

## **Circular Economy in Airlines: Assessing the Effectivity of CE Principles in Commercial Flights**

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*Abstract.* Airlines have experienced high growth during the last decades, and they nowadays support many industries thanks to the possibility of moving and transport people through several countries in a short period. This study aims to compare the differences in environmental performance among those airlines which apply a closed-loop system or has adopted some of the circular economy principles and those which do not. It is essential to mention that the increase in the number of travels and fleets is bringing to light some troubles in terms of direct and indirect impacts of their activity: There is a significant booster in noise surpassing barrier sound, land and soil changes due to the technical requirements of planes and several harms to biodiversity because of the shift they suppose to the surroundings.

To estimate the environmental performance, we analyse the level of emissions, wastes and other polluting substances, and we compare them to determine if the appliance of circular economy principles to transform the business model is useful to reduce the amount of produced waste and pollutants or if, on the contrary, CE does not involve a higher environmental performance.

Aiming to measure the CE effectivity the present work is going to use two main sources of information to measure if their actions are being appropriate in the field of a circular economy or if on the contrary, airlines are not adequately integrating some of the CE principles in their strategy, culture and values. Thanks to the measurement of the information extracted from their corporate social responsibility report in the format of best practices of the industry and the main KPIs linked to the waste treatment and CE principles adoption extracted from Datastream; we will be able to determine if the implementation of CE in airlines is effective in terms of pollution reduction or if, on the contrary, there is no any specific effect.

*Keywords:* Airlines, Environmental performance, Service industry, Waste management, Circular economy.