

LCA: CONVERGENCES WITH ECO-INNOVATION AND ECODESIGN

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Goal:

The current ecological crisis demands change in various areas of economic activity and production process. Different disciplines have highlighted the importance of including environmental aspects in the design stage as part of this change, with convergence in some of the debates. Concepts such as eco-design and life cycle assessment (LCA) have promoted a review of the techniques of conception, design, and production of goods and services. This can lead to the development of eco-innovations which will potentially generate several environmental benefits. Eco-design integrates environmental aspects in the design stage of the development of products with the aim of reducing negative impacts, considering the whole life cycle. LCA, on the other hand, has emerged as a methodological tool that assesses the impact and environmental aspects of a product, process, or service throughout the different stages of its life cycle, allowing the complete or partial analysis of these stages. LCA has proved relevant for companies' decision making in the promotion of sustainable practices and the adoption of eco-innovations, receiving little attention from academic literature. This study proposes to address this research gap by reviewing and discussing the concepts of LCA, eco-innovation and eco-design.

Method:

As method, this study is based on a bibliometrics investigation using Scopus and Web of Science databases.

Results:

As main contribution of this study, it outlines that: (i) LCA allows to find critical points in the product's life cycle; (ii) eco-innovation is the type of change to be developed to improve a product or service at these critical points; (iii) cross-fertilization between LCA and eco-innovation should promote better opportunities for eco-design proposals. The study concludes that the cross-fertilization between LCA, eco-innovation and eco-design is quite plausible, but the studies converging these three areas are currently limited, only 26 articles were found in the Scopus database and 38 articles in the Web of Science database that addressed the three themes simultaneously. Future studies and practical applications are still required to support the discussions presented in this study.

