Planning, Cooperation and Competition: A case study in industry and construction in a Portuguese region

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Abstract: - In the present paper we analyzed the behavior of firms in the construction and manufacturing sectors, located in the region of *Vale do Sousa*, in the north of Portugal. From the literature, even existing some disagreements, it is possible to conclude that planning is crucial for firms survival and growth. Cooperation is another aspect that the literature presents as an important factor for firms sustainability. It also plays a major role in competition, since firms are adopting coopetition strategies. By studying a sample of 251 firms, it was possible to realize, that the majority started their business without a formal planning, and they keep going without using it. In cooperation aspects, there is a lack of cooperation. It was possible to verify, that existing cooperation has some evidence but at a vertical level. These vertical relations were also identified in stakeholder's involvement.

Key-Words: - Planning; Cooperation; Competition; Innovation, Strategy;

1 Introduction

Since the beginning of the XX century, management has been assuming an important role in any firm. With the scientific management, Taylor and Fayol drove the management to the heart of the organization. But what is management about? What is its real role in today's firms? There are many concepts associated to the management concept, but some of them assume a relevant position.

It is not the aim of this paper to discuss the most important concepts in firms management, however if one considers the basic management functions, that can be found in any management handbook, planning is there.

And why is management so important? In a simple way it is important to allow firms growth, to increase market share, to get more profits, in other words, to blow the competition away. However nowadays there a few companies that might be able to fight alone. It is easier to succeed within a group then alone. It is safer to compete as network, than as a single firm. In a group ones weaknesses are offset by others. So if a firm is able to cooperate with other firms, together they will be stronger.

Considering planning or strategic planning some studies consider that it is not essential for small businesses [1], [2], while some others argue in the opposite way [3], [4], [5], [6]. Other authors argue in favour of planning since the very beginning [7]. However is frequent to find firms working without a plan, or just following an informal planning. But are those firms ready to compete? Are those firms prepared to succeed in the long-run? They might be successful in the present but that may not last. It is widely accepted that in order to survive and grow, firms need to be innovative. However innovative firms might be less likely successful in the short-term than their non-innovative counterparts [8]. If managers are aware of these issues, will they be able to sacrifice short-run benefits, in order to increase results somewhere in the future? So innovation together with firm performance must be planned [9], [10].

When the issue of innovation comes to discussion, it is important to distinguish whether it is large or small firms innovation. The former, normally present own resources, skills and capabilities to do it by themselves, while in small firms, innovation can has a harder way, either by firm/management

restrictions [11], [12], [13] or just because innovation in itself might be problem [14]. It might also promote an anti-innovative behaviour promoting protective strategies such as speed to market or secrecy, instead of innovation [15].
So, in order to get better results on innovation terms, and/or performance small firms should be able to cooperate among them [16], [17]. But is it possible to cooperate in a competitive environment? According to Braguinsky & Rose [18] the more competitive is the market, the less costly it is for firms to help each other like good neighbours. At the same time cooperation (networks) will benefit firm performance [19]. And as competition increases among teams, increases the cooperation among team members [20]. So, it seems that cooperation in vertical or horizontal perspective promote innovation, increases performance and makes firms more resilient [16], [15]. However firms will not lose their competition. In order to face competition, some firms are coopeting.
Through coopetition firms can get not only better performance but also to pursue technological innovation [21]. At the same time, coopetition helps in cost reductions, since it promotes cooperation through virtual teams [22].
By coopeting a firm may cooperate but at the same time compete, even in the same market [23]. However, in order to get better results and to make the cooperation lasts, a cooperation that leads both sides to a joint competition will certainly avoid some potential conflicts.
The question that arises is: Are firms ready to cooperate? Are they able to look as a competitor as a potential partner for the future? If so, in what levels are firms cooperating? With suppliers and customers, or are they ready to cooperate at a horizontal level? In this paper we will intend to analyse whether firms are by themselves planning and in what extent they are cooperating.

2 Resources and Methodology

In order to better understand the methodology adopted as well as the resources used in this study, we will briefly present the region where the study was carried out, followed by the questionnaire presented to the firms. However since this paper is a result of a broader research, some methodologies will be presented in the following chapter together with results. By having simultaneously some results and the path followed to get them, the discussion might be more profitable.

2.1 The Region

The region where this study was conducted is composed of six *concelhos*[1] (Castelo de Paiva, Felgueiras, Lousada, Paços de Ferreira, Paredes, Penafiel) which together form the Vale do Sousa Urban Community. This region is located in the North of Portugal, and for statistical purposes it is a region within NUT III – Tâmega.
According to the last census the population in this region in 2010 is 339,616 inhabitants. That means a population variation of 13% between 1991 and 2001, but only 3.6% between 2001 and 2010 [24]. Nowadays the main activities in this region are: shoe making, textiles, manufacture of furniture and construction. In four of these *concelhos* it is even possible to identify, some industrial districts [25], [26]: Felgueiras: Shoes production; Lousada: Textiles; Paços de Ferreira and Paredes: Manufacture of furniture. The existence of a specialization by *concelho* can be a threat to entrepreneurship. As referred in an OECD report [27] a strong concentration may be an inhibitor factor for entrepreneurship, and consequently to the strategies that lead to a better level of entrepreneurship. Even though being possible to find many activities in each *concelho*, in some of them there is a significant dependence of a major activity.
In order to describe the entrepreneurial fabric, it was necessary to collect information from different institutions, since the available information varies from source to source. According to data from the Statistics National Institute, this region had 34,049 firms registered in 2005. However, information from CofaceMOPE reveals the existence of 11,973 firms and, according to the Labor Ministry, the number of firms is 10,231. After contacts with local entities, it became clear there is no accurate information about the exact number of firms, which led us to believe that the number of firms was probably close to 12,000.
According to the data provided by the above mentioned institutions, this distribution (in relative values) is similar, pointing to retailing, manufacturing and construction being the main activities, representing 75% of the firms in the region.
Nevertheless, it is not easy to analyze the firms' management strategies and their entrepreneurial and innovative actions using a single approach to all of them, since they belong to different sectors. The

[1] Concelho: Portuguese administrative unit divided into smaller units called freguesias.

degree and type of entrepreneurship differs from a clothing store to a technology software industry [28] (even as regards the strategies adopted). In order to find more significant results, it was decided to limit this study to industrial (manufacturing and mining and quarrying firms) and construction businesses. This choice can be justified by the number of firms these activities engage, almost 50% of the total number of firms, and 75% of total employment. According to the data provided by the three institutions, the number of firms engaged in the industrial and construction sectors are around 5,000 (this figure will be used as the total population for the purposes of this study).

2.2 The Questionnaire

In order to get the necessary results to proceed with this study and considering the alternative options and some experience from past studies, the questionnaire seemed to be the best solution. Based on the literature review theories and a number of ideas and suggestions, a summary table was built to support the questions that were to follow.

Since questioning the whole of the population (5,000 firms) was out of the question, the study was focused on a valid sample. Next we present a formula suggested by Saunders [29] which takes into account the variability of the factors studied, the confidence interval required and the error margin was used to calculate the sample size:

(1) $n=p\%*q\%*[z/e\%]2$

where: n: minimum sample size required;
p%: proportion belonging to the specified category;
q%: proportion not belonging to the specified category;
z: z value corresponding to the level of confidence required:
e: margin of error required;

According to Saunders, since the population is less than 10,000 a smaller sample can be used without affecting the accuracy.

The adjusted formula is:

(2) $n'=\{n/[1+(n/N)]\}$

where: n': adjusted minimum sample size;
n: the minimum sample size (as calculated above);
N: total population;

Taking the strategic entrepreneurship (the combination of innovation, risk and proactivity factors) as the main factor and considering a variability of 80%-20% (which was later corroborated by the results), n' = 235.47 was obtained.

The questionnaire presented to firms included a large number of questions so as to allow the evaluation of different aspects of the firms' management. The total sample comprised 251 firms. Depending on the subjects the questions were presented in a different format. The question formats were also dependent on the results expected from each question. Even being this section the one where we are presenting the methods, the type of questions presented for each research subject will be present in the next section, with the results. Like this, it will be easier for the reader to connect the subject, the question and the result. Even the discussion might have some influences from the type of questions.

3 Results and Discussion

Considering the problem presented in the Introduction, as well as the methodology described in the previous section, we will present our findings. As guideline the results presentation will be presented in three steps: Planning, Cooperation and Competition. In some cases the discussion of one single subject will touch all of them. So it seems logical, to present the results followed by a simple discussion (if/when possible) and finish then this section with a general discussion considering the three aspects studied.

On what regards planning the questionnaire addressed two questions: Market Researches and Stakeholders involvement in firm's new projects. Planning is indeed a primordial aspect for any kind of business. In theory its importance is generally accepted, but in real world sometimes it does not exist. One of the questions presented in the questionnaire aimed to measure the percentage of firms that started their activities with a business plan. The question was direct: "*Did you realize a market research/business plan in order to start your business?*" If we keep in mind what the theory argues about planning, the results were astonishing. Only 10% of firms took at least a market research before initiate the business. This means, that 90% of firms started operating without a theoretical support to measure whether that could be a good investment. In order to find a relation between those firms that realized a market research and some factors such as firm age, some statistical tests could be performed. However some basic requirements were not respected. So, we followed by performing some crosstab tests, with SPPS software, but we just found random distributions, which means that does

not exist a characteristic associated to firms that realize market researches and/or business plans.
Another question considering planning was about researches on customers' needs. The results were even more disappointing in strategic terms, 92.8% of firms never realized a study about their customers. However it was interesting to note, that from those 10% of firms that realized a business plan, 42.3% have already did some researches about their costumers needs. Even without statistical evidences due to assumptions non-compliances, it is possible to say that either firms present and follow a planning policy, or they just don't give importance to business planning, at least in theoretical terms.
On what regards stakeholders involvement in firms decisions, the questionnaire also presented a direct question: *"Is it common in this firm to get stakeholders opinions in order to plan a new project?"* To this question 55% of firms answered positively. Considering the sample size, it means that 138 firms follow this policy. However, going a bit further we tried to find out what stakeholders were considered to decision making.

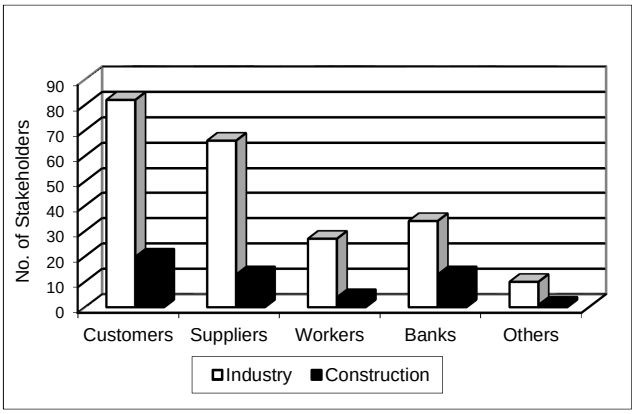

Fig. 1. Stakeholders contacted before a new project

From Figure 1 there are two aspects to stress (1) Customers and suppliers are the most contacted stakeholders. (2) Workers involvement got the 4th place. That might mean that firms are focused in the outcomes and don't spend much time planning the future. It is also interesting to note the in most of answers marked as *other* the respondent indicated that the other stakeholder was the firm accountant.
On what regards cooperation the first results to present were measured in a group of questions targeting to measure innovation strategies. From those strategies it was possible to build the next table regarding cooperation:

Table 1. Frequencies of cooperation strategies

	Absolut value (in 251 possible)	%
Competitors Cooperation	2	0,8
Suppliers Cooperation	12	4,7
Customers Cooperation	16	6,3

The figures are clear. While in some strategies we got results of 61% (new equipment) 29% (New products), 28% (management reorganization), the results in cooperation strategies are clear: Firms in this region/sector are reluctant to cooperation. Even on vertical cooperation the results are very poor.
As previously mentioned, the questionnaire was broader than the issues addressed in this paper. One of the issues studied was innovation. After classifying the firms into innovation classes [30] were identified the cooperation strategies by innovation class. The results, even with a low level of cooperation were interesting. The 2 firms the present competitors innovation were classified as innovator firms. Those who cooperate with suppliers and competitors are distributed among the 5 classes of innovation, but most of them were classified as averse or very averse to innovation.
Even with a small sample of cooperative firms it is possible to verify that those who can see the competitors as a partner are leading in innovation issues.
This lack of cooperation might occur due to the competition identified in this region, as well as a *black box* behavior. When questioned about the number of direct competitors, 35% of firms did not reply. May it means that firms are not following what is going on in their markets? From those that replied it was found an average of 28 competitors for each firm. Notice that this was a question about the perception of managers on the numbers of direct competitors. This result leads us to another analysis regarding the type of competitors. It was asked to the interviews to identify the type of competitors. More than one answer was possible and the results are as follows.

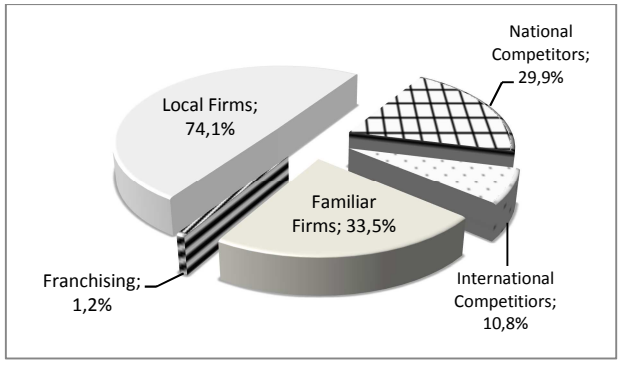

Fig. 2. Type of competitors identified

Since we were accepting more than one answer the results are presented with an inflated N. In order to better understand the percentages, 74.1% of the 251 firms identified as their competitors local firms. 33.5% identified as competitors familiar firms. However one firm may have identified as competitor both a local and a familiar firm. For that reason the sum of the percentages in Fig. 2 exceed 100%.

The main idea from Fig. 2 is that firms are looking to their neighbours as competitors and not as potential partners. These results are somehow in accordance with the results presented in Table 1 where we identified a lack of cooperation in this region and sectors.

Considering the location of the three most important competitors, the results are also in accordance to the previous result. Interviewees were asked to identify the location of their three most important competitors, by different proximity levels. The results are as follows:

Table 2. Location of the 3 most important competitors

Competitor / Location	1st	2nd	3rd
Same *concelho*	74%	47%	41%
Another *concelho* in the same region	5%	34%	20%
Anothe *concelho* in the north of Portugal	9%	5%	22%
Another place in Portugal	6%	7%	8%
European Union	5%	4%	2%
Other	0%	1%	3%
No answer	1%	2%	4%

From Table 2 is clear, that firms identify their competitors, mainly in the same *concelho*. Considering all them an overwhelming majority identifies their competitors at most, in the north of Portugal.

This competitor's identification may also occur due to the existence of industrial clusters. Since there are many firms from the same sector in the same *concelho*, it might increase the level of competitiveness. Even more if do not exist a cooperation culture. If competition is interesting from a consumer point of view, for a sector competition may be dangerous, in particular when they are targeting the same markets. In this case, it seems important the role of the businesses associations that exist in this region. It seems to be urgent to promote a cooperation culture in order to make the managers of these firms, most of them (87%) small firms, realize that they can get better results if they are able to cooperate. Together they might be able to compete in new and larger markets, promoting like that economic growth in this region. Nowadays these types of policies or behaviors are identified as coopetition as mentioned in the Introduction. However, in this region it is possible to identify a high level of local competition, and probably due to the nature of the existent businesses (industrial clusters) do not exist a cooperation culture, thus, there still exists a long way to establish networks leading to coopetition.

4 Conclusion

The concepts analyzed in this paper are crucial for firm's survival. In a formal (or not so much) way, planning must be considering before a new venture. In this region and sectors, it was registered a lack of planning culture. However, those that take it into consideration once are more likely to keep a planning culture in their businesses.

This poor culture of planning was also identified at a cooperation level. This absence of cooperation may also have some influence from the weak planning. Since firms do not take time to plan, probably they the living constantly as if they were in a tightrope walking. Managing a firm like this is not so easy to welcome a cooperative culture. Moreover when the neighbour is seen as a competitor instead of a partner. In this region It was identified a high level of local competition. That might occur due to the existence of industrial clusters in 4 of these 6 *concelhos.*

This competitive environment should in first place be reorganized in order to promote some cooperation. The existence of industrial clusters may lead to a wrong interpretation of a competitive environment. However even in a competitive environment is necessary or at least convenient to apply some theoretical concepts such as the Porter 5 forces model.

On what regards stakeholders involvement in firms decisions there are some evidences that they are considered. However this don not seem to be a regular action. Probably in some special occasions mainly in a vertical level the stakeholders are heard. As a final comment one can argue that there is a gap between managerial decisions and management theories.

References

[1] H. Mintzberg, "The fall and rise of strategic planning," Harvard Business Review, vol. 72, no. 1, pp. 104-114, 1994

[2] J. Pearce, E. Freeman and R. Robinson, "The tenuous link between formalized strategic planning and financial performance," Academic Management Review, vol. 12, pp. 658-675, 1987.
[3] C. Miller and L. Cardinal, "Strategic planning and firm performance: a synthesis of more than two decades of research," Academic Management Journal, vol. 37, pp. 1649-1665, 1994.
[4] J. Rudd, G. Greenley, A. Beatson and I. Lings, "Strategic Planning and performance: Extending the debate," Journal of Business Research, vol. 61, no. 2, pp. 99-108, 2008.
[5] K. Man, T. Lau and K. Chan, "The competitiveness of small and medium enterprises. A conceptualisation with focus on entrepreneurial competencies," Journal of Business Venturing, vol. 17, pp. 123-142, 2001.
[6] J. Brinckmann, D. Grichnik and D. Kapsa, "Should entrepreneurs plan or just storm the castle? A meta-analysis on contextual factors impacting the business planning–performance relationship in small firms," Journal of Business Venturing, vol. 25, no. 1, pp. 24-40, 2010.
[7] A. Chwolka and M. Raith, "The value of business planning before start-up — A decision-theoretical perspective," Journal of Business Venturing, vol. 27, no. 3, pp. 385-399, 2012.
[8] T. Heimonen, "What are the factors that affect innovation in growing SMEs?," European Journal of Innovation Management, vol. 15, no. 1, pp. 122-144, 2012.
[9] J. Kohli, "The five keys to innovation: agencies need a plan to build a culture of innovation. They must understand their strengths, address areas for development, and work across policy areas," The Public Manager, vol. 41, no. 1, p. 36, 2012.
[10] W. Worthington, J. Collins and M. Hitt, "Beyond risk mitigation: Enhancing corporate innovation with scenario planning," Business Horizons, vol. 52, no. 5, pp. 441-450, 2009.
[11] C. Green, C. Kirkpatrick and V. Murinde, "Finance for small enterprise growth and poverty reduction in developing countries," Journal of International Development, vol. 18, pp. 1017-1030, 2006.
[12] J. Baxendale, "Outsourcing opportunities for small businesses: A quantitative analysis," Business Horizons, vol. 47, no. 1, pp. 51-58, 2004.
[13] M. Bruce, R. Vazquez and D. Cooper, "Effective design management for small businesses," Design Studies, vol. 20, pp. 297-315, 1999.
[14] R. Nina, J. Brinckmann and A. Bausch, "Is innovation always beneficial? A meta-analysis of the relationship between innovation and performance in SMEs," Journal of Business Venturing, vol. 26, p. 441–457, 2011.
[15] A. Leiponen and J. Byma, "If you cannot block, you better run: Smallfirms, cooperative innovation, and appropriation strategies," Research Policy, vol. 38, no. 9, pp. 1478-1488, 2009.
[16] S. Zeng, X. Xie and C. Tam, "Relationship betwenn cooperation networks and innovation," Technovation, vol. 30, no. 3, pp. 181-194, 2010.
[17] H. Hasewaga, "Survival and strategy of small/micro firms," The International Journal of Asia Management, vol. 2, no. 1, pp. 65-79, 2003.
[18] S. Braguinsky and D. Rose, "Competition, cooperation, and the neighboring farmer effect," Journal of Economic Behavior & Organization, vol. 72, no. 1, pp. 361-376, 2009.
[19] I. Álvarez, R. Marin and A. Fonfría, "The role of networking in the competitiveness of firms," Technological Forecasting and Social Change, vol. 76, no. 3, pp. 410-421, 2009.
[20] C. Coen, "Seeking the comparative advantage: The dynamics of individual cooperation in single vs. multiple-team environments," Organizational Behavior and Human Decision Processes, vol. 100, no. 2, pp. 145-159, 2006.
[21] D. Gnyawali and B. Park, "Co-opetition and Technological Innovation in Small and Medium-Sized Enterprises: A Multilevel Conceptual Model," Journal of Small Business Management, vol. 47, no. 3, pp. 308-333, 2009.
[22] Y. Baruch and C. Lin, "All for one, one for all: Coopetition and virtual team performance," Technological Forecasting and Social Change, p. in press, 2012.
[23] J. Zhang and G. Frazier, "Strategic alliance via co-opetition: Supply chain partnership with a competitor," Decision Support Systems, vol. 51, no. 4, pp. 853-863, 2011.
[24] INE. I.P., “Portal de Estatísticas Oficiais,” 2011. [Online].Available:http://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_unid_territorial&menuBOUI=13707095&contexto=ut&selTab=tab3. [Accessed 28 October 2011].
[25] DHVMC, "Plano de Acção para a implementação e dinamização turistica e cultural da Rota do Românico do Vale do Sousa, I Parte - Enquadramento e estruturação da Rota do Românico do Vale do Sousa," DHV FBO Consultores, S.A., Porto, 2004
[26] D. Bessa, "PRASD - Programa de Recuperação de Áreas e Sectores Deprimidos," Ministério da Economia; PRIME, Lisboa; União Europeia, 2004.
[27] OECD, “The Source of Economic Growth,” Organization for Economic Co-operation and Development, Paris, 2003.
[28] R. Schwartz, N. Birch and R. Teach, “Quantitative methodological considerations,” in Innovative Methodologies in Enterprise Research, Cheltenham, Edward Elgar, 2007, pp. 54-64.
[29] M. Saunders, P. Lewis and A. Thornhill, Research Methods for Business Students, Essex: Prentice Hall, Financial Times, 2003.
[30] N. Duarte, "Innovation, Risk and Proactivity: Are firms following these Strategies?," WSEAS Transactions on Business and Economics, vol. 8, no. 3, pp. 110-120, 2011.