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Leather wastes in the Portuguese footwear industry: new framework according design principles and circular economy

António Marques^{a*}, Graça Guedes^a, Fernando Ferreira^a

^a*University of Minho, Campus de Azurém, 4800-060 Guimarães, Portugal*

Abstract

Leather shoes are the main category of footwear products done in Portugal, representing around 75% of all products in this industrial sector. The wastes produce by the footwear industry are very aggressive for the environment and requires new approaches from all stakeholders, including sectorial organizations and politicians. This exploratory research will be done using data from the sectorial organizations APICCAPS and CTCP, data from the National Agency for Environment and also from a field research (cases of Portuguese footwear companies). If the footwear companies will perceive the competitive advantages of being “green”, then they will incorporate the design principles and they will make the sustainability be an essential part of their strategies, including new approaches according the four R’s: Reduce; Reuse; Recycle and Re-thinking or (Re)Design. This is something very important, mainly when the footwear companies are dealing with more conscious consumers and with the new environmental requirements.

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* Corresponding author. Tel.: +351 918204280; fax: +351 253510293.

E-mail address: adinis@det.uminho.pt

1. Introduction

The Portuguese footwear industry had in the last six years a remarkable performance in several economic and competitive indicators. Leather shoes are the main category of footwear products done in Portugal [1] and Portugal is the 10th World Exporter of Leather Shoes (Table 1). It represents around 75% of all products done in this industrial sector. The wastes produce by the footwear industry are very aggressive for the environment, mainly if it is considered all the value chain (tanning included). The National Plan for the Wastes Management in Portugal (Plano Nacional de Gestão de Resíduos de Portugal) presented by the Portuguese Agency for Environment in 2011 says that 15% of raw material (leather, rubber, polymers, textiles, paper, etc) used in this sector are wastes [2]. Some of these wastes cannot be reused or recycled, but with new approaches and innovative methodologies they can be “worked” in order to create value in their value chain.

For a long time, the main approach at waste’s sustainability was focused in the three “R’s”: Reduce, Reuse; Recycle, in order to minimize damages. At the beginning of this millennium, William McDonough and Michael Braungart proposed a new “R”: Re-thinking or (Re)Designing. This new “R” is based on the behavioural reorganization of the society, focused on Ecodesign and design processes linked with sustainability and with a new conscious consumer [3].

“Circular economy” is a star in all scientific discussion about sustainability and new global economy. As says Walter R. Stahel (pp. 453), *“a circular economy would turn goods that are at the end of their service life into resources for others, closing loops in industrial ecosystems and minimizing waste. It would change economic logic because it replaces production with sufficiency: reuse what you can, recycle what cannot be reused, repair what is broken, and remanufacture what cannot be repaired”* [4].

The Portuguese footwear sector does not want to stay behind in these new approaches to sustainability and their global challenges. There is a long road to do, but the Portuguese footwear stakeholders have to start focusing some research efforts in this new way of thinking. This article intents to be a preliminary contribution to the future discussions around “Circular Economy” in traditional and low-tech European’s sectors as they are textile, clothing and footwear.

Table 1. Top 10 Exporters of Leather Footwear (2015).

Rank	Country	USD Million	World Share	Pairs Millions	World Share	Average Price \$
1	China	10 922	20.5%	725	33.1%	15.05
2	Italy	7 695	14.4%	125	5.7%	61.50
3	Vietnam	5 965	11.2%	293	13.4%	20.37
4	Hong Kong	2 455	4.6%	90	4.1%	27.34
5	Germany	2 392	4.5%	69	3.1%	34.74
6	Indonesia	2 233	4.2%	95	4.3%	23.48
7	Spain	2 132	4.0%	57	2.6%	37.46
8	Belgium	1 968	3.7%	71	3.2%	27.86
9	India	1 923	3.6%	115	5.3%	16.72
10	Portugal	1 840	3.4%	59	2.7%	31.00

Others important issues linked with fashion industries and sustainability are “fast fashion” and “slow design”. Fast production and also fast consumption leads to the systematic decrease of resources and the consequent increase of wastes. This situation stresses the earth’s capacity to regenerate and recover the damages done by all the human activity. This is why the “slow fashion approach” appears as a new model that can be a revolutionary way to deal with this new reality. It is focused on its link with real human needs, awareness and responsibility. “Slow Fashion” designs, produces and consumes in a way that acknowledges its impacts on society and in the environment [5]. By

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