

INNOVATION IN THE PORTUGUESE FOOTWEAR INDUSTRY

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ABSTRACT

The Portuguese footwear industry had in the last five years a remarkable performance in several economic indicators (e.g. exportation values) and is a success case in the Portuguese industry. The economic results of the footwear companies studied by the authors shows differences between all of them and these differences are related with the innovation strategy adopted. The companies focused in product innovation, oriented to their target market, have higher ratios "turnover per worker" than the companies focused in process innovation. A systemic model of innovation is proposed for the innovation in the seven companies analysed. The research methodology was qualitative and the strategy for data collection was the case study.

Key Words: footwear; innovation; incremental innovation; Oslo Manual

1. INTRODUCTION

The present paper analyses the innovation strategy [1] follow by seven companies of the Portuguese footwear industry (some of them are the best companies in the sector) and shows the components that the companies focus their resources and strategies to be sustainable and maintain a competitive advantage in the international context.

In the last decade, Portugal has improved its position in the European and World ranking of innovation and is considered as belonging to the group of moderately innovative. Data for the year 2013 contained in the report *The Global Innovation Index* [2] show that Portugal occupies 34 place out of 142 countries assessed, with a score of 45.1 on a scale up 100.

With regard to competitiveness, *The Global Competitiveness Report 2014-2015* highlights that Portugal raised 15 positions in the overall ranking to the 36th in the year 2014. Portugal is positioned on level 3 ("innovation driven" group), although it has underperformed in several dimensions when compares with others advanced economies (figure 1).

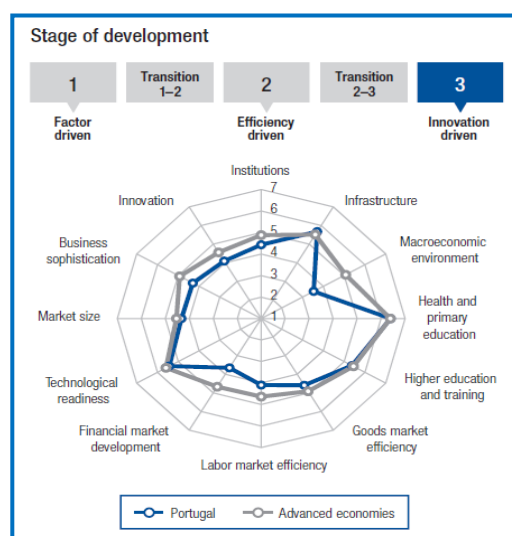


Figure 1. Portugal in the *Global Competitiveness Index 2014*
Source: Global Competitiveness Report, World Economic Forum, 2014

The Portuguese footwear industry is concentrated in two clusters: Felgueiras and Guimarães (cluster 1); Santa Maria da Feira, Oliveira de Azeméis and São João da Madeira (cluster 2). In 2013, there were 1.337 companies employing over 35.000 people. The gross production value was 1.840.010 thousand euros and was produced more than 75 million of pairs. The trade balance was 1.310.929 thousand euros and the exportation value reached 1.734 million euros [3], value that puts Portugal as the eleventh world exporter (Table 1).

Table 1. World Top 15 Exporters in 2013 (Value)

Rank	Country	Value (millions USD \$)	World Share (%)	Average Price (\$) – (Rank)	Export Markets (Top 3)
1	CHINA	48 145	40,4	4,55 (15 ^a)	USA/Japan/Russia
2	ITALY	10 722	9,0	48,78 (1 ^o)	France/Germany/USA
3	VIETNAM	10 030	8,4	15,44 (11 ^o)	USA/France/Belgium
4	HONG KONG	4 848	4,1	15,46 (10 ^o)	USA/Japan/China
5	BELGIUM	4 688	3,9	23,89 (5 ^o)	France/Netherlands/UK
6	GERMANY	4 446	3,7	23,73 (6 ^o)	France/Netherlands/Áustria
7	INDONESIA	3 755	3,2	21,12 (8 ^o)	USA/Belgium/Germany
8	NETHERLANDS	3 201	2,7	20,51 (9 ^o)	Germany/France/Italy
9	SPAIN	3 036	2,6	21,70 (7 ^o)	France/Italy/Germany
10	FRANCE	2 717	2,3	30,78 (3 ^o)	Italy/Germany/Spain
11	<u>PORTUGAL</u>	<u>2 305</u>	<u>1,9</u>	<u>31,01 (2^o)</u>	<u>France/Germany/Netherlands</u>
12	INDÍÁ	2 268	1,9	13,14 (13 ^o)	UK/USA/Germany
13	UNITED KINGDOM	1 876	1,6	13,02 (14 ^o)	Germany/Ireland/Netherlands
14	ROMANIA	1 304	1,1	24,75 (4 ^o)	Italy/Áustria/Germany
15	USA	1 165	1,0	14,11 (12 ^o)	Canada/Korea/Mexico

Source: Adapted from APICCAPS, World Footwear, 2014

Portugal exports mainly leather footwear (76% of the total exportation value) with the second world average price (31,01 USD \$) and the companies studied in this research are excellent cases of this product category.

2. RESEARCH METHODOLOGY

The methodological approach to the research was defined considering the specificities of the sector and the proposed research objectives. The research methodology can be quantitative or qualitative: the qualitative analysis is presented as the most recommended when the researcher wants to study a small sample of entities and the study is focused on a theme or sector. It is also recommended when the investigation aims obtaining detailed and in-depth information on situations, events, people, organizations, interactions and behaviors observed by the investigator during the field research [4]. When the industrial sector consists mainly of SMEs, the qualitative approach is recommended to reduce the distance between the administrator or owner and the investigator [5].

The research methodology was qualitative and the strategy for data collection was the multiple case studies. The case study uses different sources of evidence and is relevant to answer to the questions “Why”, “How” and “What”. It is also recommended when the

researcher has little or no control over the behavior of the events, if the study is based in the real world and reports events that take place at the present time [6].

To select the seven companies were used the purposeful or intentional sampling. The logic and the power of purposeful or intentional sampling is based on the selection of cases that are rich in information for in-depth study of a particular phenomenon, and on which can be drawn from relevant information and central to the purpose of the investigation [7]. There are several strategies to select the footwear companies using the intentional sampling. The maximum variation strategy and the sampling with criteria are the most appropriate to the present investigation [4].

The decision about the methodological approach was taken after a collaborative meeting with the sectorial association APICCAPS (Associação Portuguesa dos Industriais de Calçado, Componentes e Artigos de Pele e seus Sucedâneos) that give a short list with twelve innovative footwear companies.

The qualitative data was analysed with the MAXQDA software.

3. RESULTS

To obtain the data, the investigators made eleven semi-structured interviews during more than five months (in four companies were made interviews to more than one person). They visited the seven footwear companies several times and all the interviews were digital recording and after transcribed to text. The tables 2 and 3 synthetize the general data of the companies and the type of innovation observed.

Table 2. General data of the footwear companies analysed

YEAR 2013	FELMINI	SAVANA	CENTENÁRIO	PROCALÇADO	KYAIA	SOZE	ACO
Foundation Year	1973	1988	1941	1973	1984	1976	1975
Turnover (Million €)	13,443	8,954	9,187	21,0	56,0	10,0	33,49
Nº workers	183	142	74	296	620	160	741
Ratio "Turnover/Wrk." (€/Worker)	73.460	63.050	124.150	70.950	90.320	62.500	45.200
Number Pairs/Year	300.169	440.437	174.841	5.500.000 (solas)	1.000.000	-	1.491.050
Exportation Value (Million €)	13,028	7,880	9,064	10,5	50	9	28,658
Year of creation of own brand	2001 (Felmini)	2007 (Telyoh)	-	1990 (For Ever) 2006 (WOCK) 2013 (Lemon Jelly)	1994 (Fly London) 2010 (Softinos)	2002 (DKode)	1975 (Aco)
% Own Brand	100%	10%	0%	60%	90%	60%	10%
% Outsourcing	1%	50%	4,3%	24%	25%	-	30%

The table 3 shows how the innovation acts in the footwear companies according the Oslo Manual classification [8]. It is evident the relation between the product and/or marketing innovation and the higher ratio "Turnover/worker" for the companies that adopt this approach to the innovation. Innovation in marketing is directly associated with the existence of own products and own brands in the footwear clusters.

Furthermore, the incremental innovation is dominant among the companies considered, which is consistent with the previous analyzes of authors who focused their investigations in

sectors dominated by SMEs [9] and low and medium-low technology industries. Only in Kyaia it is clear the radical innovation related with the project “HighSpeedShoeFactory”. “Learning-by-producing” is the category of incremental innovation [10] present in all the companies studied. “Learning-by-doing” [11] is in the companies that develop process innovation, where the workers are critical in the success of the results achieved. In these two companies analysed, the ratios “Turnover/worker” are the lowers.

Table 3. Innovation in the cases analysed

	FELMINI	SAVANA	CENTENÁRIO	PROCALÇADO	KYAIA	SOZE	ACO
TYPE OF INNOVATION (OSLO MANUAL)	PRODUCT MARKETING	PROCESS ORGANIZATIONAL	PRODUCT	PRODUCT MARKETING	PRODUCT ORGANIZATIONAL MARKETING	PRODUCT MARKETING	PROCESS
CATEGORY OF INCREMENTAL INNOVATION (LEARNING-BY-...)	PRODUCING USING SEARCHING	DOING PRODUCING	PRODUCING SEARCHING	PRODUCING INTERACTING SEARCHING	PRODUCING INTERACTING SEARCHING	PRODUCING SEARCHING	DOING PRODUCING
INNOVATION LEVEL (1-5)	4	2	3	5	5	3	2
RATIO “Turnover/Wrk.” (€/Worker)	73.460	63.050	124.150	70.950	90.320	62.500	45.200

Assigning a level of innovation is the result of in-depth analysis of companies. Procalçado is the Portuguese leader in the production of components to the footwear industry, showing a level 5 in innovation. Kyaia is the Portuguese leader in the production of leather shoes. The project “HighSpeedShoeFactory”, led by Kyaia, will result in a radical innovation to the sector, and involves different partners of the footwear value chain. Level 5 in innovation is obvious to this company.

4. DISCUSSION

Innovation is present throughout all the analyzed companies, regardless the type of innovation, the strategy implemented in innovation, the results obtained and the degree of this innovation.

Innovation in products and innovation in marketing are the most representatives among companies with innovation studied, according to the approach and categories proposed by the Oslo Manual. Companies that follow these two innovation categories have the best economic results (see Figure 2) and have the best sectorial image. Centenário is a company that works with special raw materials (crocodile, alligator, snake, fish skin) and uses a special process to produce shoes, called “Goodyear”. These particularities demand innovation in products permanently and permit achieving the higher ratio “turnover/worker”.

Innovation in products requires a deeper knowledge of construction processes and raw materials used to make shoes, normally corresponding to an incremental innovation. Because the footwear companies belongs to a traditional and mature industry, with low technological intensity, the "learning-by-doing" and "learning-by-producing" are very important innovation achieved by the workers.

Chain-linked model proposed by Kline and Rosenberg [12] and open innovation theory suggested by Chesbrough [13], [14] helps to understand how works the innovation in the footwear sector.

Clusters in the Portuguese footwear industry are important to the global performance achieved. There are several examples of cooperation and synergies between sectorial

organizations, components producers, equipment producers and shoe producers to develop projects funded by national and European programs.

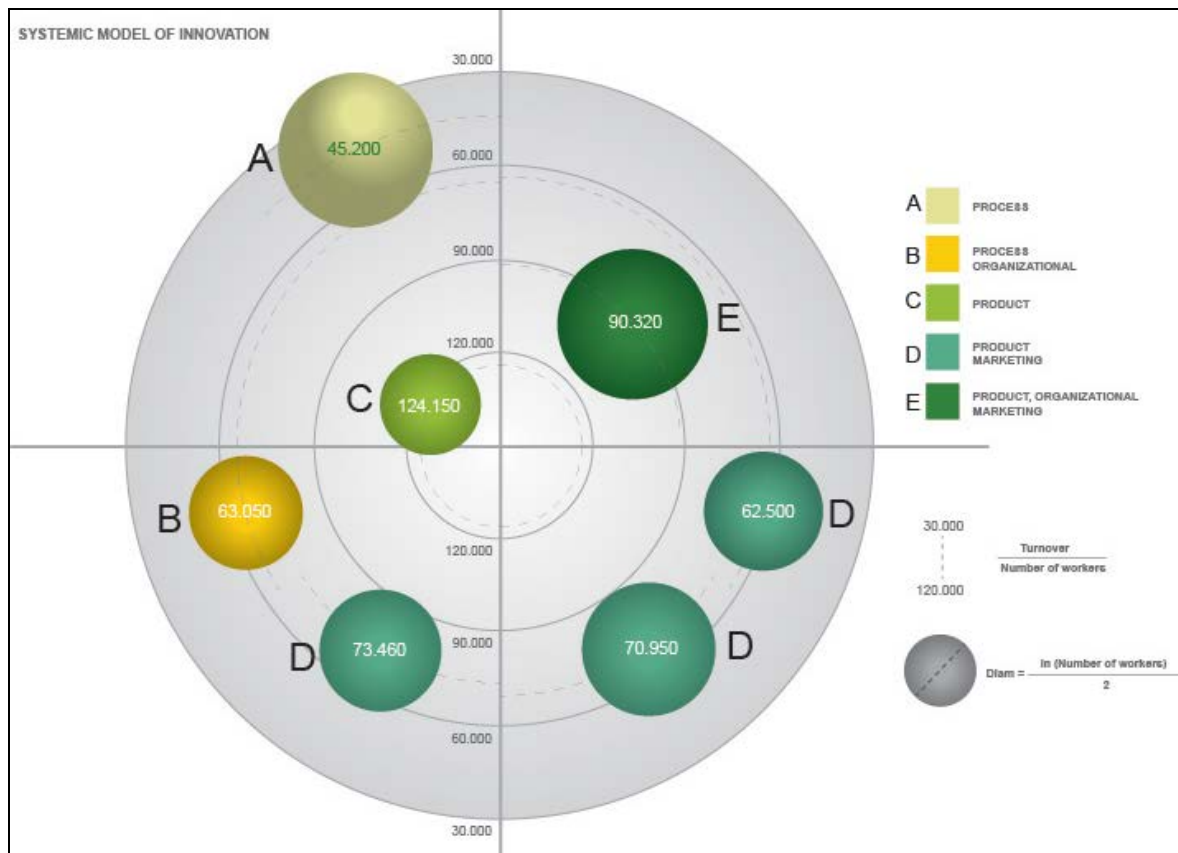


Figure 2. Systemic model of innovation in the firms analysed

5. CONCLUSIONS

Innovation is critical to the competitiveness and sustainable development of the world economies [15]. In traditional and “low-tech” industries, dominated by SMEs, innovation plays an important role in the performance shown by the sector [16]. A systemic model of innovation as shown in figure 2 can describe what happens today in the Portuguese footwear industry. Competitiveness is possible and easier in that cases in which the innovation is centred on own products and own brands (product and marketing innovation). Economic results in the last four years emphasize the benefits of this strategic approach to innovation done by these innovative firms of the Portuguese footwear industry.

The main impacts of innovation identified by all the companies were the financial results, the sales volume and the possibility to entry into new markets. The experience and know-how shown by the workers is also very important for the incremental innovation verified and recognized by the companies.

6. REFERENCES

- [1] Fagerberg, I., Mowery, D.C., Nelson, R. *The Oxford Handbook of Innovation*. New York: Oxford University Press, 2005.
- [2] Cornell University, INSEAD and World Intellectual Property Organization. *The Global Innovation Index 2013: The local dynamics of innovation*. Geneva: WIPO, 2013.
- [3] APICCAPS. *World Footwear Yearbook 2014*. Porto: Publications APICCAPS, 2014.

- [4] **Patton, Michael Quinn.** *How to Use Qualitative Methods in Evaluation.* California: Sage Publications Inc., 1987.
- [5] **Hill, Jimmy and McGowan, Pauric.** Small Business and Enterprise Development: Questions about Research Methodology. *International Journal of Entrepreneurial Behaviour and Research.* 1999, Vol. 5, (1), pp. 5-18.
- [6] **Yin, Robert K.** *Case Study Research: Design and Methods.* 4th edition, London: Sage Publications, 2009.
- [7] **Saunders, Mark, Lewis, Philip and Thornhill, Adrian.** *Research Methods for Business Students.* 5th Ed. London: Financial Times Prentice-Hall, 2009.
- [8] **OECD.** *Oslo Manual: guidelines for collecting and interpreting innovation data.* 3rd edition. Paris: OECD Publishing and Eurostat/European Commission, 2005.
- [9] **Rothwell, Roy and Zegveld, W.** *Innovation and the small and medium sized firms.* London: Frances Pinter, 1983.
- [10] **Heidenreich, Martin.** Innovation patterns and location of European low- and medium-technology industries. *Research Policy.* 2008. Elsevier, Vol. 38, (3), pp. 483-494.
- [11] **Arrow, Kenneth J.** Economic Welfare and the Allocation of Resources for Inventions. In Nelson, R.R. (ed.). *The Rate and Direction of Inventive Activity.* Princeton, NJ: Princeton University Press, 1962.
- [12] **Kline, Stephen J. and Rosenberg, Nathan.** An overview of innovation. In: Landau, R. e Rosenberg, N. (Eds.). *The Positive Sum Strategy.* Washington, D.C.: National Academy Press, 1986, pp.275-305.
- [13] **Chesbrough, Henry W.** *Open Innovation: The new imperative for creating and profiting from technology,* Boston: Harvard Business School Publishing, 2003.
- [14] **Chesbrough, Henry** (2003). The Era of Open Innovation. *MIT Sloan Management Review.* 2003, Vol.44, (3), pp.35-41.
- [15] **Porter, Michael E.** *The competitive advantage of nations.* 11th ed. Chippenham and Eastbourne: Palgrave Macmillan, 1998.
- [16] **Hirsch-Kreisen, Hartmut and Jacobson, David.** *Innovation in Low-Tech Firms and Industries* (Eds.). Cheltenham: Edward Elgar, 2008.

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