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“TEN YEARS WORKING TOGETHER FOR A SUSTAINABLE FUTURE”

Evaluation of costs, benefits and externalities associated with the product life cycle in the context of the Circular Economy: A study for aluminum packaging

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Abstract

The Circular Economy aims to transform waste into resources and seeks to link the production and consumption activities. Conceptual logic for value creation is based on the economic value obtained by reusing a product for the production of new offerings. The development of business models in the context of the Circular Economy is gaining importance in the academic, corporate and government environments. The transition of companies from a linear to a Circular Economy (CE) brings a series of challenges, and it is essential to understand the impact of changes in their business models. In this context, it is necessary to evaluate the costs, benefits and externalities by applying tools that capture the variables involved throughout the life cycle of a product. Thus, objective aims to analyze the benefits of using aluminum packaging in the food industry, combining the Life Cycle Costing (LCC) method and externalities, since in the context of the circular economy one should consider not only the cost of one Product during its life cycle, but also the economic benefit or added value for society. The study seeks to contribute to the evolution of concepts and methods by helping to integrate and optimize economic, social and environmental considerations to provide more sustainable scenarios in the future. The results obtained through the LCC method and externalities indicated economic benefit and reduction of CO₂.

Keywords: *Circular Economy, LCC, aluminum packaging, Externalities*
