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João Pedro Couto, Vitor Fernando da Conceição and Mário José Amaral
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Article abstract

Considering the subsidiaries of multinational companies, a study of the conditions affecting the strategic choice is conducted. Beginning with an analysis of the taxonomies of subsidiaries, two strategic models were selected to test three hypotheses: one, regarding the variables that influence the strategic choice; a second, about the relationship between the two classification models and a third, about the influence of the type of subsidiary on performance. This study involved five European countries, namely the United Kingdom, France, Germany, Sweden and Portugal. It concludes that nation based variables have important influence in the determination of subsidiary strategic roles. This influence is present especially in terms of national culture with variables like individualism and uncertainty avoidance, while analyzing relationships, and age and technological capacity, while analyzing functions. We also found that both models used are independent, suggesting that they are complementary models and not substitutes.

Strategic Choice of the Subsidiaries: Contextual and Operational Factors

by

João Pedro Couto

University of Azores, Portugal

Vítor Fernando da Conceição Gonçalves

Technical University of Lisbon, Portugal

and

Mário José Amaral Fortuna

University of Azores, Portugal

Considering the subsidiaries of multinational companies, a study of the conditions affecting the strategic choice is conducted. Beginning with an analysis of the taxonomies of subsidiaries, two strategic models were selected to test three hypotheses: one, regarding the variables that influence the strategic choice; a second, about the relationship between the two classification models and a third, about the influence of the type of subsidiary on performance. This study involved five European countries, namely the United Kingdom, France, Germany, Sweden and Portugal. It concludes that nation based variables have important influence in the determination of subsidiary strategic roles. This influence is present especially in terms of national culture with variables like individualism and uncertainty avoidance, while analyzing relationships, and age and technological capacity, while analyzing functions. We also found that both models used are independent, suggesting that they are complementary models and not substitutes.

INTRODUCTION

With the disappearance of borders in Europe and the world it is important to verify the implications for management. The circulation of capital together with the increased mobility of persons and goods has led many companies to internationalize their business in a way that no longer has to do with only the commercialization of products world wide, but also with development and production as well. In Europe the construction of the European Union constitutes a decisive force for integration, causing historical, cultural and economic differences to fade.

The important of world commerce and the activity of multinational companies made these issues one of the priorities for management research. Managing multinational companies represents a set of themes that have been in constant evolution in recent years and presents new challenges for managers. Global economics determine the appearance of new approaches and contribute to expand the concept of management.

In this context, it is necessary to develop a global activity, maintaining a flexible response to local demand and creating new products and processes in a systematic manner that has been described as the economy of knowledge. These challenges imply that companies have to manage a network of subsidiaries, where the strategic roles are coordinated and optimized at a global level. These tasks and their systematic improvement demand forms of coping with different cultures, multiple national realities and distinct organizational models, in a process where communication and interdependency are fundamental elements for business success. There are challenges and unique tasks that constitute a very rich field of research, in which new models and processes of management are developed.

LITERATURE REVIEW

Research with emphasis on the multinational company can be found in three different literature mainstreams (Birkinshaw, 1995): a first one, about the relationship of strategy and structure; a second one, about the relationship between the subsidiary and the parent company and; a third one, about the decision making process.

The first current was initially developed by Chandler (1962), relating structure and strategy and was followed by Stopford and Wells (1972). Later studies from this current are the works of Egelhoff (1982, 1988) and Daniels, Pitts and Tretter (1984, 1985). The second current deals with the concept of autonomy of the subsidiary (Hedlund, 1981; Negandhi e Baliga, 1981), the concept of coordination (Piccard 1980; Welge, 1981) and control (Youseff, 1975). The works of Prahalad (1976), Doz (1976), Bartlett (1979), Ghoshal (1986) and Hedlund (1986) form the core of the third current.

These studies were later developed in the perspective of the subsidiary role by Ghoshal (1986) who states that innovation is the result of an institutionalized process of communication and normative integration, by Bartlett and Ghoshal (1986), Gupta and Govindarajan (1991), and Jarillo and Martinez (1990) who analyzed the pressure for integration and the pressure for local response.

The perspective of the strategy of the subsidiary is taken up by Crookwell (1986), D'Cruz (1986), Poynter and Rugman (1982) and White and Poynter (1984, 1990). White and Poynter (1984) claim that managers have to adjust their strategies to cope with the local situation and can influence the development of the subsidiary.

The approach taken in this paper follows the line of work developed by Prahalad (1976), Doz (1976), Bartlett (1979), Ghoshal (1986) and Hedlund (1986) and the subsidiary analysis in line with the development of classification models, by Prahalad and Doz (1976), White and Poynter (1984), Bartlett and Ghoshal (1986), Gupta and Govindarajan (1991), Kim and Mauborgne (1991, 1993a, 1993b), Jarillo and Martinez (1990), Roth and Morrison (1992), Birkinshaw (1995, 1996) and Taggart (1997a, 1997b).

HYPOTHESES

Three propositions were considered: a first one, about the variables that we consider that can determine the strategic choice of the subsidiaries; a second one, regarding the relationship between the models of classification of the subsidiaries and; a third one, about the relationship between the strategy adopted and the subsidiary's performance.

In proposition 1 it is maintained that: *the strategic role of the subsidiaries of industrial multinational companies varies according to their location and characteristics.*

Within this proposition we propose to test the following hypotheses:

- H1. The strategic roles change according to the country where the subsidiary operates.
 - H1a. Due to economic development determinants;
 - H1b. Due to national cultural determinants;
- H2. The strategic roles change according to the type of industry of the company;
- H3. The strategic roles change according to the technological capacity of the subsidiary;
- H4. The strategic roles change according to the subsidiary's age;
- H5. The strategic roles change according to the parent company's location

The first hypothesis, about national elements, economic or cultural, is founded in a vast collection of literature where the works of Hofstede (1987), Ronen and Shenkar (1985), Kogut and Singh (1985) and Shneider and Barsoux (1997) are some of the best known. Other authors like Porter (1998) and Dunning (1998) stress the importance of national elements in the international location and the importance of international “clusters” to the composition of subsidiary portfolios as a factor of great competitive relevance. The second hypothesis, about the influence of industry, is referred to in the works of Porter (1986), Prahalad and Doz (1987), and Bartlett and Ghoshal (1989), as a determinant of company strategy.

The third hypothesis is related to the aspects of technology and innovation and has been stressed by various authors (Forsgren, Ulf and Johanson, 1992; Kogut and Zander, 1993; Dunning, 1992; Papanastassiou and Pearce, 1996, 1997). The fourth hypothesis introduces another determinant, the element of age and time. This concept of a life cycle in the strategic role of the subsidiary is found in the works of Etemad and Dulude (1986), Young, Hood and Dunlop (1988), Bartlett and Ghoshal (1989), Roth and Morrison (1992), Taggart (1996) and Birkinshaw (1996). The fifth hypothesis introduces the type of organization model of the parent company as a determinant of the subsidiary strategy. For this purpose we considered the classification of the companies in three distinct models, according to their relative proximity: a European model, an American and a Japanese model.

Proposition 2 states that ***the classification models used in this work are complementary and the variables that distinguish the categories of subsidiaries are different for each model.***

This proposition considers the analysis of the various models of subsidiary typology and how they correspond to one another. For this analysis two models were chosen: the White and Poynter (1984) model and the autonomy and procedural justice model developed by Taggart (1997a).

The White and Poynter (1984) model uses the following categories: “marketing satellite”; “miniature replica”; “rationalized manufacturer”; “specialized producer” and “strategic independent”. The Taggart (1997a) model considers two vectors: autonomy and procedural justice. The subsidiaries are classified as: “partner”; “collaborator”; “militant” and “vassal”.

The choice of these models was made considering that there are two perspectives in the models existing in the literature: a first perspective, represented by the White and Poynter (1984) model, that defines alternative strategies for subsidiaries and, a second perspective, represented by Taggart (1997a), that emphasizes the relationship between the subsidiary and the parent company, therefore establishing different types of relations and not alternative strategies. The White and Poynter (1984) model was chosen, among others that also adopt a classification of alternative subsidiary strategies (Bartlett and Ghoshal, 1986;

Jarillo and Martinez, 1990; Gupta and Govindarajan, 1991; Roth and Morrison, 1992; Birkinshaw and Morrison, 1995 and Taggart, 1996, 1997b), because it permits an analysis of the temporal evolution of the subsidiary strategy. The autonomy and procedural justice model suggested by Taggart (1997a), was chosen because it represents a unique perspective in relation to other models.

Proposition 3 states that *the type of strategy adopted influences the performance of the subsidiaries*.

In this proposition we admit that performance is, in some way, determined by the type of strategic role of the subsidiary and that the different categories of subsidiaries will present significant performance differences. This perspective is important to the multinational company in addressing the performance evaluation in a fair manner.

The performance of the enterprises is related to the adjustment of their organizational structure and the nature of the international environment (Liouville and Napoulos, 1996). These models stress the importance of national variables together with national culture as determinants of the way the performance itself is evaluated (Glaister and Buckley, 1998).

METHODOLOGY OF THE STUDY

The present study involved nine phrases. The first consisted in the selection of the economic and cultural variables to be used. The economic variable chosen was the Gross Domestic Product of the country, measured on a *per capita* basis. This variable captures the productive capacity of the country and also the average income of its population.

The selection of the national variables that could represent the national culture fell into the cultural indicators of Hofstede (1997). These indicators present an extremely rich content, measuring “individualism”, “power distance”, level of “masculinity” and the level of “uncertainty avoidance” in the population. According to this author these four dimensions can be used to classify national cultures.

A second phase consisted in the grouping of the European countries considered in order to determine a sample of subsidiaries to inquire. To this effect the universe of countries used were the ones for which Hofstede had calculated his indicators and using for his purpose the cluster analysis. We have considered only the countries of the European Union in order to facilitate the interpretation of results, since the analysis would be more difficult if there were countries that vary in a large number of dimensions. With these procedures we obtained five groups of countries with homogeneous characteristics.

Attending to the generic characterization of these groups and according to the literature (Ronen and Shenkar, 1975) we can consider the following groups of countries: Nordic, the Anglo-Saxon, Germanic, Latino and Central

European. For each group a representative country was chosen, Sweden (Nordic), United Kingdom (Anglo-Saxon), Germany (Germanic), Portugal (Latino) and France (Central European).

A third phase consisted of the selection of the subsidiaries of multinational companies that would be inquired in each country. For this purpose we used the database from Dun & Bradstreet- Dun's Europe- which has the major European companies. A selection was made of 1000 subsidiaries, proportionate to the total amount listed in the database.

A fourth phase of the study consisted of gathering the data which resulted from a postal inquiry to the managers of the subsidiaries, including nine sections, the first of general characterization, the second of identification of activities developed, the third of analysis of the level of integration, the fourth the level of coordination, the fifth the autonomy, the sixth the level of procedural justice, the seventh the type of strategic role, and the eighth the technological capacity of the subsidiary and lastly, the performance.

A fifth phase involved the statistical analysis of the data using factor analysis of principle components, in order to verify the presence of the dimensions of autonomy and procedural justice. This analysis was followed by the use of cluster analysis to verify if the groups obtained by this process were in accordance with the theoretical models. A sixth phase involved the use of discriminant analysis to observe if the suggested variables could distinguish the conceptual classifications.

A seventh phase consisted in analysing the categories of subsidiaries and verifying the correspondence between their classifications. In an eighth phase we tested for the influence of the type of strategic role in the performance of the subsidiaries. In the ninth, and last phase, the importance of a set of variables was verified to control their influence and effects. That was the case of dimension of the multinational company, the type of structure of detention of capital and the type of organizational structure.

DATA TREATMENT AND RESULTS

The percentage of responses to the questionnaire was 32%, varying by country. In order to proceed to the grouping of the subsidiaries, first factor analysis was used in order to verify the presence of the dimensions of autonomy and procedural justice (Taggart, 1997a). The use of this technique presented a Kaiser-Meyer-Olkin statistic of 0.73; which determines that the use of the technique is valid, although with median results. Bartlett's test permitted the rejection of the hypothesis that the correlation's matrix is an identity matrix. Two factors were extracted with a total variance explanation of 57.5%. The first factor accounted for 29.8% of the variance and the second 27.7%. From this analysis, and after the matrix rotation using the varimax method, we can

observe that factor 1 represents the concept of procedural justice and factor 2 represents the autonomy dimension.

The grouping was made using cluster analysis, choosing an optimization-partition method since the purpose was to verify a known solution for a pre-defined number of clusters associated with the theoretical models. The results for the first model (Taggart, 1997a) show that the factors used to classify are valid with an F statistic of 224.09, superior to the critical value.

The clusters obtained can be associated, in group 1 with the category of “vassal”, since it shows negative values for both factors, in group 2 with the category of “partner”, since it has positive values for both factors, in group 3 with the category of “militant”, since it has positive values in autonomy, but negative values in procedural justice, and in group 4 with the category of “collaborator”, since it has positive values for justice, but negative values for autonomy. The number of subsidiaries in each group was similar, group 2 (partner) being the largest, with 69 elements, followed by group 1 (vassal), with 66, then group 4 (collaborator), with 57 and group 3 (militant), with 39.

Regarding the White and Poynter (1984) approach, that defines the grouping of the subsidiaries as a function of their value-added and market scope, we observed that the subsidiaries were divided themselves into five clusters, according to the theoretical model, with all the variables used being significant. The groups obtained are the following: group 1, “specialized producer”; group 2, “strategic independent”; group 3, “rationalized producer”; group 4, “marketing satellite” and group 5, “miniature replica”. The distribution of the subsidiaries by the various groups shows a predominance of “marketing satellites”, with 54 elements, 39 subsidiaries in the case of the “strategic independent”, 36 “specialized producers”, 30 “rationalized producers” and 36 “miniature replica”.

Having verified the applicability of the models to the current data, we have proceeded to the evaluation of the propositions established. The discriminant model was tested, in the first place, regarding the autonomy and procedural justice model (Taggart, 1997a). The results permitted to identify three discriminant functions. The first function explaining 64.1% of the total variance, the second 20.5% and the third 15.2%. In terms of canonical correlation's between the coefficients and the groups, we have observed that the first functions present a correlation of 79.7%, the second 60.1%, and the third 54.2%.

**Table 1 - Structure Matrix
(Taggart, 1997 a)**

Functions	1	2	3
Individualism	0,91*	0,00	0,09
Uncertainty Avoidance	-0,46*	0,05	0,05
Gross Domestic Product <i>per capita</i>	0,42	0,81*	0,21
Technological Capacity	-0,09	0,26*	0,18
Masculinity	0,47	0,02	-0,67*
Principal Industry	0,01	-0,03	0,56*
Parent Company Location	0,05	0,20	-0,51*
Power Distance	-0,26	-0,16	0,36*
Number of Years in Operation	-0,08	0,16	0,18*

* Largest absolute correlation between each variable and the discriminant functions

Statistical tests indicate that the first function is associated with the variables of Hofstede (1997), individualism and uncertainty avoidance, the second function is associated with the technological capacity of the subsidiary and the third function is related to the other Hofstede indicators, mainly power distance and masculinity, and also the type of industry, age of the subsidiary and parent company location. In order to validate this analysis we observed the classification capacity of the functions with 70.1% of the subsidiaries being correctly classified. Using a cross validation process still 68.8% were correct. The prior probability was only 30%.

The discriminant model for the White and Poynter (1984) approach was identical having identified four discriminant functions. The first function is responsible for 93.6% of the total variance, the second for 3.9% and the others for 1.4% and 1.1%, respectively. In terms of canonical correlations the first function presents a correlation of 86.6%, the second 33.4%, the third 20.4% and the fourth 18.7%. The Wilk's test showed that the means of the discriminant functions were different for the various groups in the case of the first and second functions, but very close to zero in the case of the third and fourth functions. The structure matrix of the correlations between the variables and the discriminant functions shows that the first function is associated with the age of the subsidiary, the second with the technological capacity, the parent location and the Hofstede (1997) indicator of masculinity. The third function is associated with the Gross Domestic Product *per capita* and with the indicator of individualism. The fourth function is related to the uncertainty avoidance indicator and the power distance indicator and also the type of industry variable. Considering these results we can verify that the age of the subsidiary is the ele-

ment that distinguishes more significantly the subsidiary categories, followed by the technological capacity, the geographical origin and the indicator of masculinity of the country where they operate.

**Table 2 - Structure Matrix
(White and Poynter, 1984)**

Functions	1	2	3	4
Number of Years in Operations	0,920*	0,061	0,279	-0,11
Technological Capacity	0,507	-0,535*	0,418	-0,123
Masculinity	0,012	0,428*	-0,197	-0,079
Parent Company Location	-0,081	0,358*	0,156	0,318
Gross Domestic Product per capita	0,017	0,159	0,569*	0,155
Individualism	-0,124	0,376	0,562*	-0,331
Uncertainty Avoidance	0,146	-0,401	-0,531	0,668*
Power Distance	0,067	-0,438	-0,258	0,593*
Principal Industry	-0,057	0,164	0,174	0,275*

* Largest absolute correlation between each variable and the discriminant functions

To validate this analysis we have observed the classification capacity of the discriminant functions and verified that they correspond to 69.2% and 66.2% when cross validation is used. These values are positive considering the 28% prior probability.

Another proposition of this work is that the autonomy and procedural justice model (Taggart, 1997) and the White and Poynter (1984) model are different. The results show that there are significant differences between the two models. In fact on the autonomy and procedural justice model, the variables with more discriminant power were the individualism and the uncertainty avoidance indicators, with in the White and Poynter (1984) the more powerful variable was the age of the subsidiary. In order to verify the statistical relationship of the two models we conducted a Chi-Square test. The results show that there is no significant association between the categories of subsidiaries of the models.

The performance of the subsidiaries was also tested in three different manners: the first, as a function of the quantitative results, such as the profit, sales gross, and return on assets; the second, according to the evaluation of the subsidiary managers on the level of achievement of objectives and the third, regarding the situation compared with other subsidiaries.

**Table 3 - Quantitative Performance
Autonomy and Procedural Justice Model (Taggart, 1997a)**

	Clus. 1 Vassal (n=21)	Clus. 2 Partner (n=24)	Clus. 3 Militant (n=36)	Clus. 4 Collaborator (n=9)	Clusters Differences
Financial Results	10,72	8,52	-10,00	4,76	1>2,3,4
Commercial Results	3,02	7,95	-4,50	9,83	3<2,4
Operational Results	2,69	4,48	8,23	15,33	2<4;3<4

White and Poynter (1984) Model

	Clus. 1 Sep. Prod. (n=18)	Clus. 2 Stra. Indep. (n=15)	Clus. 3 Rac. Prod. (n=18)	Clus. 4 Com. Sat. (n=15)	Clus. 4 Min. Rep. (n=3)	Clusters Differences
Financial Results	6,60	2,17	6,23	6,02	7,5	
Commercial Results	-0,06	7,60	10,37	9,62	5,27	
Operational Results	14,14	0,00	16,47	3,14	4,17	4>2

In this manner, the performance analysis tried to reconcile two perspectives, one more quantitative and another more qualitative, in order to overcome the difficulties of comparing results of subsidiaries with different activities, from country to country and for different companies. In terms of observed differences they are more significant in the case of the Taggart (1997a) model than the White and Poynter (184) model, especially when taken in quantitative terms. However in general we cannot consider that there are statistical differences in terms of performance for the various categories of the two models.

**Table 4 - Qualitative Performance
Autonomy and Procedural Justice Model (Taggart, 1997a)**

	Clus. 1 Vassal (n=63)	Clus. 2 Partner (n=66)	Clus. 3 Militant (n=33)	Clus. 4 Collaborator (n=57)	Clusters Differences
Financial Results	3,19	3,45	3,09	3,34	
Commercial Results	3,51	3,41	3,27	3,68	
Operational Results	3,95	4,00	3,64	4,53	3<4

White and Poynter (1984) Model

	Clus. 1 Sep. Prod. (n=36)	Clus. 2 Stra. Indep. (n=36)	Clus. 3 Rac. Prod. (n=27)	Clus. 4 Com. Sat. (n=54)	Clus. 4 Min. Rep. (n=30)	Clusters Differences
Financial Results	3,08	2,92	3,11	3,50	3,9	5>2
Commercial Results	3,83	2,75	3,56	3,56	3,8	2<1,5
Operational Results	3,17	4,25	2,78	4,94	3,90	4>1,3,5;3>2

Considering the variables used to control other effects we observed that the dimension of the company is the factor where more differences are observed in the two models and that the aspects of capital detention and organizational form do not present significant differences.

DISCUSSION AND CONCLUSIONS

With the data used and applying the methodology described we can point out the following results: (1) the verification of the applicability of the White and Poynter (1984) model and the autonomy and procedural justice model (Taggart, 1997); (2) the validity of the suggested variables in the distinction of the categories of subsidiaries; (3) the independence of both models, suggesting that they are complementary models and not substitutes; (4) the reduced capacity of the methodology followed to verify differences in performance.

These results support the first two propositions, related with the capacity of the variables selected to distinguish the subsidiaries and confirm the complementary in the two models used. The third proposition was not supported since performance differences were not found to be significant. The results obtained suggest that in the study of subsidiary strategy we must have present: (1) the need for a comparative analysis as a function of the different typology models; (2) the existence of differentiation in the variables that distinguish strategic aspects and relationship aspects; (3) the relevance of national factors in subsidiary distinction (4) the role of the temporal dimension. As limitations to the work we consider the geographical scope as a boundary to generalization and the need to enlarge the samples and type of companies analyzed. As future research elements we consider the need for more investigation on the Gross Domestic Product per capita and the temporal dimensions as well as the focus on case studies to test these results within the same company over time.

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