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Sustainability in the Ceramic Sector: The Case of a Portuguese Business Group

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Extended Abstract

Sustainability is increasingly a key concept for industries, particularly in the ceramic sector, a sector where the many production stages contribute significantly to different adverse impacts, generating a deep concern, particularly regarding the environmental dimension. In fact, the ceramic industry involves processes that consume a high level of energy and resources [1,2], such as high-temperature firing, material handling, mixing and molding, which require significant amounts of energy, being necessary to identify and implement solutions to reduce their environmental, economic and social impacts [3]. The industry's use of raw materials, including clay, feldspar and quartz, also contributes to its high energy intensity. Furthermore, ceramic production often involves the use of fossil fuels, which further increases its energy intensity and greenhouse gas (GHG) emissions.

In order to deal with this scenario in the ceramic context, continuous monitoring through sustainability performance indicators is essential for identifying environmental, economic, and social impacts. These indicators equip managers with critical information to make strategic decisions that anticipate, mitigate, and resolve potential adverse effects associated with ceramic production.

In the particular case of Portugal, the ceramics industry, in 2021, consisted of 1,120 companies, representing 1.3% and 2.1% of the turnover and gross value added (GVA) of the national manufacturing industry, respectively [4]. In value, this industry generates more than 1,233 million euros, with emphasis on the subsectors of flooring and coverings and utilitarian and decorative ceramics. Given its economic importance and environmental footprint, the sector must pursue responsible growth by aligning with societal and environmental goals while addressing its economic, social, and environmental responsibilities. Through effective sustainability practices, the ceramics industry can reduce its impact while contributing to a more sustainable future.

Continuous monitoring through sustainability performance indicators is vital to identifying environmental, economic, and social impacts, enabling managers to make strategic decisions that anticipate, mitigate, and resolve potential adverse effects associated with ceramic production.

This research proposes to develop a set of sustainability indicators - Key Performance Indicators (KPIs) - for a Portuguese ceramics company. The methodology was rooted in a detailed literature review and aligned with European and international standards, the principle of double materiality, and the Sustainable Development Goals (SDGs).

The results of the study provided a comprehensive framework for identifying and measuring sustainability within a leading Portuguese ceramics business group across economic, environmental, social, and governance dimensions. While the company had some internal indicators, especially in the environmental domain, these were found to be incomplete, fragmented, and not systematically integrated with broader organizational objectives.

This research highlighted the existence of a common foundation of sustainability indicators across various sectors within the ceramics industry, emphasizing the potential for standardization. Such standardization could ensure alignment with global commitments, including the Paris Agreement and the SDGs, fostering resilience, accountability, and innovation in the sector. By adopting rigorous and interconnected sustainability metrics, the ceramics industry can better manage its environmental impact and contribute to a more sustainable future.

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