Sustainable Development through Waste Management: An Empirical Research through Greek Supermarkets

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ABSTRACT: *The aim of this research is to examine the perspective of the costumers concerning the environmental practices that are applied by grocery stores (Supermarkets), especially in relation to packaging and food products that have expired. In order to arrive to a conclusion, a questionnaire was distributed amongst Greek costumers. The results of this survey showed that packaging and expired food products are considered by Greek consumers, as a big environmental problem. In detail, they think that these problems are not handled in a resultful way by the Supermarkets, although the Supermarkets are somewhat environmental friendly. Moreover, consumers are ethical-aware concerning their purchases, and they are willing to visit another supermarket (than their local one) or a "green" store that is more environmental friendly. However they are not willing to reward any environmental practices of their local supermarkets, if they have to suffer higher prices.*

I. INTRODUCTION

Numerous authors have been researching and using the sustainable development concept. This has been categorized in three main aspects, the social, the environmental and the economic one. The latter describes the ability of a system to avoid extreme sectoral imbalances, control external debt and government levels that may damage the production in industry and agriculture, while producing goods and services on a continuing basis. The environmental aspect discusses the ability of maintaining an environmentally sustainable system that has a stable resource base (McDougall et al., 2001).

Since then, the concept of sustainable development has been heavily discussed and used by various authors, who recognize three main aspects of sustainable development, the economic, the environmental and the social one (Harris, 2003).The economic aspect refers to the ability of an economically sustainable system to produce goods and services on a continuing basis, maintaining, at the same time, manageable levels of government and external debt and avoiding extreme sectoral imbalances that may damage agricultural and /or industrial production. The environmental aspect refers to the ability of an environmentally sustainable system to maintain a stable resource base, avoiding exploitation of renewable resource systems. The first aspect, the social one, deals with achieving a distribution fairness and an adequate provision on social services. It also deals with political participation as well as with gender equality.

A triple bottom line approach is being incorporated by sustainable business models nowadays, in order to consider stakeholder interests, such as society and environment. These have a threefold importance: They implement corporate innovation for sustainability, this sustainability is embedded into the business purpose and processes and finally, they serve as a key driver for competitive advantage (Bocken et al., 2014).

Following the above, practices in waste management and corporate social responsibility that are applied on the retail sector and other industries, take into account environment and society interests. El-Haggar (2007) states that it is a misconception that sustainable initiatives and environmental protection comes at the expense of economic development, something that is true for waste management. He mentions that managing wastes can be time and resource consuming and it is very important to understand all the available options to manage wastes in a sustainable manner, effectively and in a safe way (El-Haggar, 2007).

El-Haggar's (2007) view is also supported by the Chartered Institute of Purchasing and Supply (CIPS, 2007), that states that the cost of waste management includes the cost of discarded materials, the insufficient use of raw materials, waste treatment, the use of water and energy in an unnecessary way, by-products waste disposal and products that are faulty.

We have to be flexible in changing social, economic and environmental conditions, if we want to have an effective waste management system. (Scharfe, 2010). These conditions need to be designed using a holistic approach than alternative and competing options. This leads us that a framework for waste management should encapsulate the following points (Davidson, 2011):

- Flexibility, to analyze quantity and quality information on several different scales
- Structure, to identify key goals and values
- Logic, in order to calculate the probability and the consequences that are related to a particular option
- Communicability, to communicate the key ideas to key stakeholders.

All of the above clearly state that the key points of a sustainable development are the establishment of practices in waste management that are affordable, effective and truly sustainable (Bigne et al., 2005). Jones et al. (2005) does state that the most frequent reported corporate social responsibility agendas, are indeed environmental issues. So, retailers do include the environmental responsibility aspect as well as the product and human responsibility, in the corporate social responsibility positioning. That results that they become aware of the fact that they need to trade ecological and harmless products while they apply their environmental policies and using recyclable packaging.

An effective waste management practice is very important by the retail sector and this can be obtained by facts that have to do with the annual waste and cost of food and packaging that is related to this waste.

The European Commission (2016) states that 143 billion euros is an estimated cost of the 88 million tons of food that is wasted annually in the EU. 5% of this number is produced by wholesale and retail sectors, while the 53% is produced by households. Following is a figure that presents the contribution of each sector to the food waste.

It may seem that the retail sector has the smallest amount, however the waste actual quantity is important. Examining this in detail, it shows that the total food waste for the retail, market and wholesale sector amounts to 9kgs per person per years, a number that is equivalent to 4,6 million tons in 2012. This food waste is calculated to a 20 billion euro cost per year (http://ec.europa.eu/).

The same source indicates that waste packaging becomes a concerning matter, as 157 kg of packaging waste were generated, per person, in 2013. This figure shows that food and packaging wastes do have impact on the environment and economy and that waste management should be one of the priorities of the retail sector.

This paper focuses on researching the sustainable development, the waste management and the corporate social responsibility practices in the retail sector. The main question that this research is going to answer is: Which practices are implemented by the Greek supermarkets, in the case of expired products and products' secondary packaging?

II. LITERATURE REVIEW

The supermarket sector in Greece is one of the most profitable in the Greek Economy. However, the global financial crisis has changed this, with a number of supermarket chains presenting a serious reduction, while some retailers (Marinopoulos and Veropoulos) were obliged to leave the market. Other retailers were able to strengthen the position their position by adopting to the new circumstances. For example, Lidl Hellas, was able to take advantage of the loss of Marinopoulos' loss of costumers and increase its sales to a 9,4% on the first five months of 2016, while on the same period the Greek supermarket sector had a decrease of 7,3%.

Figure 1 - Annual Sales Turnover of Major Firms of the Greek Super Market Sector
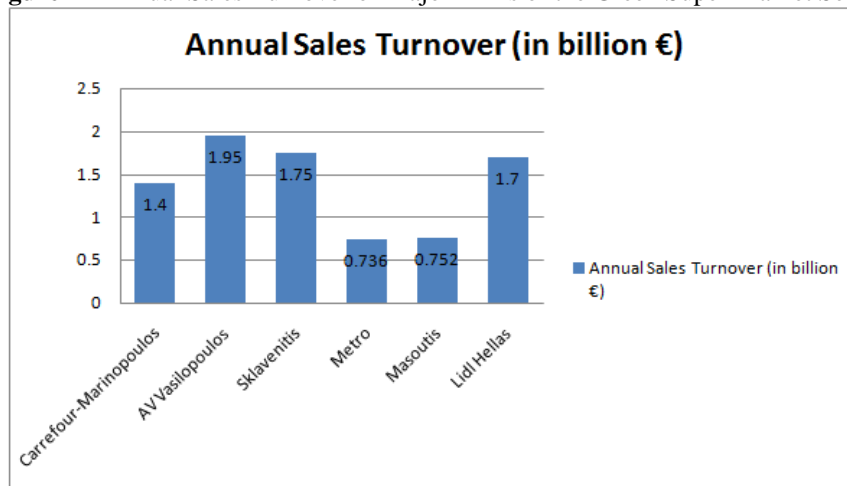
It is certain that the supermarket sector in Greece is going to face new challenges, since the acquiring of Marinopoulos by the Sklavenitis company, is yet to be decided. Also, the merging of Delhaize with Ahold, seems to have an effect on the AV Vasilopoulos chain. This shows that there is still an opportunity for development on the Greek supermarket sector, with foreign chains entering the Greek market. This can lead us to the conclusion that modern initiatives and investments will happen, resulting in the adoption of sustainability and waste management practices.

Lee et al. (2009) states that US retailers apply social programs that are followed by environmental and educational programs, that have community support. This support takes the form of local charities, sponsorship

and projects with environmental aspects. They also support that the retailers should publish their social responsibility beliefs on their website.

According to Jones et al. (2005) and Hughes et al. (2007), the initiatives taken by the core multi-stakeholder in the UK, includes a variety of sectors and is focused on the development and learning of ethical trade, whereas the multi-stakeholder initiatives in the US encompasses a more corporate idea, something that is based exclusively in the clothing sector.

Three broad sets of schemes can be identified on the structure of sustainability reports among the retailers - Jones et al. (2011). These are the environmental, the social and the economical. Authors are arguing that weak models of sustainability are adopted by the world's leading retailers, while they point out that the pursuit of growth and consumption by the retailers, lead to ignorance that consumption present patterns are unsustainable in the long term.

It has been suggested by Cacho-Elizondo and Loussaief (2010), that younger consumers are less related to social and economic issues, while they tend to support more an ecology sustainable development. A brand image can be described in five aspects being: sympathy, innovativeness, human touch, responsibility and opportunistic behavior

The concept of traceability has been researched by Guercini and Runfola (2009) and they divided it into two different approaches. On the first, a company traceability is used in order to strengthen the organizational control and is not sharing information with the customers. On second, the company uses traceability as a market tool that helps its costumers to identify the origin and the conditions of manufacturing of the products.

2.1 Studies on Waste Management and Retail Sector

Is it discussed by Eriksson et al. (2012), that the prevention of food wastage needs a better understanding of waste patterns. Mena et al. (2011) showed categorized the causes of waste into mega-trends in the marketplace, the natural causes and the management root causes. Triantafyllou and Cherrett (2010) placed emphasis on the fact of the increased use of hazardous materials in retail activities. Gustavsson and Stage, (2011), finally stated that waste of products can be reduced by packaging.

Jones et al. (2011), came to the conclusion that costumers are not willing to pay a higher price or increase the amount of products they purchase, to reward ethical behavior of companies. This led to the conclusion that consumers have a low awareness on business unethical behavior. However, Vahdati et al., in 2015, showed in their analysis that consumers have a positive reaction against companies with corporate social responsibility, something that has a positive buying behavior impact.

III. METHODOLOGY OF THE RESEARCH

This study has been done with primary data from Greek Supermarkets through qualitative research. The aim of this study, as it is already has been described, is to investigate the waste management practices through expired products and products' secondary packaging. In order to answer the main research question and draw conclusions, we will use qualitative data that will be collected through questionnaires. Blumberg et al. (2008) state that explorative study relies more heavily on qualitative techniques

For this research we will select randomly the participants. The sample will consist of supermarket chains in Greece, while the population will be supermarkets of the retail industry globally. Since there are considerable limitations, the results cannot be generalized to the whole population, without careful consideration.

Data has been distributed and collected via an online survey tool called "Survey Monkey", a survey development software that is able to allow online customization of questionnaires, sample selection, data analysis, bias elimination and data representation services.

An email invitation was send to the potential participants, sent via the Survey Monkey platform. A random selection of 300 invitations was sent and the researcher had the opportunity to write a welcome message, provide information about the identity, state the reasons and give information for the nature of this research. Finally the researcher was able to track 220 responses, send reminders and send thank you messages to all those that have successfully completed the questionnaire.

IV. KEY FINDINGS

According to the above mentioned research, some very useful insights, were gathered, concerning consumer's ideas and views about supermarkets green practices. In detail, a major environmental problem was identified as the management of both packaging and expired food products by almost all consumers, no matter their education background or their age. This point of view shows that the majority of the participants think that the importance of environmental policy in supermarkets, is big. However, this view is backed up mostly by participants of a younger age, while some older participants do not agree with it, fully or either partially.

Another finding was that consumers think that their local supermarket is quite environmental friendly and it takes into account to a big extent the climate change. Added to that, is the view of consumers that think that product packaging made by supermarkets is quite important, while they feel that the progress made in this sector, by manufacturers and retailers is quite small. A very small portion of consumers holding a Master's degree or a PhD, think that this progress is significant or even fair.

Consumers also think that the expired food handling is inefficient by their supermarkets. However, they tend to think that supermarkets provide a solid, credible and reliable information as it concerns their sustainability practices, although they do not think that those practices are applied to a big extend as it is also suggested by Pour et al., (2014).

One last finding is that consumers with a younger age or with a high educational background, do think that ethical considerations are important while purchasing a product and that they are for changing their habits in purchasing products, if they are to reward a "green" supermarket. In detail, they are not affected by advertisements made that emphasize the "green" nature of a supermarket, but they are willing to reward or even change their local supermarket, to reward another one with more environmental friendly practices. They also state that they are willing to buy more from their local supermarket, if it also applies greener practices. In contrast, it has been found that consumers will not pay higher prices in order to support adoption of environmental procedures by their local supermarkets. This contrast can be justified by the economic crisis that most of the Greek households face the last years as it is already has been proposed by Allwood et al. (2010).

V. CONCLUSIONS

As it concerns the results of this research, we can say that they tend to agree with all the previous similar researches and we can say that they even confirm or strengthen the previous findings. Finding that consumers in Greece are willing to reward supermarkets that follow greener and environmental practices and pay attention to them, agree with the findings of Wagner et al., (2008), as well as with the results of Vahdati et al. (2015). However there was one study by Stefanska and Wanat (2014) that appears to have a contrast with the above results and this can be referenced to the social and cultural differences that tend to lead to a different consumer behavior.

Concerning the practical view, this research may help supermarket managers with useful information. For example, they can profit by altering accordingly their procedures and their practices that is since our finding was that Greek customers care about the environmental and ethic policies, supermarkets can adopt the following points in order to increase their customer base:

❖ Advertising campaigns should focus more on environmental practices.
❖ There should be informative campaigns that will communicate the packaging and expired food products procedures.
❖ Reviewing greener and environmental practices, in order to adopt them or strengthen them if they are already use them

It has been also shown that ethical practices are rewarded and appreciated by the consumers, so an adaptation of these can only prove beneficial to the supermarkets. Findings of this survey can be applied to the whole population and not just to the sample of the current research, so a future research is recommended by applying by taking a wider geographical range, meaning that the consumers should be from different countries, to ensure the consumers' different purchasing behavior and the heterogeneity of the respondents. At the same time the research can also gather more demographic characteristics, so that it will be possible to identify the points that affect the behavior of the consumer and his/her views towards greener practices. Finally, there should be a focused and an in depth research that will only deal with the management of expired food or the packaging of products. Also, the use of a different methodology, e.g. supermarkets employees' interviews, should provide the reader with more information.

REFERENCES

[1] Allwood, J.M., Ashby, M.F., Gutowski, T.G., Worrell, E., (2010), "*Material Efficiency: A White Paper*", Resources, Conservation and Recycling, 55(3)
[2] Bigne, E., Andreu, L., Chumpitaz, R., Swaen, V., (2005), "*Percepcion de la Responsabilidad Social Corporative: Un Analisis Cross-Cultural*", Universia Business Review, 5
[3] Blumberg, B., Cooper, D.R., Schindler, P.S., (2008), *"Research Methods"*, 2nd European edition
[4] Bocken, N.M.P., Short, S.W., Rana, P., Evans, S., (2014), "*A Literature and Practice Review to Develop Sustainable Business Model Archetypes*", Journal of Cleaner Production, Vol. 65
[5] Canadian Institute for Environmental Law and Policy, (2008), "*Towards a Zero Waste Future: Review of Ontario's Waste Diversion Act, 2002: Discussion Paper for Public Consultation*", Canadian Institute for Environmental Law and Policy
[6] Cacho-Elizondo, S., Loussaief, L., (2010), "*The Influence of Sustainable Development on Retail Store Image*", International Business Review, Vol.3, No. 3
[7] Chartered Institute of Purchasing and Supply, (2007), "*How to Develop a Waste Management and Disposal Strategy*", retrieved from https://www.cips.org/Documents/About%20CIPS/Develop%20Waste%20v3%20-%2020.11.07.pdf

[8]   Davidson, G., (2011), "*Waste Management Practices: Literature Review*", Dalhousie University – Office of Sustainability, retrieved from
https://www.dal.ca/content/dam/dalhousie/pdf/sustainability/Waste%20Management%20Literature%20Review%20Final%20June%202011%20(1.49%20MB).pdf

[9]   El-Haggar, S.M., (2007), "*Sustainable Industrial Design and Waste Management: Cradle-toCradle for Sustainable Development*", Oxford: Elsevier/Academic Press

[10]   Eriksson, M., Strid, I., Hansson, P.A., (2012), "*Food Losses in Six Swedish Retail Stores: Wastage of Fruit and Vegetables in Relation to Quantities Delivered*", Resources, Conservation and Recycling, Vol. 68

[11]   Garcia de Leaniz, P.M., Rodroguez, I.R., (2012), "*Spanish Consumer'sPerception of Corporate Social Responsibility*", International Journal of Advances in Management and Economics, Vol. 1, Issue 4

[12]   Goel, P., (2010), "*Triple Bottom Line Reporting: An Analytical Approach for Corporate Sustainability*", Journal of Finance, Accounting and Management, 1(1)

[13]   Gustavsson, J., Stage, J., (2011), "*Retail Waste of Horticultural Products in Sweden*", Resources, Conservation and Recycling, Vol.55, Issue 5

[14]   Harris, J.M., (2003), "Sustainability and Sustainable Development", International Society for Ecological Economics, retrieved from http://isecoeco.org/pdf/susdev.pdf

[15]   Hughes, A., Buttle, M., Wringley, N., (2007), "*Organizational Geographies of Corporate Responsibility: a UK-US Comparison of Retailers' Ethical Trading Initiatives*", Journal of Economic Geography, Vol. 7

[16]   Jones, P., Hilier, D., Comfort, D., (2011), "*Shopping for Tomorrow: Promoting Sustainable Consumption Within Food Stores*", British Food Journal, Vol. 113, No. 7

[17]   Lee, M., Fairhurst, A., Wesley, S., (2009), "*Corporate Social Responsibility: A Review of the Top 100 US Retailers*", Corporate Reputation Review, Vol.12, No.2

[18]   McDougall, F.R., White, P.R., Franke, M., Hindle, P., (2001), "*Integrated Solid Waste Management: A Life Cycle Inventory*", 2nd Edition, Blackwell

[19]   Mena, C., Adenso-Diaz, B., Yurt, O., (2011), "*The Causes of Food Waste in the Supplier-Retailer Interface: Evidences from the UK and Spain*", Resources, Conservation and Recycling, Vol. 55, Issue 6

[20]   Pour, B.S., Nazari, K., Emami, M., (2014), "*Corporate Social Responsibility: A Literature Review*", African Journal of Business Management, Vol. 8(7)

[21]   Scharfe, D., (2010), "*Integrated Waste Management Plan*", Centre & South Hastings Waste Services Board/Waste Diversion Ontario and Stewardship Ontario

[22]   Stefanska, M., Wanat, T., (2014), "*Consumers' Perception of Corporate Social Responsibility and their Attitude toward Retailers – Its Significance for Creating Retailers' Competitive Advantage*", International Journal of Arts & Sciences, 7 (2)

[23]   Szeki, W., (2012), "*The Study of Consumer Perception on Corporate Social Responsibility (CSR) Towards Consumer Attitude and Purchase Behavior*", China: The Hong Kong Polytechnic University

[24]   Triantafyllou, M.K., Cherrett, T.J., (2010), "*The Logistics of Managing Hazardous Waste: A Case Study Analysis in the UK Retail Sector*", International Journal of Logistics Research and Applications, Vol. 13, Issue 5

[25]   Vahdati, H., Mousavi, N., Tajik, Z.M.,(2015),"*The Study of Consumer Perception on Corporate Social Responsibility Towards Consumers Attitude and Purchase Behavior*", Asian Economic and Financial Review, 5(5)

[26]   Wagner, T., Bicen, P., Hall, Z.R., (2008), "*The dark Side of Retailing: Towards a Scale of Corporate Social Irresponsibility*", International Journal of Retail & Distribution Management, Vol. 36, No. 2