

MILES AND SNOW'S STRATEGY MODEL IN THE CONTEXT OF SMALL FIRMS

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Abstract

The literature on strategy has focused a great deal of attention in the quest for a taxonomy of generic strategies (Hatten & Schendel, 1977; Herbert & Deresky, 1987; and Miller & Dess, 1993). A generic strategy can be seen as a broad categorisation of strategic choices with ample applicability across industries and organisational forms (Herbert & Deresky, 1987). On this study, the model proposed by Miles and Snow (1978) was adopted to describe small firms' competitive strategies. Miles and Snow have produced a typology of competitive strategies. Miles and Snow proposed that firms in general develop relatively stable patterns of strategic behaviour in order to accomplish a good alignment with perceived environmental conditions. Their typology involves four strategic types: defenders, prospectors, analysers and reactors. Data were collected with a sample of 150 Brazilian small firms' owner-managers using a questionnaire adapted from Conant, Mokwa and Varadarajan (1990). Competitive strategies identified in this study gave additional evidence in support of Miles and Snow's model of existence of four types of generic strategies in a competitive environment composed mainly of small firms.

Introduction

The literature focusing on small firms has increased substantially in the last three decades. Most reported research has dealt with problems and difficulties faced by owners of small businesses, as well as with the advantages and positive traits linked with this type of organisation (Scase & Goffee, 1989; Stanworth & Gray, 1991).

Strategy formulation and strategic planning in small enterprises has been a topic of quite a large number of studies. Robinson and Pearce (1984), for instance, presented a classification including four research thrusts on small firm strategic planning, namely: (i) Strategic Planning Practices which included papers focusing on the nature of the strategic planning process in small firms, and the decision making approaches adopted by the entrepreneurs; (ii) Value of Planning which considered how strategic planning and performance of small businesses were related; (iii) Specific Features of the Planning Process that focused on specific aspects of strategic planning, such as the search for external information and the use of consultants; and (iv) Content of Strategy that dealt with types of strategy adopted by entrepreneurs in different environment settings.

As the classification proposed by Robinson and Pearce suggests, most of the papers in small firms strategic management have dealt with issues related to the strategic process. Only one of their four research thrusts indicated a concern with issues related to strategy content. Nevertheless, the analysis of the type of strategies followed in different conditions by small firms adds considerable knowledge to the field because it goes beyond the level of general description of the strategy formation process. On the other hand, if significant positive relationships between strategies, context, and small firm performance can be found this may have profound implications in terms of managerial practice.

Thus, this paper discusses the results of a study dealing with competitive strategies adopted by ownermanagers of small firms. The model proposed by Miles and Snow (1978) was adopted as a theoretical background to describe small firms' competitive strategies. Results gave additional evidence in support of Miles and Snow's model of existence of four types of generic strategies in a competitive environment composed mainly of small firms.

Research on small firm strategic management

When Robinson and Pearce (1984) published their review on research thrusts in small firms' strategic planning very little was reported on the strategy content thrust. In my literature survey, a reasonable number of studies were found to be dedicated to different aspects of strategy content on small firms. This seems to indicate a great awareness among researchers of the importance of content analysis to a better understanding of strategic behaviour in small firms. This thrust deals mainly with types of strategy adopted by entrepreneurs in different environmental settings and their potential association with firm's performance. I will comment upon a number of these studies to indicate the prevailing concern in this research thrust.

Dilts and Prough (1989) conducted a comparative study to check the differences on the strategic orientation of small and large American travel agencies. Their findings showed that: *"managers of small and large firms were found to perceive the effectiveness of various strategies differently"* (Dilts & Prough, 1989: pp. 34). The larger travel agencies favoured differentiating offerings aggressively, establishing closer relationships with preferred suppliers and de-emphasising unattractive services or markets. The smaller ones, however, put more emphasis on joint political action with trade associations in order to create a more favourable business climate (Dilts & Prough, 1989).

Chaganti (1987) designed a comparative study of strategies adopted by 192 small firms in different industry growth environments. This study allowed Chaganti to conclude that the environment has a contingent role on strategy formulation. In growth industries the most profitable strategies were: low cost production; low product innovation frequency; less use of patents; and a higher percentage of sales in local markets. Mature industries indicated only competitive pricing as an appropriate strategy. Finally, in declining industries, the most profitable strategies focused on broader product lines, higher firm image, and higher expenses with sales and management.

Davig (1986) studied successful and unsuccessful strategies adopted by small firms in maturing industries. His approach to identifying the strategy was based on paragraph descriptions of the four Miles and Snow's generic strategies which were presented to the CEO of each firm, i.e., a self-typing approach that had been previously adopted by Snow and Hrebiniak (1980). Data were obtained from a sample of 60 firms from the apparel, foundry, and fabricated metal products. Results indicated that firms following the prospector and defender strategies achieved the best performance with respect to growth in profits, while reactors were the lowest performers. Analyzers' performance results were between those for reactors and the other two types. Differences on sales growth, although in the same direction, were not statistically significant for this sample. Contrary to the conclusions of Smith, Guthrie & Chen (1986), firm size did not appear to have any relation to performance, but the larger companies tended to be either analyzers or prospectors (Davig, 1986). This study showed that the four different strategic types could be found among a sample of small firms, and thus, in a way, dismisses the speculation advanced by Smith, Guthrie and Chen (1986) that Miles and Snow's typology could be seen as sequential stages of strategy development, i.e., defender strategies would be linked to small firms, and prospector strategies to larger firms.

Rugman and Verbeke (1987) argued against the use of Porter's (1980) model of competitive strategy in the context of small firms and advocated the adoption of Miles and Snow's one. For them, small firms can only adopt a focus strategy and so, the choice between overall cost leadership, overall differentiation, and focus as proposed by Porter is not an issue in a small enterprise. They exemplify the application of Miles and Snow's framework to the Canadian electrical distribution industry. A sample of firms (the authors do not indicate the exact number) in this industry were studied and the most dominant strategy in the industry was found to be the prospector type. Many firms were identified as reactors, and a few as defenders. Contrary to what would be expected, no analyzers were identified (Rugman & Verbeke, 1987).

Lyles, Baird, Orris and Kuratko (1993) describe a more comprehensive study dealing with the relationship between planning formality, strategic decision making process, and content of strategies and performance. A sample of 188 firms from a diverse range of industries located in the Midwestern United States provided data that allowed for the testing of the expected relationships. The results indicated that formal planners differed from nonformal planners in the degree of emphasis put on dimensions of strategic decision making and strategic choices. A wider range of strategies was adopted by formal planners. They also put greater emphasis on improving the quality of the strategic decision making. Formal planners, specifically, were more interested in co-operative strategies than non-formal planners (Lyles, Baird, Orris & Kuratko, 1993).

Slevin and Covin (1987) reported a comparison of competitive tactics adopted by entrepreneurial firms in high-tech and low-tech industries. Interested on investigating whether the content of strategies adopted by high-tech and low-tech entrepreneurial firms would be significantly different, the authors collected data from 79 recently created entrepreneurial firms in the western Pennsylvania area. They investigated as well, if there were any differences regarding to competitive tactics adopted by low and high performing firms in both kinds of industries. The findings indicated that: *"entrepreneurial firms in hightech industries tend to attack their environments, adopting a proactive, aggressive, innovative, focused and future-oriented strategic posture. On the other hand, entrepreneurial firms in low-tech industries adopt a more mechanistic, structured, and standardised approach to their environments"* (Slevin & Covin, 1987: pp. 93). No significant differences were found in terms of competitive tactics adopted by high and low performing firms in both industries (Slevin & Covin, 1987).

These studies reveal a fragmented approach to the study of strategy formation in the realm of small firms. Most of them have dealt with narrowly defined aspects of strategy content (Chaganti, 1987; Stoner, 1987; Dilts & Prough, 1989). The integration of their findings is not easy. More integrative frameworks were adopted by Rugman and Verbeke (1987) and Davig (1986). These studies have adopted Miles and Snow's (1978) framework and have showed the possibility of studying strategic behaviour in small firms based on well-established theoretical models.

Miles & Snow typology of strategies

The quest for a taxonomy of generic strategies is a characteristic of much of the literature on strategic management (Hatten & Schendel, 1977; Herbert & Deresky, 1987; and Miller & Dess, 1993).

A taxonomy of generic strategies that has attracted attention is that due to Miles and Snow (1978). In a literature survey, I have identified over 50 papers that have applied Miles and Snow's model in the period between 1987 and 1994. A strength of this taxonomy is that it specifies relationships among strategy, structure and process in a manner that allows the identification of organisations as integrated wholes in interaction with their environments. Furthermore, I was not able to find a single reference in my literature search that presented any major conceptual criticism of Miles and Snow's proposed taxonomy.

It is a well-researched taxonomy and can be selected with less need to explore its operationalization status. The diverse empirical studies that have applied Miles and Snow's model have contributed to identifying it as one having good codification and prediction strengths (Shortell & Zajac, 1990; James & Hatten, 1994). Organisations can be classified into one of the four theoretical categories easily, and their behaviour can be predicted on basis of their classification as a defender, prospector, analyzer or reactor organisation. Finally, Miles and Snow's model has been proposed as specially relevant for the analysis of small firms' strategic behaviour (Davig, 1986; Rugman & Verbeke, 1987; Olson & Currie, 1992).

Miles and Snow have produced a typology of business-level strategies. As opposed to corporate-level strategy, i.e., decisions related to what businesses should the firm be in, business-level strategy is related to how the organisation competes in a given business (Hambrick, 1983). Miles and Snow proposed that firms in general develop relatively stable patterns of strategic behaviour in order to accomplish a good alignment with the perceived environmental conditions. Their typology involves four strategic types: defenders, prospectors, analyzers and reactors. The authors have described them as follows:

"1. Defenders are organisations which have narrow product-market domains. Top managers in this type of organisation are highly expert in their organisation's limited area of operation but do not tend to search outside of their domains for new opportunities. As a result of this narrow focus, these organisations seldom need to make major adjustments in their technology, structure, or methods of operation. Instead they devote primary attention to improving the efficiency of their existing operations.

2. Prospectors are organisations that almost continually search for market opportunities, and they regularly experiment with potential responses to emerging environmental trends. Thus, these organisations often are the creators of change and uncertainty to which their competitors must respond. However, because of their strong concern for product and market innovation, these organisations usually are not completely efficient.

3. Analyzers are organisations that operate in two types of product-market domains, one relatively stable, the other changing. In their stable areas, these organisations operate routinely and efficiently through use of formalised structures and processes. In their more turbulent areas, top managers watch their competitors closely for new ideas, and then they rapidly adopt those that appear to be the most promising.

4. Reactors are organisations in which top managers frequently perceive change and uncertainty occurring in their organisational environments but are unable to respond effectively. Because this type of organisation lacks a consistent strategy-structure relationship, it seldom makes adjustment of any sort until forced to do so by environmental pressures". (Miles & Snow, 1978: pp. 29).

Miles & Snow have also proposed that the four different types of strategy would differ in three basic dimensions of what they have called the adaptive cycle. Strategy differentiation is based on distinct approaches to: a) entrepreneurial problems: definition of a market-product domain; b) engineering problems: choice of technical systems; c) administrative problems: related to organisational structure and processes.

Central to Miles and Snow's model is the specific relationship between the four strategic types and environment. Coherent with the environment enactment process, defenders will carve a niche in the market where stability can be found even in more dynamic industries, whereas prospectors will be the source of instability in an industry by constantly producing innovations. Hambrick (1983) found that, as predicted by Miles and Snow's model, prospectors tend to thrive in innovative, dynamic environments, capitalising on growth opportunities, whereas defender type firms were most prevalent in stable, mature, and noninnovative industries.

Miles and Snow argue that three of these strategic types are stable forms of organisation, namely, defender, analyzer and prospector firms. If there is an alignment between chosen strategy and organisational structure and processes, than any of these strategies may lead the organisation to be an effective competitor in a particular industry. However, a non-alignment between strategy and structure, will result in the firm being an ineffective competitor in the industry, characterising unstable forms of organisation which Miles and Snow have termed Reactors. The inconsistency of reactor strategies may stem from at least three sources: *"(1) management fails to articulate a viable organizational strategy; (2) a strategy is articulated but technology, structure and process are not linked to it in an appropriate manner; or (3) management adheres to a particular strategy-structure relationship even though it is no longer relevant to environmental conditions"* (Miles & Snow, 1978: pp. 82).

However, at least one study has found that reactors could outperform the other three types (Snow & Hrebiniak, 1980), leading some scholars to suggest that this type of strategy may be suitable to environments characterised by a low degree of movement or change among their components and by the lack of connection among these components (Zahra & Pearce, 1990). Another, possibility is that reactors may also include in their classification firms that show a capacity to change rapidly -- i.e. to show flexibility -- presumably a positive characteristic (Kanter, 1989).

Finally, Miles and Snow have proposed the analyzer strategy as a unique combination of the prospector and defender types. They have put these two types of organisation at opposite ends of a continuum of adjustment strategies, with the analyzer being somewhere in the middle of this continuum as a viable alternative strategy

Empirical applications of Miles & Snow's generic strategies

As I have indicated earlier, a great deal of attention to Miles and Snow's taxonomy has been paid by strategy scholars. I will first comment on a thorough analysis of research evidence related to Miles and Snow model made by Zahra and Pearce (1990). I will then proceed to describe in more detail the results of a number of empirical works which I judge representative of the concerns that have attracted attention of researchers. These works include: Hambrick (1983), Smith, Guthrie and Chen (1986), Conant, Mokwa and Varadarajan (1990), Parnell and Wright (1993), Beekun and Gin (1993), and Schenk (1994).

Zahra and Pearce (1990) carried out a comprehensive study aiming to evaluate the research evidence for the Miles-Snow typology based on an analysis of 17 empirical studies. According to Zahra and Pearce (1990), results from a high number of studies have strongly supported Miles & Snow's propositions that four types of different strategies exist in different environments.

The hypothesis that reactors will be outperformed by the other three types seem to have been strongly supported albeit the moderate coverage it has received in the studies analysed. Other dimensions such as differences in domain definition, production technology choice, environmental analysis, functional importance, and top management team characteristics among the four strategic types have received low to moderate attention and, thus, have resulted in weak or mixed support (Zahra & Pearce , 1990).

Most of the studies analysed by Zahra and Pearce (1990) have concentrated heavily on classifying the firms under analysis into different groups based solely on the entrepreneurial problem, paying little attention to the other two dimensions, i.e., the administrative and engineering problems. However, Miles & Snow (1978) have posited that the performance of the firms will be dependent on the alignment among the solutions adopted for each type of problem. Although the entrepreneurial dimension is believed to be the key dimension underlying the typology (Hambrick, 1983), this reliance on a partial measure may be leading to an incorrect classification of firms' strategies by researchers who consider only this dimension of Miles & Snow's model. Miles and Snow's model proposes that

when the solutions to the three problems are not aligned, the firm's strategy is characterised as a Reactor one. Bearing, this in mind, researchers who have adopted only the entrepreneurial dimension to classify their respondents' strategies, may be getting at best an incomplete picture, and thus, their research results are open to question.

Hambrick (1983) studied how industry environment affected the effectiveness of different strategies based on Miles and Snow's taxonomy. Applying an objective data approach (data of an economic and financial nature). Hambrick studied 1452 different businesses from the PRIMS database. Concentrating on defenders and prospectors, Hambrick designed a measure of strategy based on the percent of sales derived from new products for the business minus the percent of sales derived from new products for the three largest competitors. Defenders were considered those firms whose score in this measure was less than or equal to -5, and prospectors were firms whose score was more than or equal to +5. Businesses were matched against their competitors along 4-digit SIC codes. Contrary to what Miles & Snow proposed the results indicated that defenders so defined outperformed prospectors in stable, mature and non-innovative industries, while prospectors performed better in innovative and dynamic environments. Prospectors presented higher product R&D expenses and marketing expenses as would be expected, while defenders produced high capital intensity, high employee productivity and low direct costs. Hambrick's study, in spite of bringing new light to Miles & Snow's typology, failed to address the behaviour of two strategic types: analyzers and reactors.

Smith, Guthrie and Chen (1986) applied a multidimensional (cluster analysis) approach, gathering data on a number of dimensions to verify the extent to which four clusters resembling Miles & Snow's typology would emerge. Secondly, they tested the relationship between organisational performance and strategic type, as well as the relationship of these two variables with organisational size. A sample of 47 electronic manufacturing firms provided data for this study collected through structured interviews with CEOs and other toplevel managers. The results indicated a support for the typology. Thus, firms identified as having prospector strategies presented the following characteristics: *"an unstable customer base, a changing product mix, a competitive edge in innovation, a "creating change" approach to their customer base and an aggressive attitude toward growth. Furthermore, this group is managed primarily by research and development personnel who are relatively young, less tenured and who have been recruited from outside of the organisation. On most measures this cluster of firms appears to be following a prospector strategy"* (Smith, Guthrie & Chen, 1986: pp. 46)

The cluster of companies identified as analyzer had traits that resemble Miles & Snow's model demonstrating a balanced blend of product variety and diversity; top level managers equally divided among marketing, research and development; and combinations of high and low scores on other dimensions. Defender firms were identified in a cluster whose characteristics involved a stable product base, an aggressive approach to maintaining their customer base, a low price competitive edge, and a product design approach that is based on production capability. Furthermore, the top management team was composed of managers with general management backgrounds. Finally, the reactors firms were identified by the majority of firms in this group indicating a lack of consistent approach to the entrepreneurial, engineering, and administrative problems.

The data supported Miles and Snow's contention that analyzers, prospectors and defenders outperform reactors. An interesting result was obtained on the relationship among strategy, size and organisational performance. Small defenders outperformed analyzers and prospectors, prospectors performed better as medium to large firms, and analyzers performed better as large ones. This, could indicate, according to the authors, that Miles & Snow might have captured different stages of strategy development rather than a typology of alternate strategic behaviours (Smith, Guthrie, and Chen, 1986). In view of the small sample size, the results have to be treated as exploratory. However, the evidence suggests that the effectiveness of a specific strategy may be partially associated with organisational structures.

Thus, taken together, the results (Hambrick, 1983; Smith, Guthrie & Chen, 1986) support the existence of stable patterns of strategic behaviours, and groupings of firms according to strategies hypothesised by Miles and Snow (1978). However, the relationship between strategy and performance is less clear-cut. We have to reject any simple relationship on the evidence of these studies. Further work is required to explore intervening variables -- internal to the organisation and in the environment. This is a point also raised by Zahra and Pearce (1990).

Conant, Mokwa & Varadarajan (1990) designed and tested a multi-item scale for operationalizing Miles & Snow's generic strategies. This questionnaire addresses the eleven dimensions contained in the three different problems faced by each organisation's management team when choosing a strategy, i.e., the entrepreneurial, administrative and engineering problems as proposed in Miles & Snow's model. The instrument was originally tested in a single industry study of Health Maintenance Organisations (N = 150). The results indicated that defenders, prospectors and analyzers performed equally well in terms of profitability and outperformed reactors.

The most significant contribution of Conant, Mokwa and Varadarajan's work was in the thorough development of a multi-dimensional measure of Miles and Snow's typology of generic strategies. Their instrument was used in another paper that is described next. Their study gave also additional evidence of the existence of four generic strategies as hypothesised by Miles and Snow (1978).

Parnell and Wright (1993) addressed the relationship between strategy and performance in a volatile, dynamic and growing industry -- catalogue and mail-order houses. Their approach was based on the self-typing questionnaire developed by Conant, Mokwa & Varadarajan (1990). The final sample included 104 respondents (CEOs) and results supported the expected relationships, i.e., reactors were outperformed by the three other types, and prospectors were the best performing companies in terms of sales growth in the sample. Analyzers, on the other hand, produced higher return on assets than the other strategic types. However, this was a one-industry study and the expected relationships may differ for other industries.

Beekun and Ginn (1993) sought an extension of Miles and Snow's model. The authors tried to complement the intraorganizational configurations proposed by Miles & Snow studying how firms align themselves with the environment by developing both tight and loose interorganizational linkages. The expected relationships tried to link resource and information exchange patterns with the choice of a defender, analyzer, prospector, or reactor strategy. Data from a sample of 86 Acute Care Hospitals in America provided support for the idea that certain strategic types are dominant in environments with different levels of turbulence. As in the study by Ginn (1990) prospectors were more frequent in a high turbulent environment and defenders in a less turbulent one. Partial support was gained to the expected relationships and results indicated that: *"when the environment was placid defenders were the most tightly coupled with other actors; prospectors, analyzers, and reactors were loosely coupled and did not actively search information. In response to environmental turbulence, both prospectors and analyzers acted as the defenders did by stressing information gathering. By contrast, reactors loosened external linkages"* (Beekun & Ginn, 1993: pp. 1310).

Miles and Snow's model proposes that defenders, prospectors, and analyzers will outperform reactors assuming that their strategies are well implemented. However, the implementation of strategies is one area that has not been extensively researched as Zahra & Pearce (1990) have rightly noted in their review of empirical evidence related to Miles & Snow's typology. The studies described above, for instance, have not dealt with strategic implementation issues and have, implicitly assumed, that the comparisons were being made among companies whose strategies were adequately implemented.

Schenk (1994) tried to extend Miles & Snow's typology to cover technology strategy. The information collected with 18 German and 23 British biotechnology companies allowed for the identification of three clusters which resembled defender, prospector and analyzer strategies. These groups differed on two basic dimensions: new product development and research orientation. The so-called *defenders* were low on basic research, high on making use of contract research, pursued process improvements and were lowest on new product development. The *prospectors*, on the other hand, were higher in basic research, and lower on applications engineering. The third group were inbetween these two. An interesting result was that the groups were related to the differing nationalities: defenders were German companies; prospectors British ones; and analysers composed a mixed group. This seems not so much a case of extending Miles & Snow's typology to cover technology strategy, as an investigation of the processes adopted by companies to solve what Miles & Snow have called the engineering problem. It is an example of how to investigate the implementation processes adopted by companies adopting each of the different strategic types indicated as important by Zahra & Pearce (1990). But in this case the examination was restricted to the engineering problem, and did not address the entrepreneurial and administrative domains.

In summary, the review of empirical evidence related to Miles and Snow's taxonomy of generic strategies provides a strong support for the proposition that four different generic strategies exist in a variety of environmental settings. Furthermore, dynamic environments will have a higher proportion of prospectors, while defender type firms will be predominant in more stable industries. Conflicting evidence has been reported in relation to performance differences among the four strategic types. It seems that variables of both an internal and external nature may influence this relationship, such as, firm size or environmental turbulence.

Research method

Data were collected with two samples of small firms' owners running their businesses in two Brazilian cities, comprising 150 respondents. Their owner-managers were asked to fill in a short questionnaire adapted and translated to Portuguese from Conant, Mokwa and Varadarajan (1990) which aimed at establishing the preferred generic strategies according to the Miles and Snow (1978) taxonomy of strategic types.

Sample one, with 108 respondents, came from eight different business sectors (computer services; food industry; supermarkets; chemical industry; clothing industry; clothes retailers; tourist agencies; and metallurgy industry) located in a large city in the south of Brazil. Sample two, with 42 respondents, is represented by two business sectors, lumber extraction and furniture industry, located in a less developed city in the North of Brazil.

The questionnaire had eleven questions with four alternative answers for each of the two environmental conditions. These questions represented the eleven dimensions identified by Miles and Snow as being part of what they called adaptive problems: entrepreneurial, administrative and engineering. Each alternative answer for the questions was related to one of the four strategic types: analyzer, defender, prospector and reactor. The majority of answers in one of these four categories was used to indicate the preferred generic strategy for each firm. In case of numeric ties the respondent was classified as having an analyzer style. In the instance of a tie between reactor choices and any of the other three types, the choice was for the reactor strategy. These rules, as Conant, Mokwa and Varadarajan (1990) have explained, are in accordance with Miles and Snow's model.

Conant, Mokwa and Varadarajan (1990) reported reliability coefficients for the 11 questions ranging from .56 to .82, with a mean reliability of .69. Validity checks were made via assessment by a panel of organisation theory and strategy researchers, in an iterative manner, until complete agreement by all judges on the appropriate correspondence of each question and response options to Miles and Snow's strategic dimensions (Conant et al, 1990: pp. 372).

For the Portuguese version of the questionnaire, a content validity check of questions was performed using a cluster analysis approach. Binary variables corresponding to the presence or absence of choice for each of the four alternative options in each of the eleven questions were created. The same was done for the overall classification of the firm as a defender, analyser, prospector or reactor strategy. Cluster analyses were run using the Ward method for one of the samples (Norusis, 1990). The forced choice of four clusters was adopted in accordance with the number of strategic types in Miles & Snow's model. Results of the cluster analysis indicated that 79,2% of prospector cases were present in the same cluster, while 78,9% of reactors clustered together with one case of analytical strategy. Overall, the four clusters allowed for the correct classification of 59,2% of the cases. Although very positive, this result indicates the need for further refinements in the Portuguese version of the questionnaire.

Respondents in one of the samples provided also their perceptions about turnover growth in the last five years and number of employees. These data were used as surrogate measures of firm performance.

Results

As can be seen in table 1, and in accordance with Miles and Snow's model, small firms' owner-managers in both regions adopted four types of competitive strategies. The most common strategy, in both samples was the analyzer one (40.7%). The least frequent strategy, again for both regions, was the defender type (14.7%).

If the samples are looked at separately, one can notice that for sample one, located in a more developed region of Brazil, the number of reactors was relatively lower than those of sample two. Sample two is located in a region less developed and composed of two business sectors which are relatively more stable.

Table 1 -- Competitive Strategies				
Strategy	Sample 1 (n)	Sample 2 (n)	Total (N)	%
Defender	16	6	22	14.7
Prospector	24	11	35	23.3
Analyser	48	13	61	40.7
Reactor	20	12	32	21.3
Total	108	42	150	100.0

In table 2, figures indicate the number for each strategic types present in each of the business sectors investigated. On the other hand, two business sectors in sample one, presented only three strategic types. In the supennarket sector no prospector companies were found, while in the computer services no defender companies were found.

Table 2 -- Competitive Strategies By Business Sector				
	Strategy			
Business Sector	Defender	Prospector	Analyzer	Reactor
Computer Services	0	6	6	1
Food industry	4	6	11	4
Supermarket	3	0	8	3
Chemical industry	3	3	6	3
Clothing industry	2	4	7	4
Clothes retailers	1	1	4	1
Tourist agency	2	2	5	2
Mettalurgy industry	1	2	1	2
Furniture industry	3	2	6	5
Lumber extraction	3	5	10	8
Total	22	31	64	33

Additional data collected with sample one indicated that reactor firms produced the worst performance, i.e., 35% of them presented a decrease in their turnover in the last five years. The other presented a better performance, since less than 10% of them had diminishing turnover in the last five years. These results give additional evidence in support of Miles and Snow's contention that defenders, analyzers and prospectors are more effective strategies in any business environment. Figures are shown in table 3.

Table 3 -- Strategy and performance			
	Turnover behaviour in last 5 years		
Strategy	Growth	Stability	Decrease
Defender	9	6	1
Analyzer	33	12	3
Prospector	18	5	1
Reactor	9	4	7
Total	69	27	12

The medium number of employees, taken as a measure of performance (growth) indicated as well the best results for prospectors, defender and analysers. Prospectors produced the largest average number of employees (9.5). On the other hand, reactors produced the lowest average (4.9), while defenders and analysers produced averages of 5.8 e 7.3, respectively. This can also be seen looking at the highest number of employees for each type of strategy. For reactors this was 12, while for prospectors it was 58, defenders 23 and analysers 27.

Finally, the overall majority of the companies were more than two years old (95,3%) and 66.7% of them had passed the 5 year barrier and can be considered mature companies. Thus, the results indicate that in a small business context one can find all four strategic types proposed in the Miles and Snow's model.

Conclusion

This paper gave additional evidence in favour of the application of Miles and Snow's model of strategic choices in research with small firms in a varied set of industries. As evidenced in the model discussion, any business environment presents organisations competing in similar ways allowing for their classification as defenders, analysers, prospectors and reactors. In this sense, it has brought additional arguments to dismiss Smith, Guthrie and Chen's (1986) speculation that Miles and Snow's typology could be seen as sequential stages of strategy development, i.e., defender strategies would be linked to small firms, and prospector strategies to larger firms. Considering that size and age of the company may be associated, the figure of 66.7% of the companies being older than 5 years indicates that all strategic types in Miles and Snow's model are options for this business size. Another proposition of the model confirmed in this study deals with the lower effectiveness of reactor strategies in comparison with the others. As shown by two criteria, firms that adopted defender, analyser and prospector strategies produced a better performance, especially in terms of turnover growth, than reactor ones.

Finally, although the small numbers of respondents in each business sector prevent any strong assertion, results seem to indicate that the proportion of strategic types may vary with environment dynamism. No measure of such variable was used in this study. Nevertheless, the fact that in the supermarket sector no prospector companies were found, and in the computer services industry no defender companies were identified, seems to indicate that results in this study are in the same direction of other studies that have dealt with environment dynamism (Hambrick, 1983).

Finally, a couple of limitations must be mentioned in this paper. First, data on company performance are based solely on owner-managers' perceptions, and have not been checked against more objective data. Nevertheless, the number of employees taken as a performance measure attenuates this limitation.

On the other hand, the questionnaire adopted and translated from Conant, Mokwa and Varadarajan, presented a validity check of almost 60%, an acceptable degree, but one that deserves to be bettered.

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