

SUSTAINABLE MEASURES IN ENVIRONMENTAL PROTECTION THROUGH GREEN PRODUCTS

Cristina Teodora BALACEANU^{1,*}, Dragoș Laurențiu ZAHARIA², Mihaela GRUIESCU³,
Mihaela CONSTANTINESCU¹, György DEÁK^{2,*}

¹ Dimitrie Cantemir Christian University, Splaiul Unirii no 178, Bucharest, Romania.

² National Institute for Research and Development in Environmental Protection, 294 Splaiul Independenței Blv,
Bucharest, Romania.

³ The University of Economic Studies, Piata Romana no 6, Bucharest, Romania.

Abstract

The article presents the development of the Eco-label concept, from the current meaning of market to the sustainable meaning of green marketing. After analyzing the structure of economic goods which obtained the EU Ecolabel in 2019, the authors capture the transfer of knowledge in production of economic goods so environmentally friendly technologies are no longer a privilege only for the food industries but they are becoming regular in goods industries with a high risk of pollution. This is a structural, conceptual and even civic mutation in modern consumer's behavior: consumers' preference for environmentally friendly products and services. In order to identify the system of norms that set the basis for ecolabel principles in business have carried out a quantitative research, based on 197 people interviewed on business ethical behavior in Eco label. Research is based on the questionnaire and data analysis method. Thus, a number of 197 economic agents were questioned to identify the intention to use the Eco label, to have validity or disability in the economic, social and environmental plan that are generated by the implementation of the Eco label.

Keywords: Green products, Green marketing, EU eco-label, Sustainable development.

Introduction

In today's society, marked by deep changes in the environment and in consumer's attitude towards the environment and social issues, organizations have to adopt a responsible behavior, to be directed to a sustainable marketing, to make marketing decisions that limit the consumption of resources as much as possible [1], but also to try to change consumer's behavior towards sustainable development.

Green marketing can lead to competitive advantage and be a central part of a company's brand and value proposition [2]. Innovative companies have been rethinking the practice and have developed new strategies that transcend traditional means. In the past years, the practice of environmental marketing is changing, becoming both more sophisticated and individualized to the particular conditions of the practicing organization and target market [3].

Applying green market, defined as the process that creates, communicates and provides value for consumers in a way in which both the human and the natural capital are under sustainable development principle [4], involves rethinking the decisions mainly regarding the provided products and services.

* Corresponding authors: c.balaceanu@gmail.com; dkrcontrol@yahoo.com.

Products and services will be modified, both in terms of the raw materials used, the possibility of reuse of used packaging etc., in order to adapt to changed attitudes towards sustainable development concerns of consumers and legislation. A direct challenge consists in the transformation of the responsible attitude of the organization in value for the consumer or at least in a proposal of value that the consumer is willing to pay [5].

A significant tendency in consumer's behavior changing is that they prefer the taste of eco-friendly food industry products over the taste of similarly regular products. Specifically, when is informed that a food product is eco-friendly, the consumer tends to consider that it is tastier than the usual food product and decides to pay more for it. Moreover, these studies reveal that food products eco-labeling optimizes their perception from consumers, not only on their taste concerns, but also from the perspective of many characteristics that are not relevant to environmental protection. Consequently, it can be concluded that eco-labeling shapes consumers' sensorial expectations [6].

The approaching of economic issues from the perspective of sustainable development principles has led to conceptual remodeling in order to express the new mechanisms of economic functioning. Thus, the circular economy concept meets the needs of theoretical representing an economic system oriented towards reusing waste as raw materials and towards limiting the apparition of waste that can't return in the economic circuit. A circular economy is one that involves right in its functioning concept the recovery and the regeneration, as possible, of resources aiming to keep, at the highest level, the relevance of products, components and raw materials, differentiating the biological and the technical cycles. In this way, there can be found solutions for two major issues that nowadays affect the economy: the problem of limited feature of resources and the effect of pollution generated by the waste resulted from economic activities [7].

The human civilization faces the need to more responsibly approach the issue of waste generated by economic activities; these must be reintegrated in economic flows and to finally become growth factor. It is outlined a new vision on the economic advantage that is oriented towards both the projection of waste and streamlining access to those who own them. Also, a circular economy generates changes in the workforce structure as a resource and will make it necessary new tax policies, both at community level and globally [8].

Nowadays, there are over 400 Eco-labels [9] meant to tell the consumer messages about the fact that the product/services that have them are environmental-friendly. As is results from a study [10] conducted within 26 countries worldwide, 86% consumers are concerned of the impact of climatic changes and 71% consumers avoid buying goods that are brought from far away. According to other studies [11] over half of the consumers decides to buy a product if it has Eco-label or fulfill certain environmental protection conditions. However, the consumer is confused because of the multitude of labels / brands of environmental protection and faces the difficulty of deciding which the organic label that he can trust is.

It is often hard for consumers to verify markets for many "green" products based on eco-label programs to certify such claims. Typically, these programs validate, usually for a fee, that a company's product fulfills certain conditions and standards which confirm that it is environmental friendly. Finally, the company receives from the program the right to use the symbol of ecological label on packaging and promotional materials [12].

Adopting eco-friendly development policies should help increase the company's performance [13], but the company's performance is conditional upon support from management, a calendar very well done and resources supplying [14].

This research is intended to evaluate a new pattern of behavior consumer, a sustainable behavior, to identify the levels through which consumption becomes compatible to nature, to its capacity to regenerate itself. By manifesting propensity towards the consumption of goods with high content when it comes to the capacity of regenerating, economies can become sustainable.

The purpose of eco-label in promoting a sustainable marketing

To help consumers make decisions about the products they procure and to establish if they are environmentally friendly, Eco-labels were introduced in the late 1970s [15].

Eco-labels focus not only on the consumption of the product, but also evaluate all the environmental effects over the entire life cycle, including design, production, operations, maintenance, and disposal [16]. From producers' perspective, the Eco-label and the remarkable logo determine faster selling of products. Producers invest in reinventing, changing and improving products so that they are less harmful to the environment and in order to differentiate themselves from competition.

From a producer perspective the Eco-label is an instrument to reveal the environmental and/or social performance of products and services and thereby serves as a benchmark for improvements and competitiveness. The label is expected to affect the purchasing decision in favor of the labeled product and thereby be morally as well as economically rewarding for those companies that have been awarded the label [15]. Moreover, Eco-labeling may serve as a complementary instrument to create incentives for, and stimulate product innovations to, substituting products with high impacts on the environment for products and services with lower impacts.

However, criticisms of Eco-labeling have also been voiced. *C.C. Erskine and L. Collins* [17] have listed an extensive range of drawbacks of Eco-labels, including being elitist, being unable to prevent uncertified claims, and not being able to address many important environmental aspects. There are authors [18] who believe that industries tend to use weak eco-labels in political games to avoid strong regulation.

To make matters worse, some Eco-labels use patented advanced technologies to define the standards, which is often difficult to access or are unaffordable. This becomes even more complicated when each developed country supports different underlying Eco-labeling criteria, making it almost impossible for the manufacturers to exploit economies of scales [19].

As a consumer, it is often difficult to tell if the production or properties of a certain product are environmentally friendly. Eco-labels thus help to inform consumers to know the relevant information about the potential effects on the environment based on the product or service's life-cycle considerations [20]. There are several factors to take into account when depicting consumers' preferences. First of all, the individual decision-making process can be influenced by psychological, moral and cultural factors [21]. *B.S. Frey and A. Stutzer* [22] associate economic and psychological approaches in order to study "environmental morale and motivation." They debate if those individuals are led by generosity, social norms and reciprocal fairness, internalized norms (related to high principles inducing self-evaluations) and intrinsic motivation (i.e. the eagerness to achieve an activity for the wellbeing it induces in itself).

Individual decisions depend on ethical values and beliefs, customs, culture and several kinds of social, political and moral values, and also on institutional settings which can design such attitudes by supporting or not some behaviors and attitudes [23].

The consumer should no longer prioritize his preferences depending on the persuasion of marketing campaigns, but especially on their reduced impact on the environment. Therefore, it is produced an axiological-type of mutation in the modern consumer's decisive mechanism, sustainable development projects into the value system of the modern man. Green marketing finds in Ecolabel an efficient and modern tool to link sustainable production with sustainable consumption [24].

The civic values of the individual shape his economic behavior when approaches the environmental problems. Sustainable consumption is a concept that introduces several noneconomic determinants into the economic decisions of the consumer [25].

The European Ecolabel

According to the Global Eco-labelling Network an "Eco-label is a label which identifies overall environmental preference of a product or service within a specific product/service category based on life cycle considerations" [26].

The European Ecolabel is a certification mark given to some groups of products and services transmitting to consumers the message that these have a minimal destructive impact on the environment, that they satisfy the strict criteria of environmental protection. Basically, the product and services rewarded with EU Ecolabel are the result of a synergistic effort of all those who contribute to their achievement, incorporating the outcome of the most advanced and environmentally friendly technology of the moment. Moreover, the EU Ecolabel also expresses a philosophical shift of the consumer towards marketing strategies.

The European Ecolabel is a collective mark which consists of a graphic sign (a flower with petals made of stars) and a summary of the environmental performance of products being recognized throughout the European Union. Eco-Label was preceded by national environmental markings used with great success in their countries [27].

In 1992, the European Commission has decided to promote a single environmental label within the European Union. Currently, the application of EU Ecolabel is regulated within the European Union by the European Parliament and Council Regulation no. 66/2010 (EC) on the EU Eco label also transposed into Romanian legislation by the Government Decision no. 661/2011. The EU Ecolabel is granted for a broad range of product groups and for two types of service activities (non-food and non-medical ones). Until March 2019, has been granted over 1575 licenses in the European Union (Fig. 1), for products and services [28].

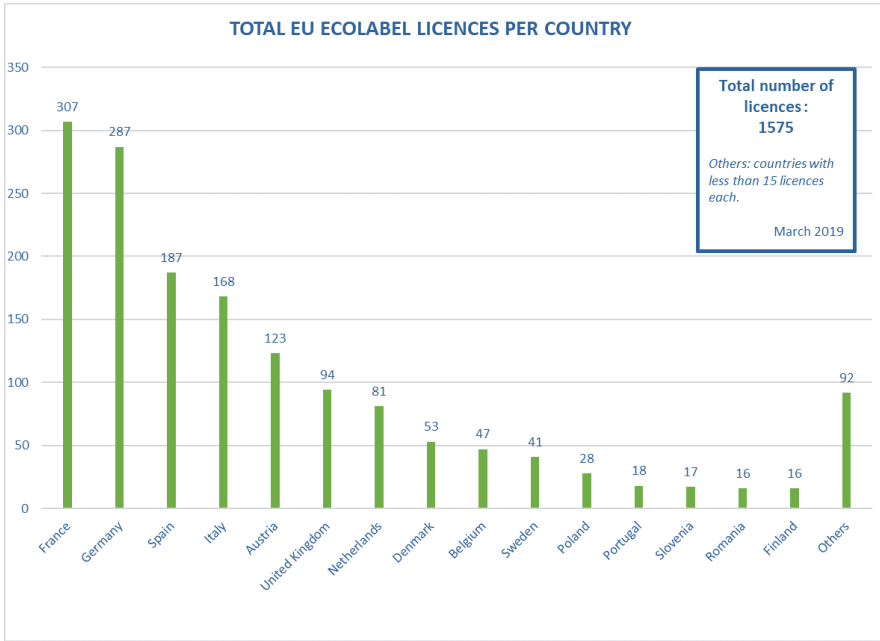


Fig. 1. Total EU Ecolabel Licences Per Country
Source: <http://ec.europa.eu/environment/ecolabel/facts-and-figures.html>

Clearly, most of the products for which the EU Ecolabel was requested are construction materials and indoor and outdoor paints and varnishes (51%), but on the European market there is a high interest when it comes to electronic products and household appliances, textiles, detergents, cosmetics, but also in terms of tourism services. For each of the products and

services that can apply for EU Ecolabel, very demanding criteria are established by taking into consideration:

- All the incorporated technologies should have maximum energy efficiency or to use of clean energy sources;
- The negative environmental impact of all used technologies, substances and procedures should be minimized.

In assessing products and services, testing and checking them can be made only by specialized accredited institutes, which gives consumer confidence in the technological parameters and environmental performance of products. The application of procedure for obtaining the EU Ecolabel is voluntary and it is done only at the request of companies and it is punctually granted for goods or services over a given period of time.

In Romania, companies ask the Minister of Environment for the EU Ecolabel for a particular product/service, placing in this regard, a dossier which proves that it meets ecological criteria set out by the European Commission. At national level it is set, as a consultative dossier evaluation body, the National Commission for granting EU Ecolabel.

The economic operator and the national competent authority, namely the Ministry of Environment, conclude a contract on the conditions of using the EU Ecolabel according to Normative Act no 661/2011, so that, if the product for which it has been awarded amendments that change the initial criteria, to resume the procedure for granting the European environmental mark. In their turn, the criteria for granting EU Ecolabel is periodically adjusted (between 3 and 5 years), and granting EU Ecolabel for a product/service is done only for a period of time corresponding to the period in which the criteria for which it has been obtained are valid. Products/services which obtain EU Ecolabel are displayed on the European Commission website. Moreover, in the European Commission are carried out programs to guide companies to use green marketing, in order to reshape consumers' preferences. In March 2019 Spain had 42.5% of the products and services that have obtained the Ecolabel, Italy 12% and Germany 6% of total environment marks awarded [28], as seen in Figure 2.

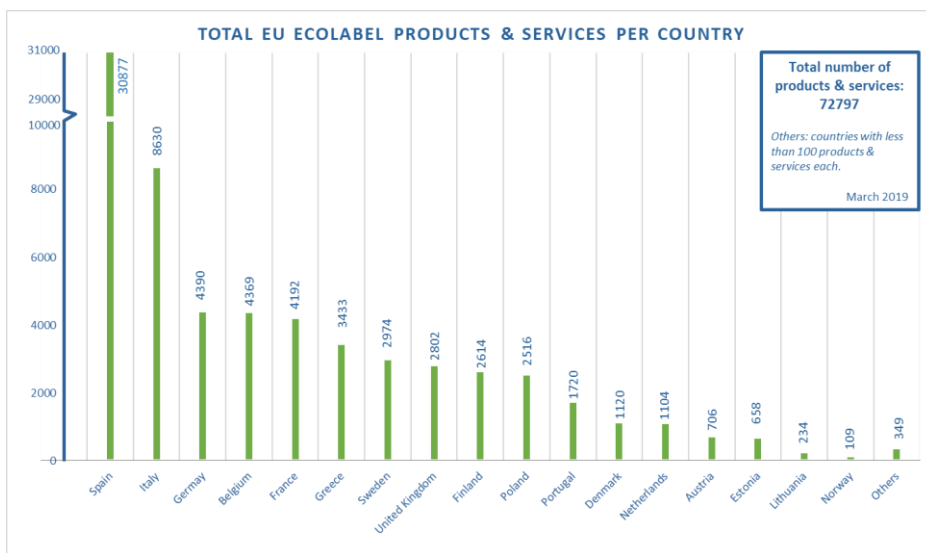


Fig. 2. Total Eu Ecolabel Products & Services Per Country

Source: www.ec.europa.eu/environment/ecolabel/facts-and-figures.html

At European Commission level there is an intense concern for optimizing the EU Ecolabel, taking action in the following areas:

- Studying and monitoring the use of green marketing in various European markets;

- Developing a harmonized method for calculating the ecological footprint of products throughout their life cycle.
- Examine whether additional measures are also needed, what are these and for which markets.

EU Ecolabel promoters associate it with the concept of smart strategy, having at least a double functionality: the consumer is allowed to easily identify products/services that have less consequence about the environment and the contractor to simultaneously opt for a commitment to the principles of sustainable development and to a growth factor to their business [29]. From this perspective, the assertion The EU Ecolabel makes green choices easy can be regarded as a genuine slogan to promote both consumption and sustainable production [30]. Particularly important are the requirements for receiving the EU Ecolabel, separately set for each area in which it can be granted and which are reviewed periodically, depending on the objectives of environmental protection at European level. The EU Ecolabel aims to reduce the use of hazardous chemicals and substances that can be harmful to the aquatic environment. Also the spaces for tourists' accommodation and campsites that have obtained the EU Ecolabel comply with restrictions in the use of pesticides and fertilizers. Given that, according to a survey conducted by Lexmark, each European employee prints, on average, 30 pages, it becomes significant that the EU Ecolabel is granted only for paper that comes from recycled fibers or from forests managed in a sustainable way and that for producing paper charts or copy-paper which have obtained the EU Ecolabel it is forbidden the use of chlorine gas.

With the help of the EU Ecolabel, buyers' option for sustainable consumption can become a tool for business development. For example, UPM (The Biofore Company), the largest global producer of graphic paper, annually sells about 250,000 tons of paper products which have obtained the EU Ecolabel, which generates revenues of about 3.8 billion/year. Wall paints with the EU Ecolabel contain ten times fewer volatile organic compounds (VOCs) than similar conventional products, which sensitizes the buyer intended for both the vision of sustainable economic development, but also for consumption as less damaging as possible to his own health and to his family's health.

For companies, there are situations where obtaining the EU Ecolabel can be approached from a perspective of economic efficiency. For example, Jardim Atlantico Hotel in Madeira (Portugal), which obtained the EU Ecolabel, has reported after the first year of certification significant reductions in consumption: 11% less power consumption (kW/h), 26% gas (kg), with 8% water (l) and 17% of towels used per customer [28]. It is very interesting to analyze the dynamics, and also the structure of types of products and services that have obtained the EU Ecolabel. It may be noted that recently, tourists' accommodation market has shown a strong and steady interest in the EU Ecolabel and that tourism competitive environment increasingly adopts this performance criterion.

A preliminary conclusion would be that in the absence of legislation to stimulate sustainable production, market orientation towards sustainable consumption is already a reality of today's economy. Consumers' preference for environmentally friendly products and services is the main factor supporting sustainable production. However, successful implementation of the EU Ecolabel confirms the need to promote green marketing incentive programs at European level. The consecration for over two decades at the continental level of the EU Ecolabel has enabled the creation of a large portfolio of case studies of businesses that have been developed by obtaining certification for their products/services. But we will stop to analyze a case study very relevant to the impact of using the EU Ecolabel in public procurement. The city of Kolding in Denmark is a reference for promoting an integrated vision on sustainable development within the community because almost all government procurement in that village are green, won by products/services that have obtained the EU Ecolabel or other recognized environmental labels (including Nordic Swan and Bra Miljøval). Obviously, this criterion can be applied only to products/services that can be awarded with the Eco-labels. Within the local government, since

1998 it has been pursued the implementation of GPP (Green Public Procurement) as programmatic policy for public procurement [28].

In recent years, in public procurement in Kolding, obtaining the EU Ecolabel has become a criterion for many products and services including: cleaning products, copying paper, work-wear, laundry (for used detergent), printing services (for used paper), and fleet management (for used lubricants). In terms of public administration, Kolding has accumulated extremely valuable experience on the impact of green procurement. One of the most important conclusions that should also be tested in other local communities is that environmental friendly products do not have disadvantageous prices. If such a conclusion can be drawn in public auction, we believe that, in analyzing the economic efficiency of green procurement, another criterion should also be introduced: the cost of managing generated waste.

European legislation enshrines the principle: the polluter pays, which means that, ultimately, the price of introducing a product/service on the market should include the cost of managing waste that it generates. From this perspective, sustainable production could be approached by the economic efficiency. In order to achieve more ambitious targets in terms of promoting sustainable development principles, the EU Ecolabel should be supported by more complex instruments to determine the impact of products and services on the environment. The identification of the ecological footprint of the products represents not only a complex instrument to measure the effect of the economy on the environment, but also a solution to promote the behavior of the sustainable consumer. The economic actors request warning means regarding the impact of the economic goods produced and consumed on the environment in order to use only those ecological production methods. This is possible only through the support of public policies at national and European level.

Experimental

Materials

The research methodology involves a quantitative analysis based on the collection of data from 197 respondents, legal entities from Romania. The first stage of the research, the documentation, consisted of the accumulation of new information by studying the literature and the structuring of the current knowledge in the researched field as well as the collection of data regarding the possibility of implementing the eco-label in Romania. The second stage of the research, the synthesizing of data and their grouping consisted of the use of the data gathered formally. The third step, the processing and analysis of the data obtained in the documentation stage, involves the use of the econometric tool in order to identify statistical correlations validating the research objectives. At the same time, the level of economic performance generated by the implementation of the eco-label among the Romanian producers is analyzed.

Methods

In order to identify the system of norms that set the basis for ecolabel principles in business, we used the results of research based on 197 people interviewed on business ethical behavior in ecolabel in the context of methodology established in connection with scientific issues. Scientific research is based on relevant aspects to the outcome of research, as principles of ecolabel, legislation on ecolabel, sustainability and environment protection. We have created a set of 5 questions that were addressed to the 197 interviewed economic agents in order to identify trends in the opportunity of implementing the Eco label in their own businesses (Table 1).

The collection of includes a specimen of 197 people, Romanian businessmen who are doing business in the field of sustainable economy. The questionnaire used in the survey contains 5 general questions about the use of the eco-label, EU rules and Romanian legislation on the implementation of the eco-label, actions of the eco-label on the sustainable development of business. The business environment will have new development opportunities if it addresses

and incorporates the eco-label among the means of product promotion and labeling, impacting on the level of consumer knowledge and security. The Survey questions and measurement scales are presented in table 2.

Table 1. The sample structure

Characteristics	Share in the Sample	
Age groups of Entrepreneur	18-24 years	1.80%
	25-34	6.23%
	35-44	19.21%
	35-54	67.27%
	55-64	5.40%
	Over 64	0.09%
Residence	Urban area	68.27%
	Rural area	31.73%
Company**	micro	6.45%
	small	81.22%
	middle	12.33%

Table 2. Survey questions and measurement scale

Questions in Our Survey	Measurement	Results
Do you work in using environmentally friendly product certification?	Very often	0.65
	Often	0.23
	Seldom	0.09
	Very seldom	0
	Never	0.03
Do you think it would be advisable to start the procedure for obtaining the eco-label for the field in which you activate?	Very often	0.48
	Often	0.33
	Seldom	0.07
	Very seldom	0.03
	Never	0.09
Do you know the procedure for obtaining the eco-label at the level of a Member State of the European Union?	Very often	0.42
	Often	0.37
	Seldom	0.14
	Very seldom	0.07
	Never	0
Are you agree that the Ecolabel certifies elements that analyze air quality, water quality, soil protection, reducing the amount of waste generated, saving energy, managing natural resources, preventing global warming, protecting the ozone layer, protecting the environment, noise and biodiversity which are affected in the manufacture and consumption of the product?	Very often	0.48
	Often	0.35
	Seldom	0.12
	Very seldom	0.03
	Never	0.02
Do you consider that the advantages offered by the ecological label to the trader are highlighted: high potential for environmental protection, which will determine the choice made by the buyer; competitive advantages for goods producers and / or service providers; high consumption demand or end use through sales volume?	Very often	0.46
	Often	0.39
	Seldom	0.09
	Very seldom	0.06
	Never	0.02

Results and discussion

The research is based on identifying the interest of respondents in the implementation of the eco-label, as a measure to protect the environment in the direction of sustainable economic growth. Thus, three research objectives have been established to verify the extent to which the interviewed economic agents are interested in implementing the Eco label:

- H1: analyse and description of principles of Eco labels;
- H2: identification of the effect of Eco labels above sustainable development;
- H3: identification of the effect of Eco labels above firms performance;

The H1 objective was identified in all 5 questions proposed for interviews among the 197 respondents. Thus, a significant number of respondents appreciate that they are very often

and often interested in the application of the eco-label principles from their own economic performance, but also from the perspective of a sustainable development of the economy. Environmental care is transposed into the corporate social responsibility, for the purpose of a clean, friendly production method.

The H2 objective is mainly identified in the 5 questions addressed to the interviewees, which denotes their interference for the environment as a result of the efficient use of natural resources confirmed by the implementation of the eco-label. Thus, the interviewed economic agent's capture, through the assumed behavior, through the decision to implement the eco-label, ethical, rational behavior, based on social responsibility [31].

The H3 objective is identified in all respondents' questions, which shows that economic agents consider the eco-label to have an effect on global demand. The performance of a company is directly determined by the quality of the products made, in accordance with the principles of sustainable development.

Research results show that values above 0.4 correspond to a positive understanding of the role of eco-label principles in the sustainable economy from the point of view of sustaining the demand for economic goods and the environment, and the values below 0.3 correspond to an eco-label approach from the cost- benefit, without taking into account environmental sustainability. In this respect, the study will push for the promotion of eco-label principles, particularly among those undecided or undecided about the social impact of using the eco-label. It is necessary to support entrepreneur's capacity to recognize sustainable opportunities, influenced by a set of factors, among the most important being knowledge and motivation [32].

Conclusions

The purpose of the research was presented in advance, incorporating the principles of eco-label, sustainable development in general in a business model of a company, as an innovative vision of the performance system. The research method provides a representation of the theoretical acquisitions in the field of study, and also highlights the benefits of using the eco-label at the level of a group of business (197) focus on sustainable approach of the production cycle, so this study has significant managerial implications.

At the economic level, a new perspective of economic efficiency should be promoted linking investment in sustainable production with reduced costs for managing the generated waste [34]. The EU Ecolabel is not only a tool of sustainable development, but also a redoubtable green marketing strategy for promoting the most developed technologies of informational society. Basically, the EU Ecolabel is an application which gives common sense to the two development directions and increasing the market share of products and services which obtain it will simultaneously stimulate the technological process and the sustainable development.

Sustainable consumption and production can be stimulated by legislative changes at EU level to encourage green public procurement. From this perspective, there are extremely useful the tools for detected how any product report to the clear criteria of environmental protection, and EU Ecolabel becomes an European project to stimulate sustainable development procedure and a modern tool for implementing green marketing.

Separate economic growth from environmental degeneration and the use of non-renewable resources involves not only the implementation of legislation aimed at empowering and penalizing polluters, but also of tools that stimulate environmentally friendly products, ecological if possible, through marketing mechanisms [5]. The EU Ecolabel expresses a new vision in approaching the economic competitiveness issue from the perspective of the principles and values of sustainable development.

For Ecolabel become an effective marketing tool for environment, it is necessary that the criteria for the label are strategically developed, i.e. the objectives for those processes being

clearly defined, accuracy in label information [33] and strategies to reach these objectives being laid out within criteria development processes. The criteria development processes and the clarity in communication tell the producers what is required and should guide improvements in manners to protect and stimulate the consumers to adopt the proper goods for their needs [17].

But if the labeling system designs too strict requirements, few companies will be able to use the label, and revenue will not reach the required levels. On the other hand, many producers and accepted product lines make the label irrelevant due to the poor environmental or health benefits of the product with this label [35].

Moreover, it offers a synthesis of existing literature, because it is based on the results of various studies previously conducted. Researchers can lay the foundations for more in-depth research into ecolabel, based on our findings. The study may present limits in terms of designing a production strategy to delimit the level of budget allocated to the implementation of the eco-label. The study can focus on the positive externalities highlighted by the implementation of the Eco label at the enterprise level: rational use of resources, sustainable business development, increasing the number of consumers.

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