relation between organisational characteristics and entrepreneurship is not greater in dynamic environments. In relation to the rest of the scores, the levels of strategic variables and the availability of managerial talent and human resources are higher in dynamic environments. In this type of environment, there are smaller and younger firms and only the availability of other kind of resources – materials and capital – is lower. This enables us to accept Hypothesis 5b. In most of the variables, the levels are higher in environments that are more dynamic.

### **Analysis of subsets based environmental hostility**

The study analysed the effect of environmental hostility in the relationship between organisational characteristics and entrepreneurship. Hence, I divided the sample by the median of hostility (median = 4). I considered, on the one hand, the group of firms operating in not very hostile environments and on the other hand, the group operating in highly hostile environments.

First, observe the more significant influence of the organisational characteristics on entrepreneurship in the more hostile environments. It is noted how the percentage of variance explained by the organisational characteristics is greater in the subset of firms operating in hostile environments compared to those operating in environments characterised by their lower hostility. With regard to entrepreneurship, it is observed that in the environments presenting greater hostility, the relevant variable is the strategic importance attributed to obtaining superior quality. In less hostile environments, the availability of managerial talent and other variables of a strategic nature – being first mover – also become relevant in entrepreneurship.

The importance of quality is greater in environments that are more dynamic. This may explain the greater influence of this variable on entrepreneurship in more hostile environments. This enables us to reject Hypothesis 6a. The relationship between organisational variables and entrepreneurship does not seem to be greater in hostile environments, only the levels are higher. On the other hand, the average levels of the rest of the variables in both environments are mixed. Whereas the availability of human resources and the importance of innovation, quality and cost minimisation are greater in more hostile environments, the availability of capital, materials and managerial competence and the importance of being first mover, undercutting and advertising are greater in less hostile environment. On the other hand, entrepreneurship and the individual dimensions are lower in environments that are more hostile. This enables us to reject Hypothesis 6b. The levels of the variables are not always higher in environments that are more hostile.

### **Environmental heterogeneity-based analysis of subsets**

Finally, I analysed the effect of environmental heterogeneity in the relationship between organisational characteristics and entrepreneurship. Hence, I divided the sample by the median of heterogeneity (median = 4). I considered, on the one hand, the group of firms operating in not very heterogeneous environments and, on the other hand, the group operating in highly heterogeneous environments. Again, I note the more significant influence of the organisational characteristics on entrepreneurship in those firms operating in heterogeneous environments. I remark that the percentage of variance explained by the organisational characteristics is greater in the subset of firms operating in heterogeneous settings, compared to those operating in settings that are more homogeneous. In particular, regarding entrepreneurship I observe the stronger influence of the strategic importance attributed to being first mover and advertising on entrepreneurship of the firms operating in highly heterogeneous environments, compared to the effect on those firms operating in less heterogeneous environments. Moreover, the variables exerting some influence on firms operating in settings, which are not very heterogeneous are availability of managerial competence and importance of innovation. In order to confirm the results obtained with the analysis of the regressions, I made the average levels of the implied variables firms are younger and smaller and have a greater availability of resources, which enable us to accept Hypothesis 7b.

### **Conclusions**

The aim of this study has been to evaluate the influence of the organisational characteristics on a firm's entrepreneurship. The results suggest that the resources and competitive strategy of a firm have a certain influence on this behaviour. In this sense, there exists a positive relation between availability of resources and entrepreneurship. More specifically, the human and financial capital encourages entrepreneurship. From a strategic point of view, it is the firm, which compete using

differentiation, which develop a greater degree of entrepreneurship, compared to the firms competing using cost leadership. No significant differences were obtained in relation to age and size.

Furthermore, I can not conclude the greater impact of the strategic and organisational characteristics on entrepreneurship of those firms operating in the more dynamic, hostile and heterogeneous environments. The results enable us to think that there are the levels of the variables, which are, generally, higher in more dynamic, hostile and heterogeneous environments.

The findings from this study can contribute to a better understanding of entrepreneurial activity in organisation. The research supports many of the propositions and findings in the literature on entrepreneurship. The study is important in that provides multi-level data. The results may stimulate future research in several directions. First, the strategy concepts explored and used were validated but how useful are the concepts in practice?

The study was conducted with empirical data collected in 2004 from small firms in South Africa. Interpretations should be made with these facts in mind, but is it possible to make generalisations to other countries, time periods and firm sizes? In some aspects, relationships varied with firm size, the South African small business environment probably differ from what is found in other countries (Gnyawali and Fogel, 1994) and the economy and challenges for firms in the mid-1990s were different from the years before. I still think that the findings can be generalised beyond the empirical setting, but they should be subject to validating research in other settings.

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