

# Ecological Marketing Applied by Companies that Develop Coal Mining in La Guajira, Venezuela

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## Abstract

The purpose of the research was to describe the Ecological Marketing applied by the companies that develop coal mining in La Guajira, Venezuela. The type of research was quantitative with non-experimental descriptive cross-sectional design, taking as a population 22 supervisors of the coal company Carbones del Guasare of La Guajira, Venezuela, and the sample consisted of 21 production supervisors. To collect the data, a questionnaire consisting of 51 items was used, on a Likert scale with several response alternatives: always, almost always, sometimes, almost never and never. The results of the research indicated that the ecological marketing applied by this company is good and should continue implementing actions that help to maximize the strategies focused on this field, in order to promote the coal-producing company as friendly to the environment.

**Keywords:** Green Marketing, Coal Mining, Environment

## Introduction

The companies that are dedicated to the exploitation of coal have modified their methods of production and extraction, in order to obtain more products, minimize operating costs and sustain the demand for coal without considering the environment [1]. However, this activity can cause negative environmental impacts, which is why there is an environmental authority that guarantees the environmental conditions necessary to comply with quality standards that facilitate the economic and ecosystem sustainability of a region [2].

Taking into account the above, people have become aware of the importance of the negative impacts generated by not taking care of the state of the environment, which has driven the development of the green economy [3]. Therefore, the company strives to acquire and consume products with better quality, which help improve and preserve their environment, where companies propose sales techniques that promote this ideology and manage to cover the ecological market [4].

In the last years (to the present study), the ecological marketing has taken a great importance in the development of the productive processes that the companies implement, due to the tendency of change that appears in the practices of commerce focused on the protection of the environment, caused by the needs of the consumer [5]. The foregoing has caused companies to create marketing strategies that allow them to achieve a greater impact on customers and the environment, to raise awareness about their protection and preservation [6].

Considering what has been described, the research aims to describe the ecological marketing applied by companies that develop coal mining in La Guajira, Venezuela, in order to provide the internal customers of this company with strategic guidelines that allow the development of ecological marketing.

## Methodology

According to the variables that were used, the type of research was quantitative with a non-experimental descriptive cross-sectional design. Not experimental, because the variables were not manipulated at any time, their natural behavior was observed and analyzed [7]; cross-sectional, because the information was collected at a certain moment of time [8]; and descriptive, since aspects such as: state, characteristics, factors and procedures of the studied variable were detailed [9].

### *Population and sample*

The population was made up of 22 supervisors from the mining company Carbones del Guasare. According to the above, a probabilistic type sample was established, determined by Formula 1.

$$n = \frac{4 * N * P * Q}{E^2 (N - 1) + 4 * P * Q} \quad (1)$$

Wherein: n = Sample size; P = Probability of Success; Q = Probability of Failure; E = Sample Error Range; N = Size of the population. By applying the formula, a sample of 21 supervisors was obtained, who provided information on the processes, benefits and consequences of coal extraction, in order to describe the influence of their work with the environment.

### *Techniques and instruments for gathering information*

The documentary review and the survey were used as collection techniques. The first, through analysis of concepts in scientific databases, books and conference

proceedings; There were dimensions or aspects that facilitated describing the application of ecological marketing strategies in coal extraction companies, as evidenced in Table 1.

Table 1. Variables and dimensions identified in the research

Variable	Ecological marketing strategies			
Dimensions	Product policy	Pricing policy	Distribution policies	Communication policy

On the other hand, the second technique was applied to obtain relevant information on the information shown in Table 1. This was done through a questionnaire, which was composed of 51 items with closed response alternatives of simple selection (Likert scale type), namely: Always, Almost always, Sometimes, Almost never and Never.

#### ***Validity and reliability of the collection instrument***

To validate the instrument, a group of 5 experts was selected in the areas of management, marketing and methodology, in order to determine the relevance of the questions with the aim of the investigation. In this way, the instrument was applied to the selected sample and the data that supported its validity were obtained. Likewise, the reliability of the instrument was determined by applying the Cronbach's Alpha coefficient, which produced a value of 0.93.

#### ***Data analysis***

Frequency tables were made to examine the behavior of the established aspects with respect to the answers obtained in the questionnaire and to determine the focus of the strategies that facilitate the implementation of the ecological market in coal mining companies in La Guajira, Venezuela.

## **Results**

The analysis and interpretation of the data collected in the application of a questionnaire were carried out using descriptive statistical techniques such as: the arithmetic mean, relative frequency and standard deviation, which produced answers on the application of ecological marketing strategies in the coal extraction company, as evidenced in Table 2.

Table 2. Ecological marketing strategy

Alternatives	Product policy	Pricing policy	Distribution policies	Communication policy	Average
Always	53,33%	39,22%	36,76%	51,96%	45,32%
Almost Always	21,18%	17,25%	36,60%	28,43%	25,87%
Sometimes	10,20%	29,80%	13,73%	12,25%	16,50%
Almost Never	10,20%	8,63%	5,88%	7,35%	8,01%
Never	5,10%	5,10%	6,54%	0,00%	4,18%
Totals	100%	100%	100%	100%	100%
Averages	4,14379	3,79739	3,92157	4,2418	4,02614

It is observed that supervisors always consider ecological marketing strategies as fundamental bases for the development of the productive process, that is, policies aimed at favoring the environment are practiced. Regarding the above, [10] they argue that ecological marketing helps to create awareness among customers about environmental problems and generates demand for products that are friendly to the ecosystem, which drives the production process.

### ***Product policy***

The production supervisors stated that the company implements product policies where an ecological seal is evident, which denotes that these companies carry out environmentally friendly processes and try to minimize the negative impact produced when extracting the coal. This is consistent with what is stated in [11], who mention that ecological products contain ecological limits in the design thereof, in order to prevent the increase of the environmental impact generated by their production.

### ***Pricing policy***

The production supervisors assure that a price setting is considered, which allows the consumer to show an added value to the product that identifies it as an ecological product or friendly to the environment. As a support, [12] they suggest that the products should provide the performance of a traditional product, in order to provide consumers with the confidence to acquire these and promote the ecological market.

### ***Distribution policies***

Respondents assured that the companies implement beneficial actions at the time of transporting the product to the boarding sites and return to the production area, which indicates that these distribution systems have techniques to minimize the impact on the environment. This is in accordance with [13], who mention that the distribution of organic products must be carried out from the point of view of protecting the environment and complying with the norms of availability of products and / or services in the market.

### ***Communication policy***

The supervisors assured that the company implements communication systems that allow internal clients to keep informed about beneficial actions of the production process when it is friendly to the environment. This presents a little similarity with what is stated in [14], who mention that people are not affected by the information obtained from organic products, however, studies have shown that some consumers use this information to adapt their attitudes and behavior when buying these products.

## **Conclusions**

The analysis performed on the results obtained from the questionnaire allowed to

establish the following conclusions: 1) ecological marketing strategies are fundamental bases for the development of the productive process and the improvement of the quality of the coal mining companies; 2) policies that allow the production, distribution, valuation and transmission of products, services or campaigns that promote the growth and environmental sustainability of the city must be taken into account; 3) coal mining companies must execute production processes friendly to the environment, which allows them to obtain products that contribute to the integrity of the ecosystem; 4) ecological marketing strategies must be shared, in order to promote the development of new strategies that support the carbon extraction process in an ecological way.

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