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SUSTAINABLE DEVELOPMENT GOALS IN THE AUTOMOTIVE INDUSTRY: TELLING OTHERS HOW GOOD YOU ARE

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Introdução

Awareness of sustainable development has gained popularity, especially by environmental conferences developed by the United Nations (UN). In 2015 the UN 2030 Agenda for Sustainable Development defined 17 major Sustainable Development Goals (SDG) to address today's global problems [4]. Concerns about sustainability have also affected the automotive industry that is simultaneously one of the most prominent symbols of pollution, while one of the most important for a country's economy, being under increasing stakeholders' pressure to align its core business strategies with sustainability.

Problema de Pesquisa e Objetivo

Although past studies have examined the sustainable performance of automotive manufacturers through the lens of Multicriteria Decision Analysis (MCDA) methods, there still calls for studies applying MCDA framing it with sustainability in this industry [2], as these evaluations involves many opportunities, parameters, constraints, spheres, perspectives, stakeholders, values, uncertainties, etc. [1]. In this background, this study aims to examine the performance of leading automotive manufacturers on the 17 UN SDGs.

Fundamentação Teórica

The study is anchored in two main topics: the importance of SDG in the automotive sector and a brief review about the application of MCDA in sustainable-related studies. We could verify that the automotive industry faces challenges not just related to fuel emissions, but also because a car uses energy and generates emissions even before it becomes a vehicle. Additionally, there are issues found in the manufacturing line, such as labor exploitation and discrimination, as well as the fact that raw materials are sourced from natural resources.

Metodologia

The study was exploratory and employed a quantitative approach, using secondary data from companies' environmental reports. Eleven publicly traded companies in the automotive sector were analyzed from 2018 to 2023. Analytical procedures involved a fuzzy Multicriteria Decision Analysis (FCDA): the fuzzy Preference Ranking Organization Methods for Enrichment Evaluations (PROMETHEE) II method. In addition, we conducted a sensitivity analysis using the Stochastic Multicriteria Acceptability Analysis (SMAA) method.

Análise dos Resultados

Fuzzy PROMETHEE II procedure consisted of eight main steps and was implemented using the Python programming language 3.10. Results from the Fuzzy PROMETHEE II method show that the automotive manufacturer that stands out the most in terms of adopting the 17 SDGs is Daimler. Conversely, the firm with the most difficulty in implementing the SDGs is Denso. We could notice that during the COVID-19 years, there were shifts in the positions of automotive manufacturers regarding the adoption of the SDGs. Also, sensitivity analysis demonstrated ranking probabilities regarding these firms.

Conclusão

Our theoretical framework added to the application of a MCDA method enabled us to understand that the automotive sector is sensitive to environmental issues as a potential driver towards

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sustainable development through its performance on each of the 17 SDGs. Our results, however, are not free from limitations. We recognized some gaps in our study and, thus, offered some invitations for future research.

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