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XXIII Congreso de Ingeniería de Organización



**Organizational
Engineering
in Industry 4.0**

BOOK OF ABSTRACTS

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**“13th International Conference on
Industrial Engineering and
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“XXIII Congreso de Ingeniería de
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The adoption of the Life Cycle Assessment methodology by companies

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Keywords: Life Cycle Assessment (LCA); Life Cycle Management (LCM); Sustainability; Basque Country.

1 Introduction

The increase of the pressure that both institutions and consumers exert on companies to improve their environmental performance in the last decades has forced them to redouble their efforts in this area. It is out of the question that identifying and evaluating the impact that a given product has on the environment is the first step in order to reduce it. It is also quite obvious that it is not enough for companies to carry out this exercise focusing exclusively on their manufacturing process, but it is imperative to consider the impacts generated by the product throughout its entire life cycle. In other words, it is essential that companies adopt the Life Cycle Assessment (LCA) methodology. However, despite the important effort made to improve the LCA methodology and despite that the first works addressing this issue go back to the beginning of the nineties (Sullivan and Ehrenfeld, 1992), the way in which companies adopt it in their strategies has not yet been studied in depth (Nygren and Antikainen, 2010).

2 Objectives

This research tries to fill part of this gap by making known the reasons why companies use LCA, the objectives they pursue with it and the benefits they obtain from it, as well as trying to anticipate its foreseeable evolution.

3 Methods

The criteria for the definition of the study population were the following: Companies in the Basque Country (Spain), from the industrial, construction and primary sectors, with more than 10 employees and owning at least one

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environmental certificate. A questionnaire was sent to the 661 resulting companies and 153 valid responses were collected.

4 Results

LCA is still far from being widespread in the Basque Country. Just 25.5% of the companies asserted to use LCA, another 43.6% acknowledged not even knowing the tool and finally, 30.7% of them claimed to know it even though they do not use it. The results also indicate that LCA is more used as the size of the company increases both in terms of employees and billing. Regarding the sectors, Machine Tool, Construction and Construction Materials and Furniture are the most actives. Surprisingly the motivations to carry out LCA studies seem to be mainly internal and not so much to respond to external forces such as legislation or competitors. Companies are quite cautious regarding the benefits provided by LCA studies. Although they admit the improvement of the environmental performance of the products and the improvement of the image of the company, they hardly perceive an increase in the economic benefits. Most of the companies using LCA confirm their intention to continue using it (87.18%), while very few acknowledge that they will stop doing so (7.69%). Finally, they are also optimistic about the future of LCA. Among users the majority believe that LCA will be a tool of widespread use in the future (69.23%). Among non-users however, the opinion is not as positive, although those who say that it will be generalized are still more than those that believe it will not.

5 Conclusion

The LCA in the Basque Country is therefore still a little-known tool used mainly by large firms belonging just to some specific sectors. In the opinion of the companies it provides few economic benefits, although its ability to improve the environmental behaviour of the products and the image of the company is recognized. Despite it and the little support they say receive from public institutions companies think that its use will become widespread in the future and affirm they will continue using it at least as intensely as they currently do.

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